0069515

SAF-RC-051
100 & 300 Area Component of the RCBRA - Incremental Soil Sampling
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Jill Thomson	H0-23	____NB 4/25/06 INITIAL/DATE
Jeanette Duncan	H9-02	___NB 4/25/06 INITIAL/DATE

COMMENTS:

SDG _F1187___ SAF-RC-051

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: Ur-2, 300-2, U-1

RECEIVED
MAY 4 2006
EDMC

CH2M HILL
Applied Sciences Laboratory
2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

CH2MHILL
Applied Sciences Laboratory

RECEIVED
APR 2006

March 23, 2006

ELR Consulting
2328 S. Garfield Street
Kennewick, WA 99337

RE: Laboratory Report for ELR Consulting
Applied Sciences Laboratory Reference No. F1187

Dear Emmett Richards:

On February 10, 2006, CH2M HILL Applied Sciences Laboratory received three samples with a request for analysis of selected parameters. All analyses were performed by CH2M HILL unless otherwise indicated below.

The analytical results and associated quality control data are enclosed. Any unusual difficulties encountered during the analysis of your samples are discussed in the case narrative. This data package meets standards requested by client and is not intended or implied to meet any other standard.

CH2M HILL Applied Sciences Laboratory appreciates your business and looks forward to serving your analytical needs again. If you should have any questions concerning the data, or if you need additional information, please call Mark Bos at (541) 758-0235, extension 3135.

Sincerely,

Mark Bos
Analytical Manager

Enclosures

CLIENT SAMPLE CROSS-REFERENCE

CH2M HILL Applied Sciences Laboratory Reference No. F1187

Sample ID	Client Sample ID	Date Collected	Time Collected
F118701	J11146	02/08/2006	12:45
F118702	J11144	02/08/2006	14:30
F118703	J11145	02/08/2006	11:30

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Applied Sciences Laboratory

Organic CLP and CLP Like Data Qualifiers

U — The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J — The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ — The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N — The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ — The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

P — The primary and confirmation analyte result recoveries do not match.

E — The analyte was positively identified; the associated numerical value exceeded the instrument calibration range.

R — The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Inorganic CLP and CLP Like Data Qualifiers

U — The analyte was analyzed for, but not detected above the reported sample quantitation limit.

B — The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ — The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

E — The analyte was positively identified; the associated numerical value exceeded the instrument calibration range.

N — The matrix spike/matrix spike duplicate recovery for the analyte is outside of acceptance criteria—qualifier is applied to the native sample only.

R — The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

AMMONIA
METHOD EPA 350.3

CASE NARRATIVE
AMMONIA

Analytical Method: EPA 350.3 Batch No.: F1187

Lab Name: CH2M HILL Applied Sciences Lab Contract #.: 920842.OTC

Project Name: ELR Consulting Prime Contractor.:

I. Holding Times:
All acceptance criteria were met.

II. Analysis:

A. Calibration:
All aceeptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Matrix Spike Duplicate(MS/MSD)
All analyses were performed in accordance with standard operating procedures.

D. Laboratory Control Spike(LCS)
All acceptance criteria were met.

E. Duplicate Sample(s):
All analyses were performed in aecordance with standard operating procedures.

F. Analytical Exceptions:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the elient and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: Elizabeth M Tipps Date: 3-14-06

Reviewed by: [illegible] Date: 3/20/06

SAMPLE DATA
SUMMARY

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11146

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: F118701

% Moisture: 19

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7664-41-7	Ammonia-N	1.29	4.82	2.62	B	mg/kg	1	0.512 G	E350.3	02/13/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11144

SDG No.: F1187

Matrix: SOIL

% Moisture: 26

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118702

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7664-41-7	Ammonia-N	1.44	5.40	2.72	B	mg/kg	1	0.5005 G	E350.3	02/13/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11145

SDG No.: F1187

Matrix: SOIL

% Moisture: 22

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118703

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7664-41-7	Ammonia-N	1.38	5.15	2.42	B	mg/kg	1	0.4976 G	E350.3	02/13/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

SB1-0213

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: SB1-0213

% Moisture: 0

Date Received: / /

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7664-41-7	Ammonia-N	0.534	2.00	1.08	B	mg/kg	1	1 G	E350.3	02/13/06

QC DATA
SUMMARY

2-WC

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

Initial Calibration Date: 02/07/06 1500

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 020706NH3

Analyte	Std 1	Resp 1	Std 2	Resp 2	Std 3	Resp 3	Std 4	Resp 4	Std 5	Resp 5	Std 6	Resp 6	Std 7	Resp 7
Ammonia-N	0.10	164	1.0	107	10.0	54.4	100	-2.6						

Comments:

2-WC

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

Initial Calibration Date: 02/07/06 1500

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 020706NH3

Analyte	Curve Type	r	Q
Ammonia-N	LNR	0.9998	

Comments:

2B-WC

GENERAL CHEMISTRY SECOND SOURCE CALIBRATION VERIFICATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

Second Source ID: ICV-0207

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 020706NH3

Analyte	Expected	Found	%D	Q
Ammonia-N	10	9.96	-0.4	

Comments:

2A-WC

GENERAL CHEMISTRY CALIBRATION VERIFICATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

Analytical Lot ID: 021306NH32

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 020706NH3

CCV #1 ID: CV1-0213 CCV #2 ID: CV2-0213 CCV #3 ID: CV3-0213

Analyte	Expected	Found	%D	Q	Expected	Found	%D	Q	Expected	Found	%D	Q
Ammonia-N	1	0.886	-11.4		10	8.72	-12.8		10	9.84	-1.6	

Comments:

SOIL GENERAL CHEMISTRY METHOD BLANK SUMMARY

Field Sample ID:

SB1-0213

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

Lab Sample ID: SB1-0213

Initial Cal ID: 021306NH3

Date Analyzed: 02/13/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1220

Instrument: NONE

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
04	BS1S0213	BS1S0213	02/13/06	1203
07	J11146	F118701	02/13/06	1327
08	J11144	F118702	02/13/06	1329
09	J11145	F118703	02/13/06	1333

COMMENTS: _____

GENERAL CHEMISTRY LABORATORY CONTROL SAMPLE

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

LCS ID: BS1S0213

Initial Cal ID: 021306NH3

Date Analyzed: 02/13/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1203

Instrument: NONE

Concentration Units: mg/kg

Analyte	Expected	Found	%R	QC Limits %R	Q
Ammonia-N	200	194	97.1	80-120	

* Values outside of QC limits

Comments:

14-WC

GENERAL CHEMISTRY ANALYTICAL SEQUENCE

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

Lab Code: CVO

Instrument: NONE

Analytical Lot ID: 020706NH3

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	LEVEL1	LEVEL1	02/07/06	1500
02	LEVEL2	LEVEL2	02/07/06	1503
03	LEVEL3	LEVEL3	02/07/06	1506
04	LEVEL4	LEVEL4	02/07/06	1509
07	ICV-0207	ICV-0207	02/07/06	1544

COMMENTS: _____

14-WC

GENERAL CHEMISTRY ANALYTICAL SEQUENCE

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E350.3

Lab Code: CVO

Instrument: NONE

Analytical Lot ID: 021306NH32

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
05	CV1-0213	CV1-0213	02/13/06	1155
06	CV2-0213	CV2-0213	02/13/06	1201
08	BS1S0213	BS1S0213	02/13/06	1203
09	SB1-0213	SB1-0213	02/13/06	1220
11	J11146	F118701	02/13/06	1327
12	J11144	F118702	02/13/06	1329
13	J11145	F118703	02/13/06	1333
14	CV3-0213	CV3-0213	02/13/06	1335

COMMENTS: _____

CH2MHILL
Applied Sciences Laboratory

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P.O. Box 428
Corvallis, OR 97330-0428
Telephone: 541-752-4271
Fax: 541-752-0276

03/14/06

MDL Study Report

Analytical Method: E350.3

Matrix: Soil

Instrument ID: NONE

Concentration Units: mg/kg

Analyte	Analysis Date	Amt. Spiked	Replicates 1	2	3	4	5	6	7	8	Std. Dev.	MDL
Ammonia	08/05/05	2	2.18	1.70	1.73	1.70	1.73	1.74	1.81		0.170	0.534

ANIONS BY METHOD EPA300.0

CASE NARRATIVE
ANIONS

Analytical Method: EPA300.0 Batch No.: F1187

Lab Name: CH2M HILL Applied Sciences Lab Contract #.: 334247.AO.ZZ

Base/Command: ELR Consulting Prime Contractor.: _____

I. Holding Times:
All acceptance criteria were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Matrix Spike Duplicate Sample(s):
Samples were analyzed in accordance with SOP.

D. Laboratory Control Spike(LCS)
All acceptance criteria were met.

E. Analytical Exception:
None.

F. Other:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: _____ Date: 2/21/06

Revicwed by: _____ Date: 2/27/06

SAMPLE DATA SUMMARY

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11146

SDG No.: F1187

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118701

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
16887-00-6	Chloride	0.0151	0.312	0.733		mg/kg	1	4.951 G	E300.0A	02/14/06
16984-48-8	Fluoride	0.0135	0.312	0.312	U	mg/kg	1	4.951 G	E300.0A	02/14/06
14797-55-8	Nitrate-N	0.0117	0.312	1.22		mg/kg	1	4.951 G	E300.0A	02/14/06
14797-65-0	Nitrite-N	0.0112	0.312	0.312	U	mg/kg	1	4.951 G	E300.0A	02/14/06
14808-79-8	Sulfate	0.0201	0.312	3.48		mg/kg	1	4.951 G	E300.0A	02/14/06

YL060224-15:49-F1187-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11144

SDG No.: F1187

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118702

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
16887-00-6	Chloride	0.0181	0.372	0.372	U	mg/kg	1	4.536 G	E300.0A	02/14/06
16984-48-8	Fluoride	0.0162	0.372	0.372	U	mg/kg	1	4.536 G	E300.0A	02/14/06
14797-55-8	Nitrate-N	0.0140	0.372	1.03		mg/kg	1	4.536 G	E300.0A	02/14/06
14797-65-0	Nitrite-N	0.0134	0.372	0.372	U	mg/kg	1	4.536 G	E300.0A	02/14/06
14808-79-8	Sulfate	0.0240	0.372	4.35		mg/kg	1	4.536 G	E300.0A	02/14/06

YL060224-15:49-F1187-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11145

SDG No.: F1187

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118703

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
16887-00-6	Chloride	0.0125	0.256	0.569		mg/kg	1	6.248 G	E300.0A	02/14/06
16984-48-8	Fluoride	0.0111	0.256	0.256	U	mg/kg	1	6.248 G	E300.0A	02/14/06
14797-55-8	Nitrate-N	0.00963	0.256	1.30		mg/kg	1	6.248 G	E300.0A	02/14/06
14797-65-0	Nitrite-N	0.00921	0.256	0.256	U	mg/kg	1	6.248 G	E300.0A	02/14/06
14808-79-8	Sulfate	0.0165	0.256	4.38		mg/kg	1	6.248 G	E300.0A	02/14/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

SB1-0214

SDG No.: F1187

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: SB1-0214

Date Received: / /

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
16887-00-6	Chloride	0.0243	0.500	0.500	U	mg/kg	1	2.5 G	E300.0A	02/14/06
16984-48-8	Fluoride	0.0217	0.500	0.500	U	mg/kg	1	2.5 G	E300.0A	02/14/06
14797-55-8	Nitrate-N	0.0188	0.500	0.500	U	mg/kg	1	2.5 G	E300.0A	02/14/06
14797-65-0	Nitrite-N	0.0180	0.500	0.500	U	mg/kg	1	2.5 G	E300.0A	02/14/06
14808-79-8	Sulfate	0.0323	0.500	0.500	U	mg/kg	1	2.5 G	E300.0A	02/14/06

QC DATA SUMMARY

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

Initial Calibration Date: 01/30/06 18:27

Instrument Name: ICQ

Concentration Units: mg/L

Initial Calibration ID: 300A-013006

Analyte	Std 1	Resp 1	Std 2	Resp 2	Std 3	Resp 3	Std 4	Resp 4	Std 5	Resp 5	Std 6	Resp 6	Std 7	Resp 7
Chloride	0.020	0.0032	0.050	0.0041	0.10	0.023	0.50	0.050	1.0	0.11	5.0	0.67	10.0	1.5
Fluoride					0.10	0.0085	0.50	0.046	1.0	0.13	5.0	0.85	10.0	1.8
Nitrate-N	0.020	0.0059	0.050	0.012	0.10	0.067	0.50	0.14	1.0	0.32	5.0	1.8	10.0	4.1
Nitrite-N	0.020	0.0067	0.050	0.012	0.10	0.050	0.50	0.10	1.0	0.25	5.0	1.4	10.0	3.0
Sulfate	0.020	0.0065	0.15	0.014	0.60	0.059	1.5	0.13	3.0	0.27	15.0	1.5	30.0	3.2

2-WC

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

Initial Calibration Date: 01/30/06 18:27

Instrument Name: ICQ

Concentration Units: mg/L

Initial Calibration ID: 300A-013006

Analyte	Curve Type	r	Q
Chloride	LNR	0.9985	
Fluoride	LNR	0.9988	
Nitrate-N	LNR	0.9983	
Nitrite-N	LNR	0.9988	
Sulfate	LNR	0.9991	

2B-WC

GENERAL CHEMISTRY SECOND SOURCE CALIBRATION VERIFICATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

Instrument Name: ICQ

Concentration Units: MG/L

Initial Calibration ID: 300A-013006

Second Source ID: ICV-0130

Analyte	Expected	Found	%D	Q
Chloride	5	5.06	1.2	
Fluoride	5	4.57	-8.6	
Nitrate-N	7.19	7.13	-0.8	
Nitrite-N	1.13	1.02	-9.4	
Sulfate	5	5.14	2.8	

Comments:

2A-WC

GENERAL CHEMISTRY CALIBRATION VERIFICATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

Analytical Lot ID: 021406Q1

Instrument Name: ICQ

Concentration Units: mg/L

Initial Calibration ID: 300A-013006

CCV #1 ID: CV1-0214 CCV #2 ID: CV2-0214 CCV #3 ID:

Analyte	Expected	Found	%D	Q	Expected	Found	%D	Q	Expected	Found	%D	Q
Chloride	5	5.04	0.8		5	4.99	-0.1					
Fluoride	5	4.83	-3.4		5	4.64	-7.1					
Nitrate-N	5	4.95	-1.0		5	4.95	-1.0					
Nitrite-N	5	5.43	8.6		5	5.42	8.5					
Sulfate	15	16.2	8.2		15	16.2	8.2					

Comments:

3-WC

SOIL GENERAL CHEMISTRY METHOD BLANK SUMMARY

Field Sample ID:

SB1-0214

SDG No.: F1187

Analysis Method: E300.0A

Initial Cal ID: 300A-013006

Matrix: (Soil/Water) SOIL

Instrument: ICQ

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: SB1-0214

Date Analyzed: 02/14/06

Time Analyzed: 1248

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
16	BS1S0214	BS1S0214	02/14/06	1158
18	BS2S0214	BS2S0214	02/14/06	1219
20	BS4S0214	BS4S0214	02/14/06	1239
25	J11146	F118701	02/14/06	1327
26	J11144	F118702	02/14/06	1337
27	J11145	F118703	02/14/06	1347

COMMENTS: _____

GENERAL CHEMISTRY LABORATORY CONTROL SAMPLE

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

LCS ID: BS1S0214

Initial Cal ID: 300A-013006

Date Analyzed: 02/14/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1158

Instrument: ICQ

Concentration Units: mg/kg

Analyte	Expected	Found	%R	QC Limits %R	Q
Chloride	50	54.4	108.8	70-130	
Fluoride	50	49.9	99.7	70-130	
Sulfate	50	54.8	109.6	70-130	

* Values outside of QC limits

Comments:

GENERAL CHEMISTRY LABORATORY CONTROL SAMPLE

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

LCS ID: BS2S0214

Initial Cal ID: 300A-013006

Date Analyzed: 02/14/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1219

Instrument: ICQ

Concentration Units: mg/kg

Analyte	Expected	Found	%R	QC Limits %R	Q
Nitrite-N	11.3	11.4	100.5	70-130	

* Values outside of QC limits

Comments:

7-WC

GENERAL CHEMISTRY LABORATORY CONTROL SAMPLE

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

LCS ID: BS4S0214

Initial Cal ID: 300A-013006

Date Analyzed: 02/14/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1239

Instrument: ICQ

Concentration Units: mg/kg

Analyte	Expected	Found	%R	QC Limits %R	Q
Nitrate-N	71.9	77.1	107.2	70-130	

* Values outside of QC limits

Comments:

14-WC

GENERAL CHEMISTRY ANALYTICAL SEQUENCE

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

Lab Code: CVO

Instrument: ICQ

Analytical Lot ID: 300A-013006

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
02	LEVEL1	LEVEL1	01/30/06	1729
03	LEVEL2	LEVEL2	01/30/06	1739
04	LEVEL3	LEVEL3	01/30/06	1749
05	LEVEL4	LEVEL4	01/30/06	1758
06	LEVEL5	LEVEL5	01/30/06	1808
07	LEVEL6	LEVEL6	01/30/06	1818
08	LEVEL7	LEVEL7	01/30/06	1827
10	ICV-0130	ICV-0130	01/30/06	1846
11	ICV-0130	ICV-0130	01/30/06	1856
13	ICV-0130	ICV-0130	01/30/06	1916

COMMENTS: _____

GENERAL CHEMISTRY ANALYTICAL SEQUENCE

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E300.0A

Lab Code: CVO

Instrument: ICQ

Analytical Lot ID: 021406Q1

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
15	CV1-0214	CV1-0214	02/14/06	1149
16	BS1S0214	BS1S0214	02/14/06	1158
18	BS2S0214	BS2S0214	02/14/06	1219
20	BS4S0214	BS4S0214	02/14/06	1239
21	SB1-0214	SB1-0214	02/14/06	1248
25	J11146	F118701	02/14/06	1327
26	J11144	F118702	02/14/06	1337
27	J11145	F118703	02/14/06	1347
28	CV2-0214	CV2-0214	02/14/06	1504

COMMENTS: _____

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Telephone: 541-752-4271
Fax: 541-752-0276

02/21/06

MDL Study Report

Analytical Method: E300.0A

Matrix: Water

Instrument ID: ICQ

Concentration Units: MG/L

Analyte	Analysis Date	Amt. Spiked	Replicates 1	2	3	4	5	6	7	8	Std. Dev.	MDL
Nitrate	11/01/05	0.05	0.0450	0.0500	0.0430	0.0480	0.0490	0.0450	0.0510		0.00298	0.00939
Nitrite-N	11/01/05	0.05	0.0460	0.0540	0.0540	0.0520	0.0540	0.0520	0.0530		0.00285	0.00898
Sulfate	11/01/05	0.15	0.158	0.147	0.146	0.159	0.155	0.150	0.152		0.00513	0.0161
Chloride	11/01/05	0.05	0.0630	0.0630	0.0680	0.0680	0.0580	0.0600	0.0660		0.00386	0.0122
Fluoride	11/02/05	0.1	0.101	0.0960	0.100	0.0940	0.0980	0.0970	0.0910		0.00345	0.0109

PERCENT MOISTURE
ASTM D2216

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11146

SDG No.: F1187

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118701

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
MOISTURE	Moisture	0.00	0.00	18.7		%	1	21.7095 G	ASTM D2216	02/14/06

ET060322-12:44-F1187-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11144

SDG No.: F1187

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118702

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
MOISTURE	Moisture	0.00	0.00	25.9		%	1	17.1937 G	ASTM D2216	02/14/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11145

SDG No.: F1187

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118703

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
MOISTURE	Moisture	0.00	0.00	21.9		%	1	22.6387 G	ASTM D2216	02/14/06

PARTICLE SIZE
METHOD 422

Hanford

Particle Size

703.1 **g sample used**

Weight retained is the weight of material ON each sieve

ANALYST: **KM** **03/13/2006**

Lab I.D.	Client I.D.	Sieve #	Sieve Size (um)	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Coarser (%)	Cumulative Finer (%)
F118701	J11146	8	2362	2.362	275.20	39.22	39.22	60.78
		16	1180	1.180	122.20	17.42	56.64	43.36
		30	600	0.600	77.30	11.02	67.66	32.34
		50	500	0.500	73.60	10.49	78.15	21.85
		100	147	0.147	103.00	14.68	92.83	7.17
		200	75	0.075	40.30	5.74	98.57	1.43
		pan			10.00	1.43	100.00	0.00
		total			701.6			

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Hanford

Particle Size

510.1 g sample used

Weight retained is the weight of material ON each sieve

ANALYST: KM 03/13/2006

Lab I.D.	Client I.D.	Sieve #	Sieve Size (um)	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Coarser (%)	Cumulative Finer (%)
F118702	JP11144	8	2362	2.362	5.70	1.12	1.12	98.88
	NB	16	1180	1.180	39.50	7.76	8.88	91.12
	4/25/06	30	600	0.600	22.40	4.40	13.28	86.72
		50	500	0.500	38.70	7.60	20.89	79.11
		100	147	0.147	290.00	56.99	77.87	22.13
		200	75	0.075	82.80	16.27	94.14	5.86
		pan			29.80	5.86	100.00	0.00
		total			508.9			

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Hanford

Particle Size

831.0 **g sample used**

Weight retained is the weight of material ON each sieve

ANALYST: **KM** **03/13/2006**

Lab I.D.	Client I.D.	Sieve #	Sieve Size (um)	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Coarser (%)	Cumulative Finer (%)
F118703	J/11145	8	2362	2.362	28.20	3.40	3.40	96.60
	4125106 NB	16	1180	1.180	7.80	0.94	4.34	95.66
		30	600	0.600	43.50	5.24	9.58	90.42
		50	500	0.500	458.80	55.26	64.84	35.16
		100	147	0.147	232.40	27.99	92.83	7.17
		200	75	0.075	52.80	6.36	99.19	0.81
		pan			6.70	0.81	100.00	0.00
		total			830.2			

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pH
METHOD SW9045C

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11146

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: F118701

% Moisture: 19

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
pH	pH	0.00	0.00	7.52		pH	1	20 G	SW9045C	02/14/06

ET060315-18:52-F1187-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11144

SDG No.: F1187

Matrix: SOIL

% Moisture: 26

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118702

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
pH	pH	0.00	0.00	7.24		pH	1	20 G	SW9045C	02/14/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11145

SDG No.: F1187

Matrix: SOIL

% Moisture: 22

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118703

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
pH	pH	0.00	0.00	7.47		pH	1	20 G	SW9045C	02/14/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

SB1-0214

SDG No.: F1187

Matrix: SOIL

% Moisture: 0

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: SB1-0214

Date Received: / /

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
pH	pH	0.00	0.00	6.14		pH	1	20 G	SW9045C	02/14/06

ET060315-18:52-F1187-W

FORM I GEN CHEM

TKN
METHOD EPA 351.4

CASE NARRATIVE
TKN

Analytical Method: EPA 351.4 Batch No.: F1187

Lab Name: CH2M HILL Applied Sciences Lab Contract #.: 920842.OTC

Project Name: ELR Consulting Prime Contractor.: _____

I. Holding Times:
All acceptance criteria were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Matrix Spike Duplicate(MS/MSD)
All analyses were performed in accordance with standard operating procedures.

D. Laboratory Control Spike(LCS)
All acceptance criteria were met.

E. Duplicate Sample(s):
All analyses were performed in accordance with standard operating procedures.

F. Analytical Exceptions:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
None

V. I certify that this data paekage is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: Elizabeth M Tyree Date: 3/14/06

Reviewed by: [illegible] Date: 3/20/06

SAMPLE DATA SUMMARY

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11146

SDG No.: F1187

Matrix: SOIL

% Moisture: 19

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118701

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7727-37-9	Total Kjeldahl Nitrogen as N	47.1	225	896		mg/kg	1	0.5496 G	E351.4	02/14/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11144

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Matrix: SOIL

Lab Sample ID: F118702

% Moisture: 26

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7727-37-9	Total Kjeldahl Nitrogen as N	55.6	265	554		mg/kg	1	0.509 G	E351.4	02/14/06

MB060320-14:01-F1187-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11145

SDG No.: F1187

Matrix: SOIL

% Moisture: 22

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118703

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7727-37-9	Total Kjeldahl Nitrogen as N	48.0	229	382		mg/kg	1	0.5601 G	E351.4	02/14/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

SB1-0214

SDG No.: F1187

Matrix: SOIL

% Moisture: 0

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: SB1-0214

Date Received: / /

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
7727-37-9	Total Kjeldahl Nitrogen as N	21.0	100	46.1	B	mg/kg	1	1 G	E351.4	02/14/06

QC DATA SUMMARY

2-WC

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E351.4

Initial Calibration Date: 02/14/06 9:30

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 021406TKN

Analyte	Std 1	Resp 1	Std 2	Resp 2	Std 3	Resp 3	Std 4	Resp 4	Std 5	Resp 5	Std 6	Resp 6	Std 7	Resp 7
Total Kjeldahl Nitrogen	2.0	168	20.0	114	200	61.4	2000	2.8						

Comments:

2-WC

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E351.4

Initial Calibration Date: 02/14/06 9:30

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 021406TKN

Analyte	Curve Type	r	Q
Total Kjeldahl Nitrogen as N	LNR	0.9995	

Comments:

2B-WC

GENERAL CHEMISTRY SECOND SOURCE CALIBRATION VERIFICATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E351.4

Second Source ID: ICV-0214

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 021406TKN

Analyte	Expected	Found	%D	Q
Total Kjeldahl Nitrogen as N	13.6	15.5	14.2	

Comments:

2A-WC

GENERAL CHEMISTRY CALIBRATION VERIFICATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E351.4

Analytical Lot ID: 021406TKN2

Instrument Name: NONE

Concentration Units: mg/L

Initial Calibration ID: 021406TKN

CCV #1 ID: CV1-0214 CCV #2 ID: CV2-0214 CCV #3 ID: CV3-0214

Analyte	Expected	Found	%D	Q	Expected	Found	%D	Q	Expected	Found	%D	Q
Total Kjeldahl Nitrogen as N	20	20.2	0.8		200	182	-9.1		20	20.8	3.8	

Comments:

3-WC

SOIL GENERAL CHEMISTRY METHOD BLANK SUMMARY

Field Sample ID:

SB1-0214

SDG No.: F1187

Analysis Method: E351.4

Initial Cal ID: 021406TKN

Matrix: (Soil/Water) SOIL

Instrument: NONE

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: SB1-0214

Date Analyzed: 02/14/06

Time Analyzed: 0959

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
08	BS1S0214	BS1S0214	02/14/06	0947
11	J11146	F118701	02/14/06	1033
12	J11144	F118702	02/14/06	1035
13	J11145	F118703	02/14/06	1036

COMMENTS:

7-WC

GENERAL CHEMISTRY LABORATORY CONTROL SAMPLE

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E351.4

LCS ID: BS1S0214

Initial Cal ID: 021406TKN

Date Analyzed: 02/14/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 0947

Instrument: NONE

Concentration Units: mg/kg

Analyte	Expected	Found	%R	QC Limits %R	Q
Total Kjeldahl Nitrogen as N	680	777	114.2	75-125	

* Values outside of QC limits

Comments:

14-WC

GENERAL CHEMISTRY ANALYTICAL SEQUENCE

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: E351.4

Lab Code: CVO

Instrument: NONE

Analytical Lot ID: 021406TKN2

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	LEVEL-1	LEVEL-1	02/14/06	0915
02	LEVEL-2	LEVEL-2	02/14/06	0920
03	LEVEL-3	LEVEL-3	02/14/06	0925
04	LEVEL-4	LEVEL-4	02/14/06	0930
05	CV1-0214	CV1-0214	02/14/06	0935
06	CV2-0214	CV2-0214	02/14/06	0940
07	ICV-0214	ICV-0214	02/14/06	0947
08	BS1S0214	BS1S0214	02/14/06	0947
09	SB1-0214	SB1-0214	02/14/06	0959
11	J11146	F118701	02/14/06	1033
12	J11144	F118702	02/14/06	1035
13	J11145	F118703	02/14/06	1036
14	CV3-0214	CV3-0214	02/14/06	1044

COMMENTS: _____

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03/20/06

MDL Study Report

Analytical Method: E351.4

Instrument ID: NONE

Matrix: Soil

Concentration Units: mg/kg

Analyte	Analysis Date	Amt. Spiked	Replicates 1	2	3	4	5	6	7	8	Std. Dev.	MDL
Total Kjeldahl Nitrogen	03/17/05	100	100	109	113	103	101	116	99.8		6.66	21.0

TOTAL ORGANIC CARBON
BY ASTM E777-81

CASE NARRATIVE
TOC SOIL

Analytical Method: ASTM E-777 Batch No.: F1187

Lab Name: CH2M HILL Applied Sciences Lab Contract #.: 920842.OTC

I. Holding Times:
All acceptance criteria were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Matrix Spike Duplicate Sample(s):
All acceptance criteria were met.

D. Laboratory Control Spike(LCS)
All acceptance criteria were met.

E. Analytical Exception:
None.

F. Other:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: _____ Date: 2-27-06

Reviewed by: _____ Date: 2/28/6

SAMPLE DATA SUMMARY

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11146

SDG No.: F1187

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118701

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
TOC	Total Organic Carbon	46.8	134	7430		mg/kg	1	0.7468 G	ASTM E-777	02/20/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11144

SDG No.: F1187

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118702

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
TOC	Total Organic Carbon	39.7	114	2700		mg/kg	1	0.8793 G	ASTM E-777	02/20/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

J11145

SDG No.: F1187

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F118703

Date Received: 02/10/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
TOC	Total Organic Carbon	35.8	102	1440		mg/kg	1	0.9762 G	ASTM E-777	02/20/06

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

SB1-0220

SDG No.: F1187

Matrix: SOIL

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: SB1-0220

Date Received: / /

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
TOC	Total Organic Carbon	35.0	100	100	U	mg/kg	1	1 G	ASTM E-777	02/20/06

QC SUMMARY

2-WC

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: ASTM E-777

Initial Calibration Date: 10/14/05 11:48

Instrument Name: TOC Skalar

Concentration Units: mg/Kg

Initial Calibration ID: 101405S1

Analyte	Std 1	Resp 1	Std 2	Resp 2	Std 3	Resp 3	Std 4	Resp 4	Std 5	Resp 5	Std 6	Resp 6	Std 7	Resp 7
Total Organic Carbon	100	737000	200	1600000	1000	6840000	4000	2.48E+7	8000	4.79E+7				

Comments:

GENERAL CHEMISTRY INITIAL CALIBRATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: ASTM E-777

Initial Calibration Date: 10/14/05 11:48

Instrument Name: TOC Skalar

Concentration Units: mg/Kg

Initial Calibration ID: 101405S1

Analyte	Curve Type	r	Q
Total Organic Carbon	LNR	0.9997	

Comments:

2B-WC

GENERAL CHEMISTRY SECOND SOURCE CALIBRATION VERIFICATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: ASTM E-777

Second Source ID: ICV-1014

Instrument Name: TOC Skalar

Concentration Units: mg/kg

Initial Calibration ID: 101405S1

Analyte	Expected	Found	%D	Q
Total Organic Carbon	6430	6680	3.9	

Comments:

GENERAL CHEMISTRY CALIBRATION VERIFICATION DATA

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: ASTM E-777

Analytical Lot ID: 022006TOCS

Instrument Name: TOC Skalar

Concentration Units: mg/kg

Initial Calibration ID: 101405S1

CCV #1 ID: CV1-0220 CCV #2 ID: CV2-0220 CCV #3 ID:

Analyte	Expected	Found	%D	Q	Expected	Found	%D	Q	Expected	Found	%D	Q
Total Organic Carbon	4000	3820	-4.4		4000	3970	-0.7					

Comments:

3-WC

SOIL GENERAL CHEMISTRY METHOD BLANK SUMMARY

Field Sample ID:

SB1-0220

SDG No.: F1187

Analysis Method: ASTM E-777

Initial Cal ID: 101405S1

Matrix: (Soil/Water) SOIL

Instrument: TOC Skalar

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: SB1-0220

Date Analyzed: 02/20/06

Time Analyzed: 1043

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
02	BS1S0220	BS1S0220	02/20/06	1034
06	J11146	F118701	02/20/06	1122
07	J11144	F118702	02/20/06	1131
08	J11145	F118703	02/20/06	1142

COMMENTS:

7-WC

GENERAL CHEMISTRY LABORATORY CONTROL SAMPLE

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: ASTM E-777

LCS ID: BS1S0220

Initial Cal ID: 101405S1

Date Analyzed: 02/20/06

Matrix: (Soil/Water) SOIL

Time Analyzed: 1034

Instrument: TOC Skalar

Concentration Units: mg/kg

Analyte	Expected	Found	%R	QC Limits %R	Q
Total Organic Carbon	8840	9270	104.8	75-125	

* Values outside of QC limits

Comments:

14-WC

GENERAL CHEMISTRY ANALYTICAL SEQUENCE

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: ASTM E-777

Lab Code: CVO

Instrument: TOC Skalar

Analytical Lot ID: 101405TOCS

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
02	LEVEL1	LEVEL1	10/14/05	1148
03	LEVEL2	LEVEL2	10/14/05	1158
04	LEVEL3	LEVEL3	10/14/05	1208
05	LEVEL4	LEVEL4	10/14/05	1218
06	LEVEL5	LEVEL5	10/14/05	1228
07	ICV-1014	ICV-1014	10/14/05	1252

COMMENTS: _____

GENERAL CHEMISTRY ANALYTICAL SEQUENCE

SDG No.: F1187

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: ASTM E-777

Lab Code: CVO

Instrument: TOC Skalar

Analytical Lot ID: 022006TOCS

	CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	CV1-0220	CV1-0220	02/20/06	1022
02	BS1S0220	BS1S0220	02/20/06	1034
03	SB1-0220	SB1-0220	02/20/06	1043
06	J11146	F118701	02/20/06	1122
07	J11144	F118702	02/20/06	1131
08	J11145	F118703	02/20/06	1142
16	CV2-0220	CV2-0220	02/20/06	1455

COMMENTS: _____

CH2MHILL
Applied Sciences Laboratory

CH2M HILL
Applied Sciences Labortory (ASL)
2300 NW Walnut Blvd.
P.O. Box 428
Corvallis, OR 97330-0428
Telephone: 541-752-4271
Fax: 541-752-0276

02/27/06

MDL Study Report

Analytical Method: ASTM E-777

Instrument ID: TOC Skalar

Matrix: Soil

Concentration Units: mg/kg

Analyte	Analysis Date	Amt. Spiked	Replicates 1	2	3	4	5	6	7	8	Std. Dev.	MDL
Total Organic Carbon	08/17/05	140	31.0	14.4	8.89	29.4	32.4	27.1	6.37		11.1	35.0

CHAIN OF CUSTODY/SHIPPING DOCUMENTS

F 1187

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-9	Page 1 of 1

Collector: JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 21 Days	Air Quality: ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U-2		SAF No.: RC-047
Ice Chest No.: AFS-04-050	Field Logbook No.: EL-15987 JBC 2-8-06	COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT
Shipped To: CH2MHILL	Offsite Property No.: A060151		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	1 JBC 2-8-06	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J11146	OTHER SOLID	2-8-06	1245	X	X	X							1

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1700 2-8-06	EAS LOCKED STORAGE	1700 2-8-06
JAMES BERNHARD	0715 2-9-06	RZ Stoffler	0715 2-9-06
RZ Stoffler	1500 2-9-06	Fed Ex	
Fed Ex		Brett Mudge	1400 2-10-06
		Kathy McCune	2/10/06 1410

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1539-02 for Hydrides
B1539-02 for metals / pH CN
COC seals intact

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

F 1187

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-7	Page 1 of 1

Collector: JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 21 Days	Air Quality: ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 300-2		SAF No.: RC-047
Ice Chest No.: AFS-04-050	Field Logbook No.: EL-15967 SEJ 2-8-06	COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT
Shipped To: CH2MHILL	Offsite Property No.: A060151		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	2 TBG 2-8	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J11144	OTHER SOLID	2-8-06	1430	X	X	X							-2

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-8-06 1700	EAS LOCKED STORAGE	2-8-06 1700
JAMES BERNHARD	2-9-06 0715	RZ Stoffler	2-9-06 0715
RZ Stoffler	2-9-06 1500	Fed Ex	
Fed Ex		Dott Mulkey	2-10-06 1400
		Kathy McCurley	2/10/06 1410

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1533-03 for Hyallelia
B1539-03 for Nitrodesa / Pak Choi
COC seals intact on arrival

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

F 1187

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-8	Page 1 of 1

Collector: JEB JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 21 Days	Air Quality: [ ]	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U-1		SAF No.: RC-047
Ice Chest No.: AFS-04-050	Field Logbook No.: EL-15987 JEB 2-8-06	COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT
Shipped To: CH2MHILL	Offsite Property No.: A060151		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None									
Type of Container	G/P	P/G	P/G									
No. of Container(s)	#2 JEB 2-8-06	1	1									
Volume	1000g	3000g	19000g									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity BEDP-04-11									

Sample No.	Matrix *	Sample Date	Sample Time										
J11145	OTHER SOLID	2-8-06	1130	X	X	X							-3

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 1700 2-8-06	Received By/Stored In: EAS LOCKED STORAGE — Date/Time: 1700 2-8-06
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 0715 2-9-06	Received By/Stored In: RZ Stoffler R.Z. Stoffler — Date/Time: 0715 2-9-06
Relinquished By/Removed From: RZ Stoffler R.Z. Stoffler WEA — Date/Time: 1500 2-9-06		Received By/Stored In: Fed Ex — Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time:	Received By/Stored In: Brett Mulkey — Date/Time: 1400 2-10-06
Relinquished By/Removed From	Date/Time	Received By/Stored In: Kathy McKenley 2/10/06 1410 — Date/Time:
Relinquished By/Removed From	Date/Time	Received By/Stored In — Date/Time:

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1538-04 for Hyatt Ck
B1539-04 for Nitrogen / pulchri

COC seals intact on arrival

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

CH2MHILL
Analytical Services

Sample Receipt Record

Batch Number: F1187 Date received: 2/10/04

Client/Project ELR

VERIFICATION OF SAMPLE CONDITIONS (verify all items) * HD = Client Hand delivered Samples

Observation	YES	NO
Radiological Screening for AFCEE		x
Were custody seals intact and on the outside of the cooler?	x	
If yes, Where? Front____ Rear____ Lt Side____ Rt Side____		
Type of packing material: Ice Blue Ice Bubble wrap		
Was the Chain of Custody inside the cooler?	x	
Was the Chain of Custody properly filled out?	x	
Were the sample containers in good condition?	x	
Containers supplied by ASL?		x
Any sample with < 1/2 holding time remaining? If so contact LPM		x
Was there ice in the cooler? Enter temp. C	x	
All VOCs free of air bubbles ?		NA

If the answer to any of the questions above is NO, a Sample Receipt Exceptions Report Must be written.

VERIFICATION OF SAMPLE PRESERVATION (verify all preserved samples except HAAs, HANs and CH)

Sample No	Nutrients pH <2	Metals pH <2	Volatiles pH <2	Cyanides pH >12	TOC pH <2	TOX pH <2	Other (specify)	N/A (solids/unpres)
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

LOGIN AND pH VERIFICATIONS PERFORMED BY

KMCLaughlin 2/10/00 1410
Date/Time

Date/Time

VersionCo	LabName	SDG	FieldID	NativeID	QAQCTyp	LRType	Matrix	LabSampl	AnalysisM	ExtractionI	SampleDa	SampleTin	ReceiveDa	ExtractDat	ExtractTim	AnalysisDa	AnalysisTi	PercentSo	LabLotCtlN	CAS	ParamID	Analyte	Result
4.00	EPAC	CHMC	F1187	J11146	J11146	N	SOIL	F118701	E350.3	METHOD	2/8/2006	12:45	2/10/2006	2/13/2006	13:27	2/13/2006	13:27	81.3	SB1-0213	7664-41-7	NH3N	Ammonia-I	2.62
4.00	EPAC	CHMC	F1187	J11146	J11146	N	SOIL	F118701	E351.4	METHOD	2/8/2006	12:45	2/10/2006	2/14/2006	10:33	2/14/2006	10:33	81.3	SB1-0214	7727-37-9	KN	Total Kjeld	896
4.00	EPAC	CHMC	F1187	J11146	J11146	N	SOIL	F118701	ASTM E-7	NONE	2/8/2006	12:45	2/10/2006			2/20/2006	11:22	81.3		TOC	TOC	Total Orga	7430
4.00	EPAC	CHMC	F1187	J11146	J11146	N	SOIL	F118701	E300.0A	METHOD	2/8/2006	12:45	2/10/2006	2/14/2006	13:27	2/14/2006	13:27	81.3	SB1-0214	16887-00-(	CL	Chloride	0.733
4.00	EPAC	CHMC	F1187	J11146	J11146	N	SOIL	F118701	E300.0A	METHOD	2/8/2006	12:45	2/10/2006	2/14/2006	13:27	2/14/2006	13:27	81.3	SB1-0214	16984-48-(	F	Fluoride	0.623
4.00	EPAC	CHMC	F1187	J11146	J11146	N	SOIL	F118701	E300.0A	METHOD	2/8/2006	12:45	2/10/2006	2/14/2006	13:27	2/14/2006	13:27	81.3	SB1-0214	14797-55-(	NO3N	Nitrate-N	1.22
4.00	EPAC	CHMC	F1187	J11146	J11146	N	SOIL	F118701	E300.0A	METHOD	2/8/2006	12:45	2/10/2006	2/14/2006	13:27	2/14/2006	13:27	81.3	SB1-0214	14797-65-(	NO2N	Nitrite-N	0.623
4.00	EPAC	CHMC	F1187	J11146	J11146	N	SOIL	F118701	E300.0A	METHOD	2/8/2006	12:45	2/10/2006	2/14/2006	13:27	2/14/2006	13:27	81.3	SB1-0214	14808-79-(	SO4	Sulfate	3.48
4.00	EPAC	CHMC	F1187	J11146	J11146	N	SOIL	F118701	ASTM D22	NONE	2/8/2006	12:45	2/10/2006			2/14/2006	9:50	81.3		MOISTURI	MOIST	Moisture	18.7
4.00	EPAC	CHMC	F1187	J11146	J11146	N	SOIL	F118701	SW9045C	METHOD	2/8/2006	12:45	2/10/2006	2/14/2006	11:48	2/14/2006	11:48	81.3	SB1-0214	pH	PH	pH	7.52
4.00	EPAC	CHMC	F1187	J11144	J11144	N	SOIL	F118702	E350.3	METHOD	2/8/2006	14:30	2/10/2006	2/13/2006	13:29	2/13/2006	13:29	74.1	SB1-0213	7664-41-7	NH3N	Ammonia-I	2.72
4.00	EPAC	CHMC	F1187	J11144	J11144	N	SOIL	F118702	E351.4	METHOD	2/8/2006	14:30	2/10/2006	2/14/2006	10:35	2/14/2006	10:35	74.1	SB1-0214	7727-37-9	KN	Total Kjeld	554
4.00	EPAC	CHMC	F1187	J11144	J11144	N	SOIL	F118702	ASTM E-7	NONE	2/8/2006	14:30	2/10/2006			2/20/2006	11:31	74.1		TOC	TOC	Total Orga	2700
4.00	EPAC	CHMC	F1187	J11144	J11144	N	SOIL	F118702	E300.0A	METHOD	2/8/2006	14:30	2/10/2006	2/14/2006	13:37	2/14/2006	13:37	74.1	SB1-0214	16887-00-(	CL	Chloride	0.298
4.00	EPAC	CHMC	F1187	J11144	J11144	N	SOIL	F118702	E300.0A	METHOD	2/8/2006	14:30	2/10/2006	2/14/2006	13:37	2/14/2006	13:37	74.1	SB1-0214	16984-48-(	F	Fluoride	0.745
4.00	EPAC	CHMC	F1187	J11144	J11144	N	SOIL	F118702	E300.0A	METHOD	2/8/2006	14:30	2/10/2006	2/14/2006	13:37	2/14/2006	13:37	74.1	SB1-0214	14797-55-(	NO3N	Nitrate-N	1.03
4.00	EPAC	CHMC	F1187	J11144	J11144	N	SOIL	F118702	E300.0A	METHOD	2/8/2006	14:30	2/10/2006	2/14/2006	13:37	2/14/2006	13:37	74.1	SB1-0214	14797-65-(	NO2N	Nitrite-N	0.745
4.00	EPAC	CHMC	F1187	J11144	J11144	N	SOIL	F118702	E300.0A	METHOD	2/8/2006	14:30	2/10/2006	2/14/2006	13:37	2/14/2006	13:37	74.1	SB1-0214	14808-79-(	SO4	Sulfate	4.35
4.00	EPAC	CHMC	F1187	J11144	J11144	N	SOIL	F118702	ASTM D22	NONE	2/8/2006	14:30	2/10/2006			2/14/2006	9:50	74.1		MOISTURI	MOIST	Moisture	25.9
4.00	EPAC	CHMC	F1187	J11144	J11144	N	SOIL	F118702	SW9045C	METHOD	2/8/2006	14:30	2/10/2006	2/14/2006	11:50	2/14/2006	11:50	74.1	SB1-0214	pH	PH	pH	7.24
4.00	EPAC	CHMC	F1187	J11145	J11145	N	SOIL	F118703	E350.3	METHOD	2/8/2006	11:30	2/10/2006	2/13/2006	13:33	2/13/2006	13:33	78.1	SB1-0213	7664-41-7	NH3N	Ammonia-I	2.42
4.00	EPAC	CHMC	F1187	J11145	J11145	N	SOIL	F118703	E351.4	METHOD	2/8/2006	11:30	2/10/2006	2/14/2006	10:36	2/14/2006	10:36	78.1	SB1-0214	7727-37-9	KN	Total Kjeld	382
4.00	EPAC	CHMC	F1187	J11145	J11145	N	SOIL	F118703	ASTM E-7	NONE	2/8/2006	11:30	2/10/2006			2/20/2006	11:42	78.1		TOC	TOC	Total Orga	1440
4.00	EPAC	CHMC	F1187	J11145	J11145	N	SOIL	F118703	E300.0A	METHOD	2/8/2006	11:30	2/10/2006	2/14/2006	13:47	2/14/2006	13:47	78.1	SB1-0214	16887-00-(	CL	Chloride	0.569
4.00	EPAC	CHMC	F1187	J11145	J11145	N	SOIL	F118703	E300.0A	METHOD	2/8/2006	11:30	2/10/2006	2/14/2006	13:47	2/14/2006	13:47	78.1	SB1-0214	16984-48-(	F	Fluoride	0.513
4.00	EPAC	CHMC	F1187	J11145	J11145	N	SOIL	F118703	E300.0A	METHOD	2/8/2006	11:30	2/10/2006	2/14/2006	13:47	2/14/2006	13:47	78.1	SB1-0214	14797-55-(	NO3N	Nitrate-N	1.3
4.00	EPAC	CHMC	F1187	J11145	J11145	N	SOIL	F118703	E300.0A	METHOD	2/8/2006	11:30	2/10/2006	2/14/2006	13:47	2/14/2006	13:47	78.1	SB1-0214	14797-65-(	NO2N	Nitrite-N	0.513
4.00	EPAC	CHMC	F1187	J11145	J11145	N	SOIL	F118703	E300.0A	METHOD	2/8/2006	11:30	2/10/2006	2/14/2006	13:47	2/14/2006	13:47	78.1	SB1-0214	14808-79-(	SO4	Sulfate	4.38
4.00	EPAC	CHMC	F1187	J11145	J11145	N	SOIL	F118703	ASTM D22	NONE	2/8/2006	11:30	2/10/2006			2/14/2006	9:50	78.1		MOISTURI	MOIST	Moisture	21.9
4.00	EPAC	CHMC	F1187	J11145	J11145	N	SOIL	F118703	SW9045C	METHOD	2/8/2006	11:30	2/10/2006	2/14/2006	11:52	2/14/2006	11:52	78.1	SB1-0214	pH	PH	pH	7.47
4.00	EPAC	CHMC	F1187	BS1S0213	BS1S0213	BS	SOIL	BS1S0213	E350.3	METHOD				2/13/2006	12:03	2/13/2006	12:03	100	SB1-0213	7664-41-7	NH3N	Ammonia-I	194
4.00	EPAC	CHMC	F1187	BS1S0214	BS1S0214	BS	SOIL	BS1S0214	E351.4	METHOD				2/14/2006	9:47	2/14/2006	9:47	100	SB1-0214	7727-37-9	KN	Total Kjeld	777
4.00	EPAC	CHMC	F1187	BS1S0214	BS1S0214	BS	SOIL	BS1S0214	E300.0A	METHOD				2/14/2006	11:58	2/14/2006	11:58	100	SB1-0214	16887-00-(	CL	Chloride	54.4
4.00	EPAC	CHMC	F1187	BS1S0214	BS1S0214	BS	SOIL	BS1S0214	E300.0A	METHOD				2/14/2006	11:58	2/14/2006	11:58	100	SB1-0214	16984-48-(	F	Fluoride	49.9
4.00	EPAC	CHMC	F1187	BS1S0214	BS1S0214	BS	SOIL	BS1S0214	E300.0A	METHOD				2/14/2006	11:58	2/14/2006	11:58	100	SB1-0214	14808-79-(	SO4	Sulfate	54.8
4.00	EPAC	CHMC	F1187	BS1S0214	BS1S0214	BS	SOIL	BS1S0214	SW9045C	METHOD				2/14/2006	11:46	2/14/2006	11:46	100	SB1-0214	pH	PH	pH	7.11
4.00	EPAC	CHMC	F1187	BS1S0220	BS1S0220	BS	SOIL	BS1S0220	ASTM E-7	NONE						2/20/2006	10:34	100		TOC	TOC	Total Orga	9270
4.00	EPAC	CHMC	F1187	BS2S0214	BS2S0214	BS	SOIL	BS2S0214	E300.0A	METHOD				2/14/2006	12:19	2/14/2006	12:19	100	SB1-0214	14797-65-(	NO2N	Nitrite-N	11.4
4.00	EPAC	CHMC	F1187	BS4S0214	BS4S0214	BS	SOIL	BS4S0214	E300.0A	METHOD				2/14/2006	12:39	2/14/2006	12:39	100	SB1-0214	14797-55-(	NO3N	Nitrate-N	77.1
4.00	EPAC	CHMC	F1187	SB1-0213	SB1-0213	LB	SOIL	SB1-0213	E350.3	METHOD				2/13/2006	12:20	2/13/2006	12:20	100	SB1-0213	7664-41-7	NH3N	Ammonia-I	1.08
4.00	EPAC	CHMC	F1187	SB1-0214	SB1-0214	LB	SOIL	SB1-0214	E351.4	METHOD				2/14/2006	9:59	2/14/2006	9:59	100	SB1-0214	7727-37-9	KN	Total Kjeld	46.1
4.00	EPAC	CHMC	F1187	SB1-0214	SB1-0214	LB	SOIL	SB1-0214	E300.0A	METHOD				2/14/2006	12:48	2/14/2006	12:48	100	SB1-0214	16887-00-(	CL	Chloride	1
4.00	EPAC	CHMC	F1187	SB1-0214	SB1-0214	LB	SOIL	SB1-0214	E300.0A	METHOD				2/14/2006	12:48	2/14/2006	12:48	100	SB1-0214	16984-48-(	F	Fluoride	1
4.00	EPAC	CHMC	F1187	SB1-0214	SB1-0214	LB	SOIL	SB1-0214	E300.0A	METHOD				2/14/2006	12:48	2/14/2006	12:48	100	SB1-0214	14797-55-(	NO3N	Nitrate-N	1
4.00	EPAC	CHMC	F1187	SB1-0214	SB1-0214	LB	SOIL	SB1-0214	E300.0A	METHOD				2/14/2006	12:48	2/14/2006	12:48	100	SB1-0214	14797-65-(	NO2N	Nitrite-N	1
4.00	EPAC	CHMC	F1187	SB1-0214	SB1-0214	LB	SOIL	SB1-0214	E300.0A	METHOD				2/14/2006	12:48	2/14/2006	12:48	100	SB1-0214	14808-79-(	SO4	Sulfate	0.44
4.00	EPAC	CHMC	F1187	SB1-0214	SB1-0214	LB	SOIL	SB1-0214	SW9045C	METHOD				2/14/2006	11:44	2/14/2006	11:44	100	SB1-0214	pH	PH	pH	6.14
4.00	EPAC	CHMC	F1187	SB1-0220	SB1-0220	LB	SOIL	SB1-0220	ASTM E-7	NONE						2/20/2006	10:43	100		TOC	TOC	Total Orga	100

ExpectedV	Units	Dilution	MDL	RL	LabQualifi	Surrogate	Comments	ParValUnc	Recovery	LowerCont	UpperCont	Basis	ConcQual	MDLAdjust	RLAdjuste	SampleDe	LeachMeth	LeachDate	LeachTime	LeachLot	AnalysisLo	CalRefID
	MG/KG	1	1.04	3.91	B	N						D	J	1.29	4.82	J11146	NONE				021306NH	020706NH3
	MG/KG	1	38.1	182		N						D	=	47.1	225	J11146	NONE				021406KN	021406TKN
	MG/KG	1	46.8	134		N						D	=	46.8	134	J11146	NONE				SB1-0220	101405S1
	MG/KG	1	0.0613	0.505		N						D	=	0.0757	0.623	J11146	NONE				021406Q1	300A-013006
	MG/KG	1	0.0548	0.505	U	N						D	U	0.0677	0.623	J11146	NONE				021406Q1	300A-013006
	MG/KG	1	0.0474	0.505		N						D	=	0.0585	0.623	J11146	NONE				021406Q1	300A-013006
	MG/KG	1	0.0453	0.505	U	N						D	U	0.056	0.623	J11146	NONE				021406Q1	300A-013006
	MG/KG	1	0.0814	0.505		N						D	=	0.101	0.623	J11146	NONE				021406Q1	300A-013006
	PERCENT	1	0	0		N						D	=	0	0	J11146	NONE				021406MC	NONE
	PH UNITS	1	0	0		N						D	=	0	0	J11146	NONE				021406PH	NONE
	MG/KG	1	1.07	4	B	N						D	J	1.44	5.4	J11144	NONE				021306NH	020706NH3
	MG/KG	1	41.2	196		N						D	=	55.6	265	J11144	NONE				021406KN	021406TKN
	MG/KG	1	39.7	114		N						D	=	39.7	114	J11144	NONE				SB1-0220	101405S1
	MG/KG	1	0.0669	0.551	B	N						D	J	0.0904	0.745	J11144	NONE				021406Q1	300A-013006
	MG/KG	1	0.0598	0.551	U	N						D	U	0.0808	0.745	J11144	NONE				021406Q1	300A-013006
	MG/KG	1	0.0517	0.551		N						D	=	0.0699	0.745	J11144	NONE				021406Q1	300A-013006
	MG/KG	1	0.0495	0.551	U	N						D	U	0.0669	0.745	J11144	NONE				021406Q1	300A-013006
	MG/KG	1	0.0889	0.551		N						D	=	0.12	0.745	J11144	NONE				021406Q1	300A-013006
	PERCENT	1	0	0		N						D	=	0	0	J11144	NONE				021406MC	NONE
	PH UNITS	1	0	0		N						D	=	0	0	J11144	NONE				021406PH	NONE
	MG/KG	1	1.07	4.02	B	N						D	J	1.38	5.15	J11145	NONE				021306NH	020706NH3
	MG/KG	1	37.4	179		N						D	=	48	229	J11145	NONE				021406KN	021406TKN
	MG/KG	1	35.8	102		N						D	=	35.8	102	J11145	NONE				SB1-0220	101405S1
	MG/KG	1	0.0486	0.4		N						D	=	0.0623	0.513	J11145	NONE				021406Q1	300A-013006
	MG/KG	1	0.0434	0.4	U	N						D	U	0.0557	0.513	J11145	NONE				021406Q1	300A-013006
	MG/KG	1	0.0376	0.4		N						D	=	0.0482	0.513	J11145	NONE				021406Q1	300A-013006
	MG/KG	1	0.0359	0.4	U	N						D	U	0.0461	0.513	J11145	NONE				021406Q1	300A-013006
	MG/KG	1	0.0645	0.4		N						D	=	0.0827	0.513	J11145	NONE				021406Q1	300A-013006
	PERCENT	1	0	0		N						D	=	0	0	J11145	NONE				021406MC	NONE
	PH UNITS	1	0	0		N						D	=	0	0	J11145	NONE				021406PH	NONE
200	MG/KG	1	0.534	2		N			97.2	80	120	D	=	0.534	2		NONE				021306NH	020706NH3
680	MG/KG	1	21	100		N			114	75	125	D	=	21	100		NONE				021406KN	021406TKN
50	MG/KG	1	0.121	1		N			109	70	130	D	=	0.121	1		NONE				021406Q1	300A-013006
50	MG/KG	1	0.109	1		N			99.7	70	130	D	=	0.109	1		NONE				021406Q1	300A-013006
50	MG/KG	1	0.161	1		N			110	70	130	D	=	0.161	1		NONE				021406Q1	300A-013006
7.15	PH UNITS	1	0	0		N			99.4	80	120	D	=	0	0		NONE				021406PH	NONE
8840	MG/KG	1	60.1	172		N			105	75	125	D	=	60.1	172		NONE				SB1-0220	101405S1
11.3	MG/KG	1	0.0898	1		N			101	70	130	D	=	0.0898	1		NONE				021406Q1	300A-013006
71.9	MG/KG	1	0.0939	1		N			107	70	130	D	=	0.0939	1		NONE				021406Q1	300A-013006
0	MG/KG	1	0.534	2	B	N						D	J	0.534	2		NONE				021306NH	020706NH3
0	MG/KG	1	21	100	B	N						D	J	21	100		NONE				021406KN	021406TKN
0	MG/KG	1	0.121	1	U	N						D	U	0.121	1		NONE				021406Q1	300A-013006
0	MG/KG	1	0.109	1	U	N						D	U	0.109	1		NONE				021406Q1	300A-013006
0	MG/KG	1	0.0939	1	U	N						D	U	0.0939	1		NONE				021406Q1	300A-013006
0	MG/KG	1	0.0898	1	U	N						D	U	0.0898	1		NONE				021406Q1	300A-013006
0	MG/KG	1	0.161	1	B	N						D	J	0.161	1		NONE				021406Q1	300A-013006
0	PH UNITS	1	0	0		N						D	=	0	0		NONE				021406PH	NONE
0	MG/KG	1	35	100	U	N						D	U	35	100		NONE				SB1-0220	101405S1

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APR 2006

BIOASSAY REPORT
CHRONIC SCREENING BIOASSAYS
Conducted March 3 through April 7, 2006

Prepared for

ELR CONSULTING, INC.
WASHINGTON CLOSURE HANFORD
RICHLAND, WASHINGTON

Prepared by

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April 13, 2006
Lab I.D. Nos. B1538-01 thru 37
SDG Number B1538

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INTRODUCTION

CH2M HILL conducted 28-day chronic screening bioassay tests using the amphipod (*Hyalella azteca*) on sediment samples provided by the ELR Consulting for Washington Closure Hanford, Richland, Washington. The tests were conducted in two batches from March 3 through 31, 2006, and March 10 through April 7, 2006.

METHODS AND MATERIALS

TEST METHODS

The amphipod tests were performed according to: *Standard Test Method for Measuring the Toxicity of Sediment-Associated Contaminants with Freshwater Invertebrates*, ASTM E1706-05; and *Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates – Second Edition* (2000); EPA/600/R-99/064.

TEST ORGANISMS

The amphipods used in the sediment tests were obtained from Chesapeake Cultures, Nayes, Virginia, and were 7 to 8 days old (approx 1.8 to 2.0 mm in length) at test initiation. All organisms tested were fed and maintained during culturing, acclimation, and testing as prescribed by ASTM and EPA. The test organisms appeared vigorous and in good condition prior to testing.

OVERLYING WATER

The water used for test organism acclimation and as overlying water during the static testing for the amphipods was reconstituted moderately hard water with a total hardness of 80 to 100 mg/L as $CaCO_3$ and an alkalinity of 60 to 74 mg/L as $CaCO_3$.

TEST CONCENTRATIONS

The concentration tested in the *Hyalella azteca* tests was 100 percent sample sediment with Beaver Creek sediment as laboratory control.

The control and test samples were randomly assigned to test chambers to avoid spatial (light, temperature, feeding, etc) and observational bias during testing.

SAMPLE COLLECTION

Individual sediment samples used during the testing were collected between February 5 and 27, 2006. The samples were stored in the dark at 4°C until the initiation of the initiation of the tests. Chain of Custody for sample collection is provided in Appendix C.

SAMPLE CROSS-REFERENCE TABLES

Tables 1 and 2 provide a cross-reference of the sample numbers, sampling dates, and sampling locations as listed on the chain of custody forms. Also included is the associated Amphipod test sample identification (SDG) numbers and Analytical Lab SDG numbers as assigned by CH2M HILL Applied Sciences Laboratory.

Table 1
Sample Cross-Reference
For Tests Initiated on March 3, 2006

Sample Number	Sample Date	Sampling Location	Amphipod Test SDG	Analytical Lab SDG
J11143	2/5/2006	REF #16	B1538-01	F1162-01
J11146	2/8/2006	U-2	B1538-02	F1187-01
J11144	2/8/2006	300-2	B1538-03	F1187-02
J11145	2/8/2006	U-1	B1538-04	F1187-03
J116N1	2/9/2006	REF 12, SEDIMENT	B1538-05	F1192-01
J116N3	2/9/2006	REF 13, SEDIMENT	B1538-06	F1192-02
J112B7	2/12/2006	Cr 5, SEDIMENT	B1538-07	F1192-03
J116N2	2/9/2006	REF 12, SEDIMENT	B1538-08	F1192-04
J116M4	2/12/2006	Cr 9, SEDIMENT	B1538-09	F1192-05
J116N0	2/9/2006	REF14, SEDIMENT	B1538-10	F1192-06
J11731	2/9/2006	REF11, SEDIMENT FULL QC	B1538-11	F1192-07
J116M5	2/12/2006	Cr10, SEDIMENT	B1538-12	F1192-08
J116M8	2/12/2006	Cr 6, SEDIMENT FULL QC	B1538-13	F1192-09
J11752	2/13/2006	U 5, SEDIMENT	B1538-14	F1207-01
J11745	2/13/2006	U 6, SEDIMENT	B1538-15	F1207-02
J11750	2/13/2006	U 8, SEDIMENT	B1538-16	F1207-03
J11751	2/13/2006	U 3, SEDIMENT	B1538-17	F1207-04
J11753	2/13/2006	U 7, SEDIMENT	B1538-18	F1207-05
J11746	2/19/2006	U 4, SEDIMENT	B1538-19	F1239-01
J11747	2/19/2006	U 9, SEDIMENT	B1538-20	F1239-02

Table 2 Sample Cross-Reference For Tests Initiated on March 10, 2006				
Sample Number	**Sample Date**	**Sampling Location**	**Amphipod test SDG**	**Analytical Lab SDG**
J11748	2/19/2006	U 10, SEDIMENT	B1538-21	F1239-03
J11749	2/19/2006	U , SEDIMENT 300-1	B1538-22	F1239-04
J112B3	2/21/2006	Cr 1, SEDIMENT	B1538-23	F1242-01
J112B4	2/21/2006	Cr 2, SEDIMENT	B1538-24	F1242-02
J112B5	2/21/2006	Cr 3, SEDIMENT	B1538-25	F1242-03
J112B6	2/21/2006	Cr 4, SEDIMENT	B1538-26	F1242-04
J116M6	2/21/2006	Cr 7, SEDIMENT	B1538-27	F1242-05
J116M7	2/21/2006	Cr 8, SEDIMENT	B1538-28	F1242-06
J11734	2/21/2006	, SEDIMENT Cr #8	B1538-29	F1242-07
J116X2	2/27/2006	Sr 3, SEDIMENT	B1538-30	F1280-01
J116W9	2/27/2006	Sr 1, SEDIMENT FULL QC	B1538-31	F1280-02
J116X0	2/27/2006	Sr 5, SEDIMENT	B1538-32	F1280-03
J116X1	2/27/2006	Sr 4, SEDIMENT	B1538-33	F1280-04
J116X3	2/27/2006	Sr 2, SEDIMENT	B1538-34	F1280-05
J116X6	2/27/2006	Sr 6, SEDIMENT	B1538-35	F1280-06
J116W7	2/27/2006	Sr 9, SEDIMENT	B1538-36	F1280-07
J116W8	2/27/2006	Sr 10, SEDIMENT	B1538-37	F1280-08

SAMPLE PREPARATION

For the *Hyalella azteca* sediment bioassays, 100 g of sediment was placed in a test chamber, 175 ml of overlying water was then added and allowed to stand overnight prior to adding test organisms. Once the test was initiated (i.e., when organisms were added), the overlying water was carefully renewed twice daily at approximately 12 hours apart.

MONITORING OF BIOASSAYS

The amphipod tests were monitored at initiation and termination for dissolved oxygen, pH, conductivity, total hardness, alkalinity, ammonia, and temperature. During the tests, dissolved oxygen and pH were monitored every 3 days, conductivity was measured every 7 days and temperature was monitored every 24 hours within the test chambers. In addition, temperature was monitored in the water bath continuously throughout the testing period. Survival was determined at test termination and growth was measured by dry weight analysis.

DATA ANALYSIS

The effects measured during the amphipod chronic test included survival and growth (determined by mean dry weight per surviving organism) over the 28-day exposure period. The statistical analyses performed were those outlined in *Standard Test Method for Measuring the Toxicity of Sediment-Associated Contaminants with Freshwater Invertebrates*, ASTM E1706-05; and *Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates – Second Edition* (2000); EPA/600/R-99/064, using CETIS version 1.1.2. Equal variance t Two-Sample Test was used to compare the survival and growth data between the control and each sample treatment. When the assumptions of normality or homogeneity of variance necessary for Equal Variance t Two-Sample Test could not be met, Unequal Variance t Two-Sample Test or Mann-Whitney U test was used to analyze the data. All statistics were analyzed at the $p = 0.05$ level.

RESULTS AND DISCUSSION

CHRONIC BIOASSAYS

Table 3 summarizes the results of the amphipod tests initiated on March 3, 2006. The following provides a summary of the sample-specific statistical comparisons with the laboratory control:

- The results for samples J112B7, J116M4, and J116M8 indicated a statistically significant reduction in both the survival and growth endpoints.
- The results for samples J11143 and J116N3 indicated a statistically significant reduction in the survival endpoint and no statistically significant difference in the growth endpoint.
- The results for all other samples indicated no statistically significant reduction in either the survival or growth endpoints; these include samples J11146, J11144, J11145, J116N1, J116N2, J116N0, J11731, J116M5, J11752, J11745, J11750, J11751, J11753, J11746, and J11747.

Table 3:
Hyallela azteca Chronic Test Results for Washington Closure Hanford Initiated on March 3, 2006

E, significantly different from lab control by use of Equal Variance t Two-Sample Test

ns indicates a non statisticaly significant result; [5], indicates significant at alpha (p) = 0.05;

--, indicates no statistical test performed.

Lab ID:	Sample Number:	*Hyallela azteca* Survival Endpoint Percent Survival	Statistically significant difference when compared to Lab Control?	*Hyallela azteca* Growth Endpoint Growth per surviving organism (mg)	Statistically significant difference when compared to Lab Control?
Tests initiated on March 3, 2006					
Laboratory Control		92	--	0.155	--
B1538-01	J11143	66	E [5]	0.169	ns
B1538-02	J11146	90	ns	0.271	ns
B1538-03	J11144	86	ns	0.173	ns
B1538-04	J11145	86	ns	0.263	ns
B1538-05	J116N1	72	ns	0.196	ns
B1538-06	J116N3	78	E [5]	0.177	ns
B1538-07	J112B7	62	E [5]	0.097	E [5]
B1538-08	J116N2	78	ns	0.160	ns
B1538-09	J116M4	38	E [5]	0.101	E [5]
B1538-10	J116N0	84	ns	0.199	ns
B1538-11	J11731	90	ns	0.203	ns
B1538-12	J116M5	66	ns	0.145	ns
B1538-13	J116M8	48	E [5]	0.092	E [5]
B1538-14	J11752	86	ns	0.242	ns
B1538-15	J11745	92	ns	0.202	ns
B1538-16	J11750	96	ns	0.266	ns
B1538-17	J11751	86	ns	0.272	ns
B1538-18	J11753	76	ns	0.198	ns
B1538-19	J11746	84	ns	0.249	ns
B1538-20	J11747	90	ns	0.237	ns

Table 4 summarizes the results of the amphipod test initiated on March 10, 2006. The following provides a summary of the sample-specific statistical comparisons with the laboratory control:

- The results for samples J11749, J112B3, J112B4, J112B6, J116M6, J116M7, J11734, and J116W9 indicated a statistically significant reduction in both the survival and growth endpoints.

- The results for samples J11478 and J116X6 indicated a statistically significant reduction in the survival endpoint and no statistically significant difference in the growth endpoint.

- The results for sample J112B5 indicated a statistically significant reduction in the survival endpoint. Analysis of the growth endpoint could not be calculated due to no surviving test organisms in sample J112B5.

- The results for sample J116X3 indicated a statistically significant reduction in the growth endpoint and no statistically significant difference in the survival endpoint.

- The results for all other samples indicated no statistically significant reduction in either the survival or growth endpoints; these include samples J116X2, J116X0, J116X1, J116W7, and J116W8.

Daily mean test temperatures remained at 23±1°C, and instantaneous temperatures remained at 23±3°C, for the tests. The dissolved oxygen levels in the tests remained above the ASTM recommended minimum 2.5 mg/L throughout the test period. The tests proceeded without interruption or incidents that could have affected test results.

Table 4:
Hyallela azteca Chronic Test Results for Washington Closure Hanford Initiated on March 10, 2006

E, significantly different from lab control by use of Equal Variance t Two-Sample Test

ns indicates a non statisticaly significant result; [5], indicates significant at alpha (p) = 0.05;

--, indicates no statistical test performed. NA = data not available.

Lab ID:	Sample Number:	*Hyallela azteca* Survival Endpoint Percent Survival	Statistically significant difference when compared to Lab Control?	*Hyallela azteca* Growth Endpoint Growth per surviving organism (mg)	Statistically significant difference when compared to Lab Control?
Tests initiated on March 3, 2006					
Laboratory Control		96	--	0.182	--
B1538-21	J11478	2	E [5]	0.160	ns
B1538-22	J11749	62	E [5]	0.121	E [5]
B1538-23	J112B3	66	E [5]	0.113	E [5]
B1538-24	J112B4	52	E [5]	0.112	E [5]
B1538-25	J112B5	0	E [5]	NA	--
B1538-26	J112B6	12	E [5]	0.091	E [5]
B1538-27	J116M6	4	E [5]	0.085	E [5]
B1538-28	J116M7	4	E [5]	0.070	E [5]
B1538-29	J11734	14	E [5]	0.097	E [5]
B1538-30	J116X2	88	ns	0.207	ns
B1538-31	J116W9	16	E [5]	0.091	E [5]
B1538-32	J116X0	100	ns	0.251	ns
B1538-33	J116X1	94	ns	0.198	ns
B1538-34	J116X3	84	ns	0.130	E [5]
B1538-35	J116X6	76	E [5]	0.196	ns
B1538-36	J116W7	94	ns	0.250	ns
B1538-37	J116W8	98	ns	0.229	ns

B1538-25 growth data is not available due to no surviving test organisms.

REFERENCE TOXICANT TESTS

The data sheets for the reference toxicant tests are provided in Appendix B. The LC_{50} values, and Control Chart Limits are listed in Table 6 below. The test results indicate that the test organisms were within their respective sensitivity range based on EPA guidelines.

Table 6
Reference Toxicant Tests
(Cadmium µg/L)

Species	LC_{50}	Control Chart
Hyallela azteca (Amp 56)	3.62	3.58 to 8.52
Hyallela azteca (Amp 57)	4.84	3.46 to 8.34

CERTIFICATION STATEMENT

I certify that this data package is in compliance with the Statement of Work, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature:

APPENDIX A
RAW DATA SHEETS

CH2M HILL *TOXICITY TEST ORGANISM AND WATER QUALITY DATA* 3-~~15~~ 10 MS-06 4-7-06

Client: EIR Consulting — Test Initiation: Date 3-3-06 Time 1300 — Test Termination: Date 3-31-06 Time —

Contact: Emmett Richards 509-531-8774 — Technician: Winn, Stanaway, Johnson, Pittenger, Oldham, Mucky

Test Species/ID: Hyalella azteca / AMP 56 — /

Hyalella azteca / AMP 57 — /

Sample ID Number	Field ID	Collected Date	Collected Time	Total Residual Chlorine (mg/l) As Received	Total Residual Chlorine (mg/l) As Dechlor.	Ammonia NH_3-N mg/l	Hardness mg/l as $CaCO_3$	Alkalinity mg/l as $CaCO_3$
B1538	1-20 see report & COC			/		See excel sheet		
				/				
				/				
				/				
				/				
				/				
				/				
				/				
				/				
				/				
				/				
				/				
				/				

Test Species Information	ID# 56 Hyal AMP	ID# AMP 57	ID#	ID#
Age or Size	8 days	7 days		
	—	—		
Test Container Size	300	300		
Test Volume	100 g sediment	100 g sediment		
Feeding: Type	YCT 1 ml	YCT 1 ml		
Amount	per beaker daily	per beaker daily		
Aeration: Began	None	None		
Amount	—	—		
Dilution Water ID#	See below	See below		
Acclimation Period	3 days	3 days		
Test Location	#12	#12		
Condition of Survivors				
Size (mm)				
Loading Rate				
Comments				

Dilution Water Source	ID#	Hardness mg/l as $CaCO_3$	Alkalinity mg/l as $CaCO_3$
Reson MH	2609	96	66
Reson MH	2613	92	64
Reson MH	2621	86	64
Reson MH	2624	100	74
Reson MH	2625	90	70

Water Quality Meters Used/ID#

Dissolved Oxygen #2 pH 3 Temperature _____

Conductivity #1 Refractometer _____ Other _____

2-1

RANDOMIZATION SHEET

Client: W C Hanford **Test Start Date:** 3/1/2006

Laboratory ID:	Field ID:	Alternate ID:	Replicate ID:	Random Number	Test Chamber Number:
B1538-01	J11143	0	A	0.59517	45
B1538-01	J11143	0	B	0.07342	99
B1538-01	J11143	0	C	0.51139	51
B1538-01	J11143	0	D	0.13711	96
B1538-01	J11143	0	E	0.32982	76
B1538-02	J11146	0	A	0.58658	46
B1538-02	J11146	0	B	0.90818	9
B1538-02	J11146	0	C	0.65346	38
B1538-02	J11146	0	D	0.01570	105
B1538-02	J11146	0	E	0.31954	77
B1538-03	J11144	0	A	0.55917	48
B1538-03	J11144	0	B	0.44848	59
B1538-03	J11144	0	C	0.88181	14
B1538-03	J11144	0	D	0.85967	17
B1538-03	J11144	0	E	0.81671	23
B1538-04	J11145	0	A	0.99693	1
B1538-04	J11145	0	B	0.63858	40
B1538-04	J11145	0	C	0.95563	5
B1538-04	J11145	0	D	0.88305	13
B1538-04	J11145	0	E	0.31226	79
B1538-05	J116N1	0	A	0.85822	18
B1538-05	J116N1	0	B	0.51396	50
B1538-05	J116N1	0	C	0.76313	25
B1538-05	J116N1	0	D	0.35551	74
B1538-05	J116N1	0	E	0.63483	43
B1538-06	J116N3	0	A	0.13711	95
B1538-06	J116N3	0	B	0.46725	55
B1538-06	J116N3	0	C	0.75748	28
B1538-06	J116N3	0	D	0.75796	27
B1538-06	J116N3	0	E	0.14568	94
B1538-07	J112B7	0	A	0.38717	68
B1538-07	J112B7	0	B	0.91374	8
B1538-07	J112B7	0	C	0.78765	24
B1538-07	J112B7	0	D	0.98043	2
B1538-07	J112B7	0	E	0.82094	22
B1538-08	J116N2	0	A	0.70786	32
B1538-08	J116N2	0	B	0.88896	11
B1538-08	J116N2	0	C	0.46170	57
B1538-08	J116N2	0	D	0.08572	98
B1538-08	J116N2	0	E	0.87271	16
B1538-09	J116M4	0	A	0.85071	19
B1538-09	J116M4	0	B	0.29516	80
B1538-09	J116M4	0	C	0.23894	83
B1538-09	J116M4	0	D	0.97384	3
B1538-09	J116M4	0	E	0.31884	78
B1538-10	J116N0	0	A	0.83173	21
B1538-10	J116N0	0	B	0.16391	93
B1538-10	J116N0	0	C	0.39139	66
B1538-10	J116N0	0	D	0.43219	61
B1538-10	J116N0	0	E	0.06775	100
B1538-11	J11731	0	A	0.04141	104
B1538-11	J11731	0	B	0.63606	42
B1538-11	J11731	0	C	0.88833	12
B1538-11	J11731	0	D	0.49000	53
B1538-11	J11731	0	E	0.69702	34
B1538-12	J116M5	0	A	0.57522	47
B1538-12	J116M5	0	B	0.76259	26

RANDOMIZATION SHEET

Client: W C Hanford **Test Start Date:** 3/1/2006

Laboratory ID:	Field ID:	Alternate ID:	Replicate ID:	Random Number	Test Chamber Number:
B1538-12	J116M5	0	C	0.05297	103
B1538-12	J116M5	0	D	0.23174	86
B1538-12	J116M5	0	E	0.37224	70
B1538-13	J116M8	0	A	0.37187	71
B1538-13	J116M8	0	B	0.37854	69
B1538-13	J116M8	0	C	0.50121	52
B1538-13	J116M8	0	D	0.05955	102
B1538-13	J116M8	0	E	0.46613	56
B1538-14	J11752	0	A	0.71792	30
B1538-14	J11752	0	B	0.48443	54
B1538-14	J11752	0	C	0.18583	91
B1538-14	J11752	0	D	0.23383	85
B1538-14	J11752	0	E	0.90229	10
B1538-15	J11745	0	A	0.65921	37
B1538-15	J11745	0	B	0.93699	6
B1538-15	J11745	0	C	0.43748	60
B1538-15	J11745	0	D	0.38907	67
B1538-15	J11745	0	E	0.69843	33
B1538-16	J11750	0	A	0.45782	58
B1538-16	J11750	0	B	0.63614	41
B1538-16	J11750	0	C	0.67886	38
B1538-16	J11750	0	D	0.64743	39
B1538-16	J11750	0	E	0.84468	20
B1538-17	J11751	0	A	0.72372	29
B1538-17	J11751	0	B	0.41433	63
B1538-17	J11751	0	C	0.27614	82
B1538-17	J11751	0	D	0.96295	4
B1538-17	J11751	0	E	0.18896	90
B1538-18	J11753	0	A	0.20599	89
B1538-18	J11753	0	B	0.18353	92
B1538-18	J11753	0	C	0.37159	72
B1538-18	J11753	0	D	0.22469	87
B1538-18	J11753	0	E	0.91536	7
B1538-19	J11746	0	A	0.34461	75
B1538-19	J11746	0	B	0.41564	62
B1538-19	J11746	0	C	0.12147	97
B1538-19	J11746	0	D	0.70805	31
B1538-19	J11746	0	E	0.40302	65
B1538-20	J11747	0	A	0.23435	84
B1538-20	J11747	0	B	0.40688	64
B1538-20	J11747	0	C	0.28696	81
B1538-20	J11747	0	D	0.87729	15
B1538-20	J11747	0	E	0.53578	49
Sediment Control	Beaver Creek	Control	A	0.68453	35
Sediment Control	Beaver Creek	Control	B	0.20917	88
Sediment Control	Beaver Creek	Control	C	0.63142	44
Sediment Control	Beaver Creek	Control	D	0.08008	101
Sediment Control	Beaver Creek	Control	E	0.37151	73

TITRATION AND AMMONIA DATA

Client: Washington Closure Hanford

Species ID#: AMP 56

Sample Description: See Randomization Sheet.

Start Date: March 3, 2006

Laboratory ID	Hardness (mg/L as $CaCO_3$)		Alkalinity (mg/L as $CaCO_3$)		Ammonia (mg/L as NH_3-N)	
	Initial	Final	Initial	Final	Initial	Final
Sediment Control	98	98	84	74	0.35	0.05
B1538-01	156	104	80	74	0.51	0.06
B1538-02	130	160	82	124	0.27	0.31
B1538-03	102	100	78	70	0.34	0.09
B1538-04	112	106	92	70	0.30	0.06
B1538-05	128	110	88	70	0.26	0.10
B1538-06	118	104	92	76	0.29	0.14
B1538-07	124	106	82	72	0.23	0.03
B1538-08	116	156	84	116	0.22	0.10
B1538-09	130	104	80	70	0.23	0.06
B1538-10	128	104	112	76	0.21	0.08
B1538-11	118	102	86	74	0.33	0.04
B1538-12	122	102	86	72	0.26	0.05
B1538-13	126	112	80	70	0.27	0.05
B1538-14	122	100	82	76	0.30	0.09
B1538-15	116	104	88	74	0.30	0.07
B1538-16	116	106	82	76	0.24	0.08
B1538-17	118	102	84	74	0.20	0.00
B1538-18	106	108	86	72	0.26	0.09
B1538-19	116	104	80	84	0.24	0.07
B1538-20	118	110	88	78	0.25	0.07

Client: Washington Closure, Hanford

Sample Description: See Cross Reference Sheet batch Number B 1538 1-20

Test Species: Hyalella azteca

ID#: Amp 56

Beginning, Date: 3-3-06 Time: 1300

Ending, Date: 3-31-06 Time: 0700

AM change: Tech.	Day 0 MS	Day 1 0715	Day 2 0715	Day 3 MS	Day 4 MS	Day 5 DW	Day 6 DW	Day 7 DW	Day 8 [illegible]	Day 9 [illegible]
Time	Day 0 0700	Day 1 NJ	Day 2 NJ	Day 3 0720	Day 4 0720	Day 5 0700	Day 6 0700	Day 7 0700	Day 8 0700	Day 9 0705
PM change: Tech.	Day 0 DW/RM	Day 1 TP	Day 2 TP	Day 3 [illegible]	Day 4 DW	Day 5 [illegible]	Day 6 MS	Day 7 [illegible]	Day 8 TP	Day 9 TP
Time	Day 0 1700	Day 1 1930	Day 2 1815	Day 3 1720	Day 4 1700	Day 5 1930	Day 6 1645	Day 7 1745	Day 8 1300	Day 9 ~~1678~~ 1640
Feeding: ✓ when done	Day 0 ✓	Day 1 ✓	Day 2 ✓	Day 3 ✓	Day 4 ✓	Day 5 ✓	Day 6 ✓	Day 7 ✓	Day 8 ✓	Day 9 ✓

Beaker Number	Dissolved Oxygen (mg/l)										Temperature (°C)										pH				Conductivity (µmohs/cm)	
	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	3	6	9	0	7
1	7.5			5.3			7.7			7.4	23.4	21.7	22.8	23.3	23.1	22.6	22.0	21.8	21.6	21.4	7.4	7.2	7.1	7.0	312	300
18	8.1			6.5			7.6			7.4	23.5	22.0	22.7	23.4	22.9	22.4	21.9	22.1	21.9	21.6	7.7	7.6	7.3	7.1	311	312
19	8.3			6.4			7.7			7.6	23.5	22.0	23.0	23.4	22.9	22.7	21.8	22.0	21.8	20.6	7.8	7.7	7.4	7.0	306	310
21	7.9			6.7			7.7			7.9	23.6	22.1	23.0	23.4	22.7	22.6	22.1	21.9	22.0	21.9	7.6	7.6	7.4	7.1	315	318
29	7.9			6.5			7.7			7.9	23.5	22.0	23.0	23.4	22.8	23.0	21.8	22.1	22.4	21.7	7.7	7.5	7.3	7.0	316	318
30	7.8			6.7			7.5			7.6	23.4	22.0	23.0	23.4	22.9	22.7	21.9	22.3	22.2	22.0	7.7	7.4	7.3	6.9	327	318
32	8.0			6.8			7.6			7.1	23.6	22.1	23.0	23.4	22.7	22.6	22.0	21.7	22.0	21.8	7.8	7.5	7.4	7.0	316	313
35	8.0			6.8			7.3			6.9	23.6	22.1	23.1	23.5	22.9	22.6	21.8	21.9	21.6	21.6	7.6	7.5	7.4	7.4	380	328
37	7.8			6.7			7.5			6.7	23.5	22.2	23.0	23.4	22.8	22.9	22.2	22.3	21.9	21.4	7.6	7.4	7.1	7.2	327	320
45	7.5			6.3			7.1			6.6	23.6	22.1	23.1	23.5	22.9	23.1	21.9	22.0	22.2	21.4	7.5	7.4	7.2	7.2	316	312
46	8.0			6.8			7.4			7.4	23.5	22.0	23	23.4	22.7	22.5	21.8	22.0	21.0	22.0	7.7	7.4	7.2	7.2	323	322
47	8.1			6.9			7.3			7.2	23.7	22.3	23.0	23.6	23.2	22.8	22.0	22.0	21.6	22.0	7.7	7.5	7.4	7.3	311	314
48	8.0			6.7			7.3			7.6	23.8	22.2	23.0	23.6	23.3	22.6	22.1	21.9	21.6	22.1	7.6	7.5	7.3	7.3	308	312
58	7.8			6.3			7.2			7.1	23.8	22.2	23.0	23.5	23.0	22.4	22.2	22.2	22.4	21.7	7.6	7.4	7.3	7.4	334	322
68	8.2			6.8			7.3			6.9	23.7	22.1	23.1	23.3	23.3	22.5	22.1	21.8	21.9	21.7	7.7	7.5	7.4	7.3	309	310
71	8.0			6.7			7.1			7.0	24.0	22.1	23.2	23.4	23.4	22.9	21.9	22.0	21.6	21.6	7.7	7.6	7.3	7.1	322	312
75	7.8			6.5			7.0			6.6	23.9	22.0	23.1	23.5	23.2	22.8	22.0	22.1	22.4	22.0	7.3	7.3	7.2	7.1	333	332
84	7.8			6.3			7.1			6.4	23.8	22.2	23.4	23.5	23.4	22.5	22.2	22.3	21.4	21.5	7.5	7.4	7.2	7.0	320	319
89	7.8			6.5			7.2			6.6	23.6	22.1	23.4	23.4	23.4	22.6	22.1	22.1	21.0	21.5	7.7	7.5	7.3	6.9	316	316
95	7.9			6.5			7.3			6.9	23.7	22.1	23.3	23.6	23.5	22.9	22.3	22.0	21.0	21.5	7.6	7.5	7.3	6.9	320	324
104	8.0			6.9			7.2			7.0	23.8	22.0	23.3	23.4	23.5	23.2	22.0	21.9	21.5	21.4	7.8	7.6	7.4	7.0	326	315

* 079 test chamber has living "clam"

[illegible] SEDIMENT WATER COLUMN TEST SURVIVAL AND WATER QUALITY DATA

Client: [illegible]

Sample Description: See Cross Reference Sheet batch Number B

Test Species: Hyallela azteca

ID#: Amp 56

Beginning, Date: 3-3-06 Time: 1300

Ending, Date: 3-31-06 Time: 0700 to

AM change:	Tech.	Day 10	MS	Day 11	MS	Day 12	DW	Day 13	DW	Day 14	DW	Day 15	[illegible]	Day 16	[illegible]	Day 17	MS	Day 18	DW	Day 19	DW
	Time	Day 10	0640	Day 11	0630	Day 12	0700	Day 13	0655	Day 14	0645	Day 15	0700	Day 16	0650	Day 17	0640	Day 18	0710	Day 19	0700
PM change:	Tech.	Day 10	NJ	Day 11	[illegible]	Day 12	[illegible]	Day 13	[illegible]	Day 14	[illegible]	Day 15	[illegible]	Day 16	[illegible]	Day 17	MS	Day 18	[illegible]	Day 19	[illegible]
	Time	Day 10	1650	Day 11	1750	Day 12	1745	Day 13	1710	Day 14	1730	Day 15	1840	Day 16	1745	Day 17	1640	Day 18	1700	Day 19	1650
Feeding: ✓ when done		Day 10	✓	Day 11	✓	Day 12	✓	Day 13	✓	Day 14	✓	Day 15	✓	Day 16	✓	Day 17	✓	Day 18	✓	Day 19	✓

Beaker Number	Dissolved Oxygen (mg/l)										Temperature (°C)										pH			Conductivity (µmohs/cm)
	10	11	12	13	14	15	16	17	18	19	10	11	12	13	14	15	16	17	18	19	12	15	18	14
1			8.3			7.8			7.9		23.2	24.1	22.7	23.5	22.8	22.1	22.0	22.1	22.6	23.3	7.2	7.2	7.3	287
18			8.1			7.7			7.8		23.2	23.9	22.5	23.3	22.6	22.3	22.4	22.3	22.5	23.5	7.2	7.1	7.2	284
19			8.2			7.7			7.9		23.1	23.9	22.5	23.8	22.5	22.7	22.6	22.4	22.8	23.6	7.2	7.0	7.2	284
21			8.2			7.6			7.6		23.3	23.8	22.4	23.4	22.8	22.4	22.1	22.1	22.7	23.5	7.2	7.0	7.2	290
29			8.2			7.7			7.8		23.2	23.9	22.5	23.3	23.0	22.7	22.6	22.0	22.6	23.7	7.2	7.0	7.2	292
30			8.3			7.4			7.7		23.4	23.8	22.7	23.3	22.9	23.2	22.6	22.5	22.9	23.6	7.2	7.0	7.2	290
32			8.2			7.6			7.6		23.5	23.9	22.5	23.1	22.9	22.8	22.6	22.6	22.7	24.0	7.2	7.1	7.2	286
35			8.3			7.9			7.7		23.7	24.1	22.6	23.6	22.8	23.0	23.0	22.6	22.8	23.7	7.4	7.2	7.3	285
37			8.1			7.9			7.6		23.8	24.1	22.5	23.3	22.6	22.7	22.7	22.6	23.1	23.4	7.2	7.1	7.1	290
45			8.2			8.0			7.5		23.8	23.9	22.5	23.5	22.9	23.3	23.1	23.2	22.8	23.6	7.2	7.0	7.1	284
46			8.1			8.0			7.5		23.8	24.1	22.3	23.9	23.1	23.1	22.9	22.9	23.0	24.1	7.2	7.0	7.1	290
47			8.3			7.9			7.5		23.7	24.2	22.6	23.6	22.8	23.1	22.9	22.7	23.1	24.0	7.3	7.1	7.2	285
48			8.2			7.9			7.6		23.8	24.1	22.5	23.8	23.1	23.2	22.9	23.1	22.9	23.7	7.3	7.1	7.2	284
58			8.2			7.9			7.6		23.9	24.1	22.6	24.0	23.2	23.1	23.0	23.0	23.4	23.9	7.2	7.0	7.2	289
68			8.1			7.8			7.5		23.8	24.3	22.7	23.7	23.1	23.2	23.1	23.1	23.2	24.2	7.3	7.1	7.2	285
71			8.1			7.8			7.6		23.7	24.2	22.6	23.5	22.9	23.4	23.1	23.0	22.9	24.3	7.3	7.1	7.2	282
75			8.0			7.9			7.4		23.9	24.0	22.5	23.9	23.3	23.2	23.2	23.2	23.5	24.0	7.2	7.0	7.2	310
84			8.2			8.1			7.4		23.9	24.2	22.7	23.7	23.4	23.1	23.6	23.1	23.2	23.9	7.2	7.1	7.2	293
89			8.2			8.0			7.4		23.9	24.3	22.6	24.1	23.2	23.4	23.7	23.5	23.2	24.2	7.2	7.1	7.2	287
95			8.0			8.0			7.5		24.0	24.3	22.4	23.8	23.0	23.6	23.4	23.3	23.4	24.0	7.2	7.1	7.2	295
104			8.0			8.0			7.4		24.1	24.4	22.5	24.0	23.4	23.2	23.3	23.4	23.6	24.4	7.3	7.2	7.2	286

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client _____ Beginning, Date 3-3-06 Time 1300

Sample Description See Cross Reference Sheet batch Number B Ending, Date 3-31-06 Time 0700 to

Test Species: Hyallela azteca

AM change: Tech. Day 20 MS Day 21 MS/DW Day 22 DW Day 23 DW Day 24 MS Day 25 MS/DW Day 26 DW Day 27 MS Day 28 MS/

Time Day 20 0700 Day 21 0700 Day 22 0700 Day 23 0700 Day 24 0700 Day 25 0700 Day 26 0700 Day 27 0700 Day 28 0640

ID#: Amp 56

PM change: Tech. Day 20 DW Day 21 [illegible] Day 22 DW Day 23 DW Day 24 NJ Day 25 [illegible] Day 26 NJ Day 27 [illegible]

Time Day 20 1655 Day 21 1725 Day 22 1715 Day 23 1730 Day 24 1640 Day 25 1700 Day 26 1640 Day 27 1715

Feeding: ✓ when done Day 20 ✓ Day 21 ✓ Day 22 ✓ Day 23 ✓ Day 24 ✓ Day 25 ✓ Day 26 ✓ Day 27 ✓

Beaker Number	Dissolved Oxygen (mg/l)										Temperature (°C)										pH				Conductivity (µmohs/cm)	
	20	21	22	23	24	25	26	27	28		20	21	22	23	24	25	26	27	28		21	24	26	28	21	28
1		6.7			7.7		7.8		6.0		23.4	22.9	23.0	23.4	23.2	23.5	23.1	23.2	23.3		7.3	7.4	7.2	7.2	313	330
18		6.6			7.5		7.7		6.6		23.5	23.1	23.1	23.2	23.3	23.3	23.4	23.5	23.4		7.3	7.5	7.3	7.3	320	340
19		6.4			7.3		7.6		6.6		23.6	23.3	23.1	22.9	23.3	23.6	23.5	23.7	23.4		7.3	7.5	7.2	7.3	318	330
21		6.3			7.4		7.5		6.9		23.7	23.1	23.1	22.6	23.4	23.4	23.4	23.5	23.4		7.3	7.4	7.2	7.4	327	350
29		6.5			7.5		7.6		6.7		23.7	23.2	22.7	22.8	23.2	23.4	23.6	23.5	23.2		7.3	7.4	7.2	7.2	333	351
30		6.3			7.0		7.1		6.4		23.8	23.4	22.9	22.8	23.1	23.5	23.6	23.5	23.3		7.2	7.3	7.2	7.0	328	350
32		6.4			7.4		7.8		6.4		23.9	23.7	23.4	23.1	23.3	23.5	23.6	23.6	23.4		7.2	7.4	7.3	7.0	324	348
35		6.2			7.5		7.5		6.7		24.2	23.6	23.4	23.0	23.2	23.3	23.8	23.7	23.3		7.2	7.4	7.2	7.0	324	346
37		6.3			7.6		7.6		6.7		24.3	23.5	23.7	22.8	23.3	23.7	23.5	23.5	23.3		7.2	7.4	7.1	6.9	327	349
45		6.0			7.5		7.6		6.7		24.2	23.6	22.9	22.8	23.4	23.7	23.7	23.7	23.3		7.1	7.5	7.2	6.9	320	345
46		5.9			7.4		7.5		6.3		24.0	23.7	23.0	23.1	23.7	23.8	23.8	23.9	23.6		7.1	7.5	7.2	7.0	304	317
47		6.2			7.3		7.6		6.8		24.1	23.6	23.1	23.0	23.6	23.8	23.7	23.7	23.5		7.2	7.6	7.3	7.0	320	345
48		6.3			7.2		7.6		6.7		24.3	23.5	23.0	23.0	23.5	23.8	23.7	23.7	23.3		7.2	7.6	7.2	7.1	302	346
58		6.4			7.3		7.4		6.5		24.4	23.7	22.7	23.4	23.5	23.9	23.6	23.6	23.4		7.2	7.5	7.2	7.1	329	317
68		6.3			7.2		7.3		6.7		24.6	23.5	22.9	23.3	23.7	24.0	23.8	23.6	23.6		7.2	7.5	7.3	7.0	322	344
71		6.0			7.3		7.5		6.0		24.4	23.6	23.4	23.4	23.6	24.0	24.0	24.1	23.7		7.2	7.5	7.3	7.3	297	350
75		6.2			7.1		7.4		6.3		24.1	23.7	23.1	23.2	23.5	24.0	23.9	23.9	23.9		7.2	7.6	7.2	7.0	355	353
84		6.1			7.0		7.4		6.4		24.2	23.7	23.1	23.0	23.5	23.9	24.0	23.9	23.8		7.1	7.6	7.2	7.1	335	346
89		6.2			7.2		7.4		6.5		24.3	23.7	23.2	23.1	23.5	23.9	24.0	23.9	23.7		7.2	7.6	7.3	7.2	325	340
1 ~~95~~ 99		6.3			7.3		7.4		6.4		24.1	23.6	22.8	23.1	23.6	23.7	23.9	23.9	23.6		7.2	7.5	7.2	7.0	339	346
104		6.3			7.5		7.5		6.4		24.4	23.9	22.9	23.1	23.7	23.9	24.0	23.9	23.9		7.2	7.6	7.2	7.2	324	344

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client _____ Beginning, Date 3-3-06 Time 1300

Sample Description see randomization sheet. Batch number: B 1538 1-20 Ending, Date 3-31-06 Time 1030

Test Species: Hyallela azteca ID#: AMP 56

Test Initiation: Tech: Tech: Bmlow Time: 1300 Test Termination: Tech: Tech: 3-31-06 Time: 1030

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
1	10	10	0	
2	10	10	0	
3	10	0	0	
4	10	10	0	
5	10	10	0	
6	10	10	0	
7	10	9	0	
8	10	7	0	
9	10	10	0	
10	10	10	0	
11	10	10	0	
12	10	8	0	
13	10	9	0	
14	10	9	0	
15	10	10	0	

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
16	10	8	0	
17	10	10	0	
18	10	6	0	
19	10	7	1	
20	10	10	0	
21	10	10	0	
22	10	5	2	
23	10	9	0	
24	10	5	0	
25	10	8	0	
26	10	10	0	
27	10	8	0	
28	10	10	0	
29	10	10	0	
30	10	6	0	

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client _____ Beginning, Date 3-3-06 Time 1300

Sample Description see randomization sheet. Batch number: B ~~58~~ 1538 1-20 Ending, Date 3-31-06 Time 1200

Test Species: Hyallela azteca ID#: AMP 56

Test Initiation: Tech: Tech: BM/DW Time: 1300 Test Termination: Tech: Tech: BM Time: RCD

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
31	10	10	0	
32	10	8	0	
33	10	8	0	
34	10	10	0	
35	10	10	0	
36	10	10	0	
37	10	9	0	
38	10	9	0	
39	10	10	0	
40	10	6	0	
41	10	9	0	
42	10	9	0	
43	10	8	0	
44	10	9	0	
45	10	7	0	

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
46	10	8	1	
47	10	7	0	
48	10	9	0	
49	10	10	0	
50	10	4	0	
51	10	9	0	
52	10	8	1	
53	10	BM ~~9~~ 10	0	
54	10	8	0	
55	10	7	0	"worms" present
56	10	4	0	
57	10	7	0	
58	10	9	0	
59	10	6	0	
60	10	10	0	

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client

Sample Description see randomization sheet. Batch number: B 1538- 1-20

Test Species: Hyallela azteca ID#: AMP 66

Beginning, Date 3-3-06 Time 1300

Ending, Date 3-31-06 Time 1200

Test Initiation: Tech: Tech: BW/DW Time: 1300

Test Termination: Tech: Tech: BW/DW/MS Time: 1200

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
61	10	10	0	
62	10	7	0	
63	10	6	0	
64	10	9	0	
65	10	9	0	
66	10	4	0	
67	10	9	0	
68	10	4	0	
69	10	7	0	
70	10	1	0	
71	10	3	2	
72	10	10	0	
73	10	8	0	
74	10	10	0	
75	10	10	0	

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
76	10	9	0	
77	10	10	0	
78	10	3	0	all look poor
79	10	8	0	
80	10	6	0	
81	10	10	0	
82	10	9	0	
83	10	3	0	3 look poor
84	10	6	0	
85	10	10	0	
86	10	9	0	
87	10	9	0	
88	10	9	0	
89	10	6	0	
90	10	8	0	

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client _____

Sample Description see randomization sheet. Batch number: B 1538

Test Species: Hyallela azteca ID#: AMP 56

Beginning, Date 3-3-06 Time 1300

Ending, Date 3-31-06 Time 0700

Test Initiation: Tech: Tech: BMOW Time: 1300

Test Termination: Tech: Tech: MS Time: 0700

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
91	10	9	0	
92	10	4	0	Mayfly larvae found
93	10	10	0	
94	10	7	0	
95	10	7	0	
96	10	6	0	
97	10	6	0	
98	10	6	1	
99	10	2	0	lots of Lumbriculus worms in sample
100	10	8	0	
101	10	10	0	
102	10	2	1	Alive ones look poor
103	10	6	0	
104	10	8	0	
105	10	8	0	

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:

103 ~~Caddis~~ Mayfly larvae

Hyallela GROWTH DATA

Client Hanford Species ID# AMP 56

Lab ID: see randomization sheet batch number: B1538 Start Date 3/3/2006

Sample Description:

Technician: BM dw

Date: 4/3/2006 1/17/2006

Tin ID Number	Total Weight (mg) (after 60°C for 24 hr)	Tare Weight (mg) (after 60°C for 24 hr)	No. of Amphipods Surviving	No. of Amphipods in Tin
1	9.91	6.77	10	10
2	8.23	6.82	10	10
3		6.82	0	0
4	9.10	6.73	10	10
5	9.43	6.75	10	10
6	9.50	6.79	10	10
7	8.49	6.74	9	9
8	7.41	6.73	7	7
9	9.92	6.75	10	10
10	9.52	6.78	10	10
11	7.42	5.86	10	10
12	8.34	6.79	8	8
13	9.06	6.83	9	9
14	8.56	6.88	9	9
15	8.81	6.66	10	10
16	8.12	6.82	8	8
17	8.31	6.75	10	10
18	7.83	6.69	6	6
19	5.98	5.41	7	7
20	9.41	6.84	10	10
21	8.71	6.80	10	10
22	7.09	6.84	5	5
23	8.56	6.87	9	9
24	6.91	6.42	5	5
25	8.08	6.66	8	8
26	8.20	6.83	10	10
27	8.71	6.71	8	8
28	8.08	6.81	10	10
29	9.69	6.78	10	10
30	8.43	6.67	6	6

weigh to 0.01 mg

Hyallela GROWTH DATA

Client: Hanford Species ID#: AMP 56

Lab ID: see randomization sheet batch number: B1538 Start Date: 3/3/2006

Sample Description:

Technician: BM dw

Date: 4/3/2006 1/17/2006

Tin ID Number	Total Weight (mg) (after 60°C for 24 hr)	Tare Weight (mg) (after 60°C for 24 hr)	No. of Amphipods Surviving	No. of Amphipods in Tin
31	9.75	6.86	10	10
32	7.85	6.82	8	8
33	8.63	6.78	8	8
34	8.25	6.77	10	10
35	8.44	6.81	10	10
36	9.27	6.78	10	10
37	8.40	6.82	9	9
38	8.87	6.67	9	9
39	9.58	6.77	10	10
40	8.17	6.75	6	6
41	9.33	6.78	9	9
42	8.65	6.76	9	9
43	8.08	6.82	8	8
44	7.96	6.73	9	9
45	8.06	6.79	7	7
46	8.52	6.13	8	8
47	7.80	6.81	7	7
48	8.55	6.77	9	9
49	8.77	6.80	10	10
50	7.79	6.77	4	4
51	8.20	6.71	9	9
52	7.49	6.78	8	8
53	8.56	6.04	10	10
54	8.20	6.79	8	8
55	7.36	6.85	7	7
56	7.18	6.78	4	4
57	7.82	6.81	7	7
58	9.09	6.74	9	9
59	7.53	6.72	6	6
60	8.41	6.19	10	10

weigh to 0.01 mg

Hyallela GROWTH DATA

Client: Hanford Species ID#: AMP 56

Lab ID: see randomization sheet batch number: B1538 Start Date: 3/3/2006

Sample Description:

Technician: BM dw

Date: 4/3/2006 1/18/2006

Tin ID Number	Total Weight (mg) (after 60°C for 24 hr)	Tare Weight (mg) (after 60°C for 24 hr)	No. of Amphipods Surviving	No. of Amphipods in Tin
61	8.81	6.76	10	10
62	8.71	6.72	7	7
63	8.70	6.75	6	6
64	9.06	6.77	9	9
65	8.89	6.78	9	9
66	7.49	6.77	4	4
67	7.74	6.75	9	9
68	7.20	6.81	4	4
69	7.48	6.80	7	7
70	7.05	6.85	1	1
71	6.98	6.73	3	3
72	8.28	6.82	10	10
73	7.67	6.72	8	8
74	8.81	6.81	10	10
75	9.04	6.74	10	10
76	7.94	6.88	9	9
77	9.67	6.78	10	10
78	7.04	6.76	3	3
79	8.84	6.86	8	8
80	7.35	6.73	6	6
81	8.87	6.80	10	10
82	9.17	6.76	9	9
83	7.13	6.75	3	3
84	8.69	6.81	6	6
85	8.60	6.79	10	10
86	7.69	6.81	9	9
87	8.23	6.80	9	9
88	8.26	6.71	9	9
89	7.45	6.13	6	6
90	8.06	6.16	8	8

weigh to 0.01 mg

Hyallela GROWTH DATA

Client Hanford Species ID# AMP 56

Lab ID: see randomization sheet batch number: B1538 Start Date 3/3/2006

Sample Description:

Technician: BM dw

Date: 4/3/2006 1/18/2006

Tin ID Number	Total Weight (mg) (after 60°C for 24 hr)	Tare Weight (mg) (after 60°C for 24 hr)	No. of Amphipods Surviving	No. of Amphipods in Tin
91	9.25	6.67	9	9
92	7.80	6.72	4	4
93	7.23	5.03	10	10
94	8.24	6.79	7	7
95	8.47	6.86	7	7
96	7.74	6.89	6	6
97	8.06	6.82	6	6
98	8.09	6.85	6	6
99	7.36	6.88	2	2
100	8.53	6.92	8	8
101	8.68	6.84	10	10
102	7.11	6.93	2	2
103	7.74	6.84	6	6
104	8.55	6.85	8	8
105	8.54	6.89	8	8

weigh to 0.01 mg

CETIS Test Summary

Report Date: 03 Apr-06 11:05 AM
Test Link: 15-5042-6894/B153801hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	05-4144-8625	Test Type:	Hyalella (42d)	Duration:	28d 0h
Start Date:	03 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalella azteca
Ending Date:	31 Mar-06	Dil Water:		Source:	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	Brine:			

Sample No:	13-0602-3278	Code:	B1538-01	Client:	
Sample Date:	05 Feb-06	Material:	Sediment	Project:	
Receive Date:	07 Feb-06	Source:	Hanford		
Sample Age:	26d 0h	Station:			

Comments: J11143

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
09-2037-2780	28d Mean Dry Weight	100	> 100	N/A	28.69%	Equal Variance t Two-Sample
18-5042-6778	28d Proportion Survived	< 100	100	N/A	23.44%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
18-5042-6778	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.16929	0.11778	0.24000	0.02071	0.04631	27.35%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.66000	0.20000	0.90000	0.12884	0.28810	43.65%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.18143	0.24000	0.16556	0.14167	0.11778

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.70000	0.20000	0.90000	0.60000	0.90000

CETIS Analysis Detail

Hyaliela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	15-5042-6894	15-5042-6894	03 Apr-06 11:03 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	23.44%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	2.04021	1.85955	0.0378	0.2899	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.2529053	0.252905	1	4.16	0.07565	Non-Significant Effect
Error	0.4860712	0.060759	8			
Total	0.73897648	0.3136642	9			

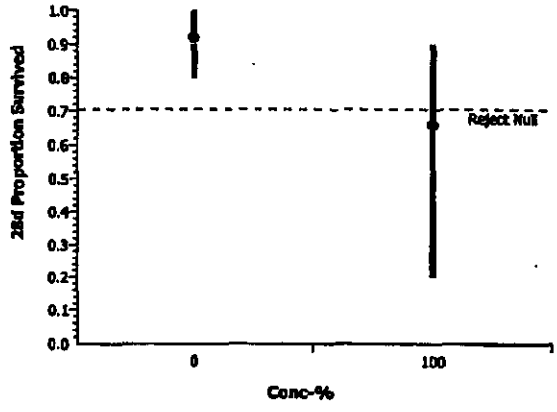
ANOVA Assumptions

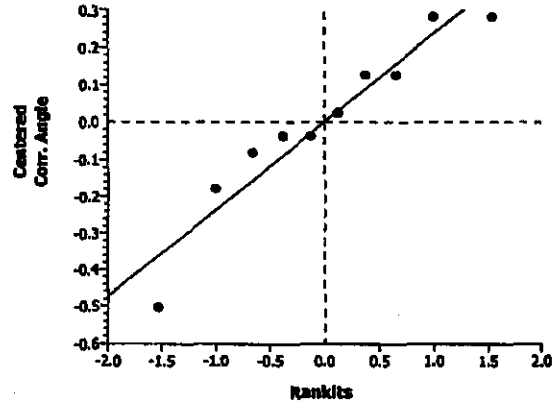
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	6.31165	23.15450	0.10200	Equal Variances
Distribution	Shapiro-Wilk W	0.92047		0.36086	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.66000	0.20000	0.90000	0.28810	0.96779	0.46365	1.24905	0.32388

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	15-5042-6894	15-5042-6894	03 Apr-06 11:03 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	28.69%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-0.6006	1.85955	0.7176	0.04445	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0005154	0.000515	1	0.36	0.56472	Non-Significant Effect
Error	0.0114295	0.001429	8			
Total	0.01194488	0.0019441	9			

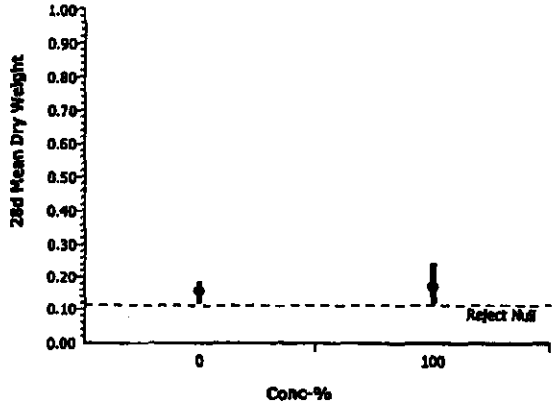
ANOVA Assumptions

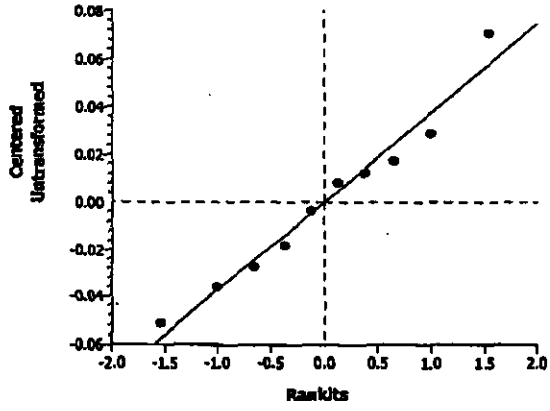
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.00789	23.15450	0.31139	Equal Variances
Distribution	Shapiro-Wilk W	0.97233		0.91160	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.16929	0.11778	0.24000	0.04631				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:17 AM
Test Link: 07-9085-4186/B153802hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	04-2067-0903	Test Type:	Hyalella (42d)	Duration:	28d 0h
Start Date:	03 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalella azteca
Ending Date:	31 Mar-06	Dil Water:		Source:	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	Brine:			

Sample No:	11-2839-4047	Code:	B1538-02	Client:	
Sample Date:	08 Feb-06	Material:	Sediment	Project:	
Receive Date:	10 Feb-06	Source:	Hanford		
Sample Age:	23d 0h	Station:			

Comments: J11146

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
14-8348-2574	28d Mean Dry Weight	100	> 100	N/A	28.10%	Equal Variance t Two-Sample
12-0083-3267	28d Proportion Survived	100	> 100	N/A	11.96%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
12-0083-3267	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.27109	0.20625	0.31700	0.02013	0.04502	16.61%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.90000	0.80000	1.00000	0.04472	0.10000	11.11%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.29875	0.31700	0.24444	0.20625	0.28900

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.80000	1.00000	0.90000	0.80000	1.00000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	07-9085-4186	07-9085-4186	03 Apr-06 11:17 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	11.96%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.31778	1.85955	0.3794	0.16607	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0020135	0.002013	1	0.10	0.75879	Non-Significant Effect
Error	0.159512	0.019939	8			
Total	0.16152545	0.0219525	9			

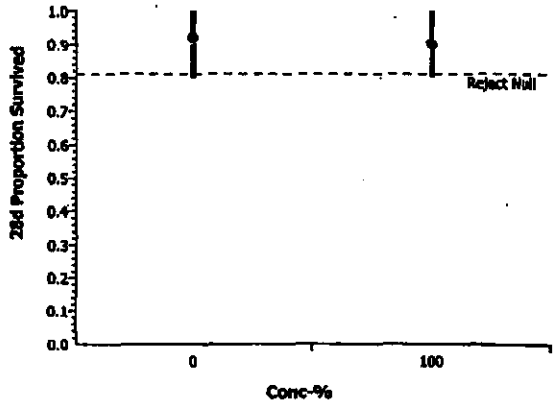
ANOVA Assumptions

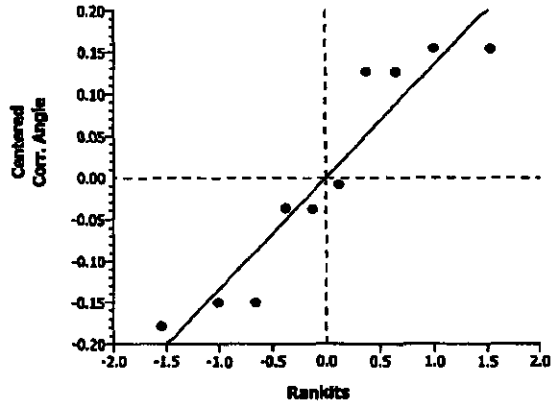
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.39943	23.15450	0.75260	Equal Variances
Distribution	Shapiro-Wilk W	0.86706		0.09235	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.90000	0.80000	1.00000	0.10000	1.25748	1.10715	1.41202	0.15251

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	07-9085-4186	07-9085-4186	03 Apr-06 11:17 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	28.10%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-4.9623	1.85955	0.9994	0.04353	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0337335	0.033734	1	24.62	0.00110	Significant Effect
Error	0.0109595	0.00137	8			
Total	0.04469304	0.0351034	9			

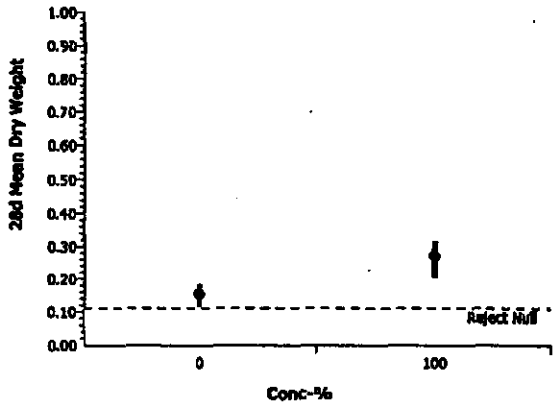
ANOVA Assumptions

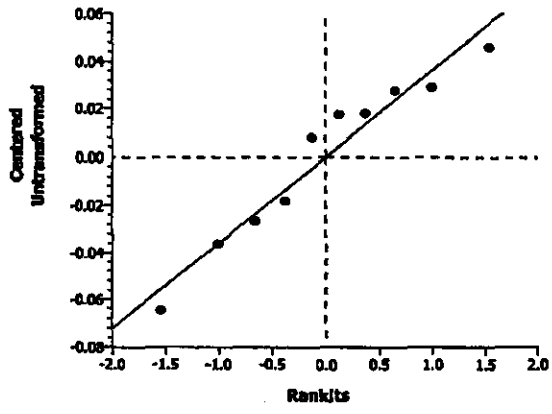
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.84309	23.15450	0.33577	Equal Variances
Distribution	Shapiro-Wilk W	0.93921		0.54424	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.27109	0.20625	0.31700	0.04502				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:20 AM
Test Link: 09-1540-9662/B153803hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	07-5505-4020	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	10-0636-9456	**Code:**	B1538-03	**Client:**	
Sample Date:	08 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	10 Feb-06	**Source:**	Hanford		
Sample Age:	23d 0h	**Station:**			

Comments: J11144

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
05-3038-6721	28d Mean Dry Weight	100	> 100	N/A	20.09%	Equal Variance t Two-Sample
03-6737-8936	28d Proportion Survived	100	> 100	N/A	14.35%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
03-6737-8936	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.17264	0.13500	0.19778	0.01173	0.02623	15.19%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.86000	0.60000	1.00000	0.06782	0.15166	17.63%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.19778	0.13500	0.18667	0.15600	0.18778

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.90000	0.60000	0.90000	1.00000	0.90000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	09-1540-9662	09-1540-9662	03 Apr-06 11:19 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	14.35%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.73775	1.85955	0.2409	0.19360	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0147488	0.014749	1	0.54	0.48174	Non-Significant Effect
Error	0.2167847	0.027098	8			
Total	0.23153355	0.0418469	9			

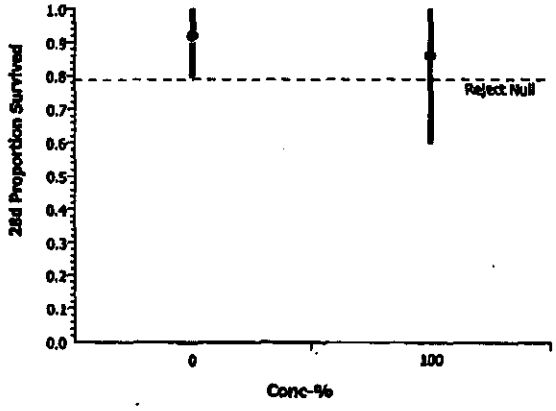
ANOVA Assumptions

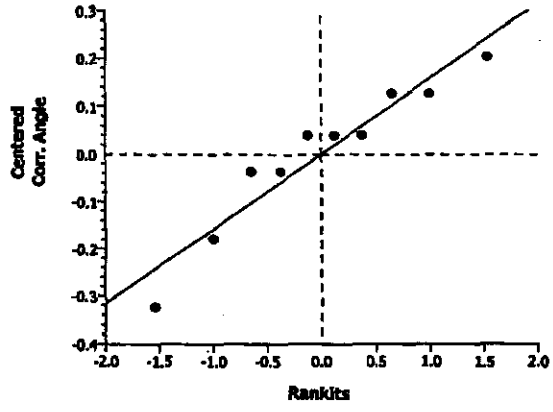
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.26095	23.15450	0.44889	Equal Variances
Distribution	Shapiro-Wilk W	0.91920		0.35033	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.86000	0.60000	1.00000	0.15166	1.20905	0.88608	1.41202	0.19385

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	09-1540-9662	09-1540-9662	03 Apr-06 11:19 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed.		100	>100	1	N/A	20.09%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-1.0585	1.85955	0.8396	0.03113	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0007847	0.000785	1	1.12	0.32075	Non-Significant Effect
Error	0.0056032	0.000700	8			
Total	0.00638792	0.0014851	9			

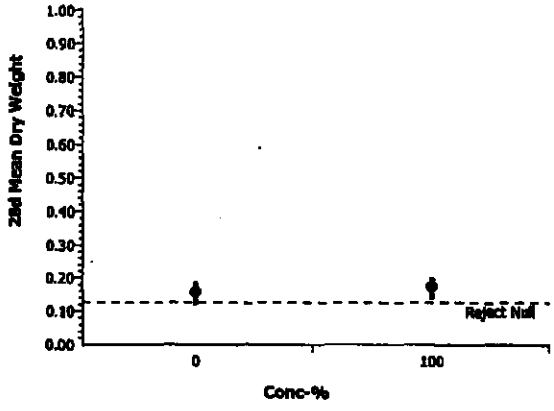
ANOVA Assumptions

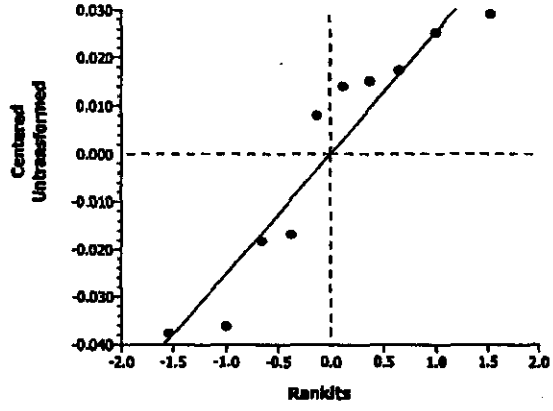
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.03645	23.15450	0.97316	Equal Variances
Distribution	Shapiro-Wilk W	0.87969		0.12944	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.17264	0.13500	0.19778	0.02623				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:21 AM
Test Link: 03-8597-0176/B153804hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	04-7256-1028	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	08-7504-1098	**Code:**	B1538-04	**Client:**	
Sample Date:	08 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	10 Feb-06	**Source:**	Hanford		
Sample Age:	23d 0h	**Station:**			

Comments: J11145

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
11-7637-2583	28d Mean Dry Weight	100	>100	N/A	21.87%	Equal Variance t Two-Sample
10-8967-8632	28d Proportion Survived	100	>100	N/A	16.20%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
10-8967-8632	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.26279	0.23667	0.31400	0.01377	0.03079	11.72%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.86000	0.60000	1.00000	0.07483	0.16733	19.46%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.31400	0.23667	0.26800	0.24778	0.24750

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		1.00000	0.60000	1.00000	0.90000	0.80000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	03-8597-0176	03-8597-0176	03 Apr-06 11:21 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	16.20%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.63056	1.85955	0.2730	0.21408	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0131746	0.013175	1	0.40	0.54591	Non-Significant Effect
Error	0.2650759	0.033134	8			
Total	0.27825049	0.0463091	9			

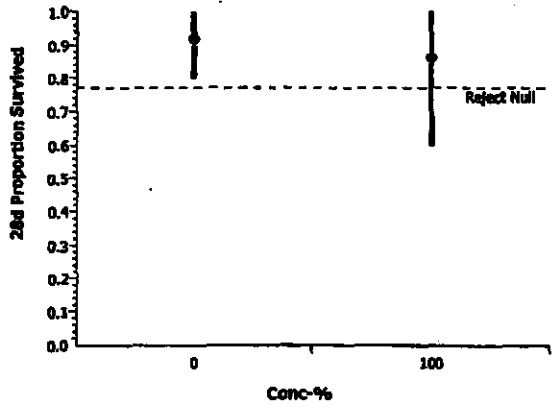
ANOVA Assumptions

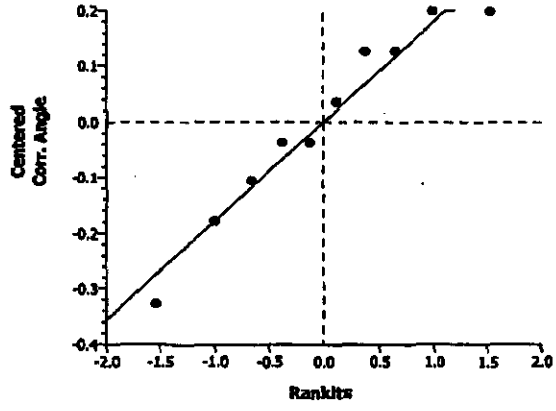
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.98736	23.15450	0.31428	Equal Variances
Distribution	Shapiro-Wilk W	0.93793		0.53025	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.86000	0.60000	1.00000	0.16733	1.21326	0.88608	1.41202	0.22282

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	03-8597-0176	03-8597-0176	03 Apr-06 11:21 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	21.87%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-5.9183	1.85955	0.9998	0.03389	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0290851	0.029085	1	35.03	0.00035	Significant Effect
Error	0.0066429	0.000830	8			
Total	0.03572799	0.0299154	9			

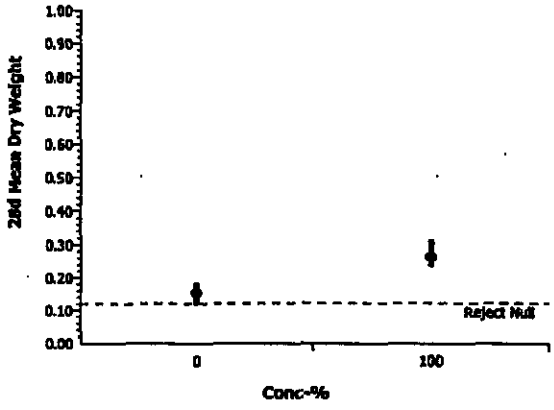
ANOVA Assumptions

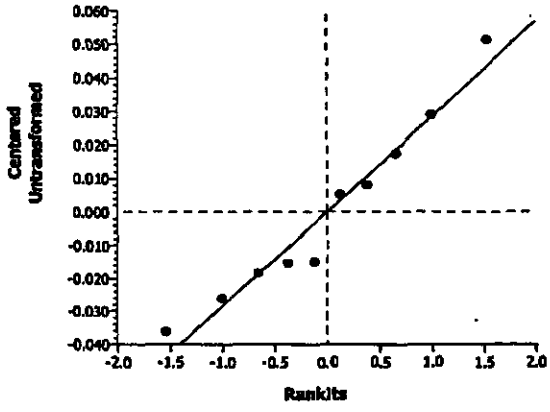
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.32942	23.15450	0.78929	Equal Variances
Distribution	Shapiro-Wilk W	0.95368		0.71208	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.26279	0.23667	0.31400	0.03079				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:27 AM
Test Link: 08-8552-2246/B153805hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	02-4306-3429	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	10-8372-1070	**Code:**	B1538-05	**Client:**	
Sample Date:	09 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	22d 0h	**Station:**			

Comments: J116N1

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
19-8792-0312	28d Mean Dry Weight	100	> 100	N/A	24.32%	Equal Variance t Two-Sample
02-6083-4326	28d Proportion Survived	100	> 100	N/A	19.63%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
02-6083-4326	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.19600	0.15750	0.25500	0.01637	0.03660	18.67%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.72000	0.40000	1.00000	0.10198	0.22804	31.67%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.19000	0.25500	0.17750	0.20000	0.15750

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.60000	0.40000	0.80000	1.00000	0.80000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	08-8552-2246	08-8552-2246	03 Apr-06 11:27 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	19.63%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	1.82716	1.85955	0.0525	0.25080	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.1518225	0.151823	1	3.34	0.10509	Non-Significant Effect
Error	0.3638079	0.045476	8			
Total	0.51563042	0.1972985	9			

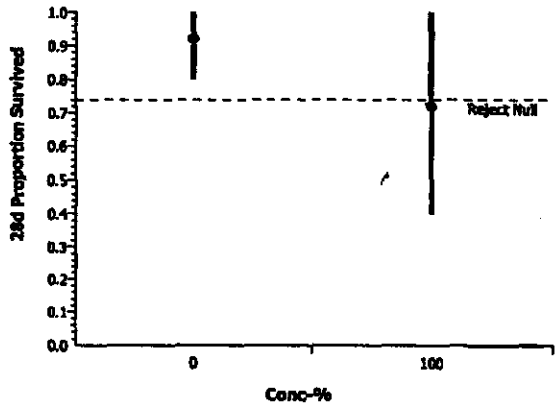
ANOVA Assumptions

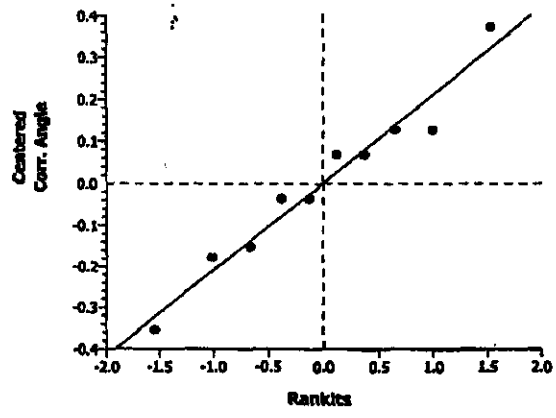
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	4.47252	23.15450	0.17594	Equal Variances
Distribution	Shapiro-Wilk W	0.97145		0.90394	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.72000	0.40000	1.00000	0.22804	1.03942	0.68472	1.41202	0.27264

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	08-8552-2246	08-8552-2246	03 Apr-06 11:27 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	24.32%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-2.0273	1.85955	0.9614	0.03767	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0042173	0.004217	1	4.11	0.07718	Non-Significant Effect
Error	0.0082093	0.001026	8			
Total	0.01242657	0.0052435	9			

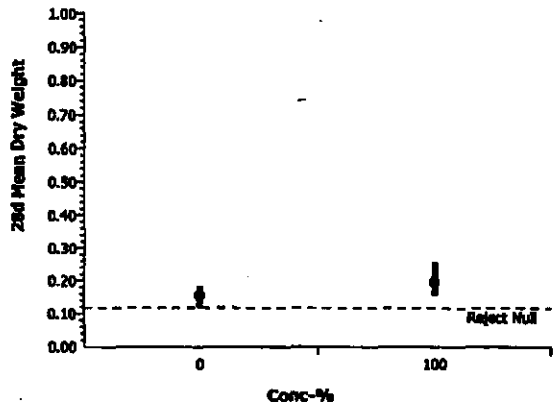
ANOVA Assumptions

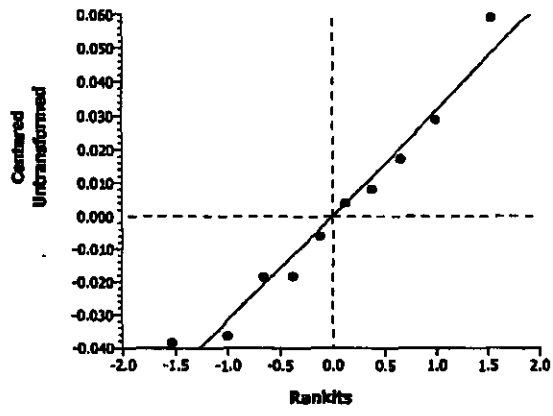
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.87867	23.15450	0.55637	Equal Variances
Distribution	Shapiro-Wilk W	0.95860		0.76974	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.19600	0.15750	0.25500	0.03660				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:42 PM
Test Link: 09-7530-6120/B153806hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	11-9504-7721	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	04-9468-8770	**Code:**	B1538-06	**Client:**	
Sample Date:	09 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	22d 0h	**Station:**			

Comments: J116N3

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
18-4841-1967	28d Mean Dry Weight	100	> 100	N/A	42.64%	Equal Variance t Two-Sample
05-9718-6909	28d Proportion Survived	< 100	100	N/A	13.65%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
05-9718-6909	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.17740	0.07286	0.25000	0.03346	0.07482	42.18%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.78000	0.70000	1.00000	0.05831	0.13038	16.72%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.23000	0.07286	0.12700	0.25000	0.20714

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.70000	0.70000	1.00000	0.80000	0.70000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	09-7530-6120	09-7530-6120	03 Apr-06 11:37 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	13.65%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	1.87603	1.85955	0.0487	0.18568	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0877291	0.087729	1	3.52	0.09750	Non-Significant Effect
Error	0.199414	0.024927	8			
Total	0.28714305	0.1126558	9			

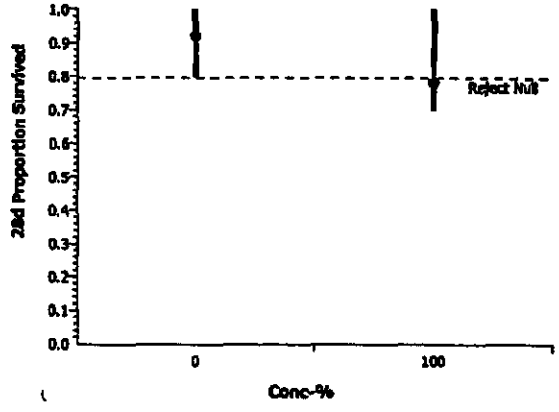
ANOVA Assumptions

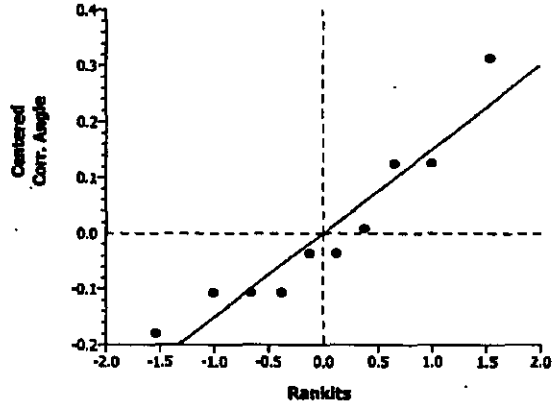
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.99965	23.15450	0.51862	Equal Variances
Distribution	Shapiro-Wilk W	0.89942		0.21588	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.78000	0.70000	1.00000	0.13038	1.09853	0.99116	1.41202	0.18230

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	09-7530-6120	09-7530-6120	03 Apr-06 11:37 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	42.64%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-0.6325	1.85955	0.7277	0.06606	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0012625	0.001263	1	0.40	0.54468	Non-Significant Effect
Error	0.0252433	0.003155	8			
Total	0.02650577	0.0044179	9			

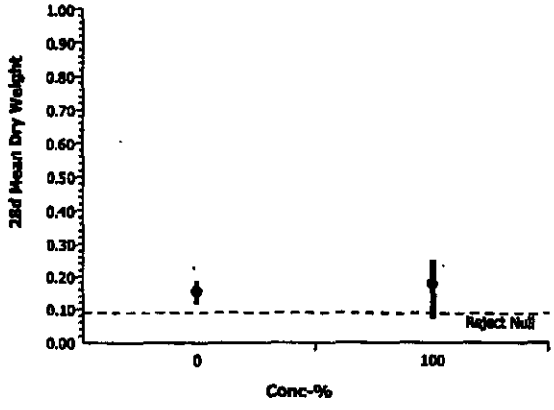
ANOVA Assumptions

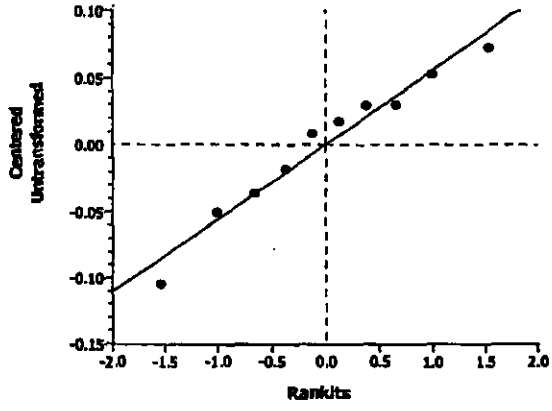
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	7.85185	23.15450	0.07081	Equal Variances
Distribution	Shapiro-Wilk W	0.96190		0.80730	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.17740	0.07286	0.25000	0.07482				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:39 AM
Test Link: 06-7721-7047/B153807hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	14-2440-8684	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	14-7330-4021	**Code:**	B1538-07	**Client:**	
Sample Date:	12 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	19d 0h	**Station:**			

Comments: J112B7

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
05-8563-0796	28d Mean Dry Weight	< 100	100	N/A	22.45%	Equal Variance t Two-Sample
14-1941-1551	28d Proportion Survived	< 100	100	N/A	20.94%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
14-1941-1551	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.09673	0.05000	0.14100	0.01440	0.03219	33.28%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.62000	0.40000	1.00000	0.10677	0.23875	38.51%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.09750	0.09714	0.09800	0.14100	0.05000

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.40000	0.70000	0.50000	1.00000	0.50000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	06-7721-7047	06-7721-7047	03 Apr-06 11:39 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	20.94%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	2.48994	1.85955	0.0188	0.26446	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.3134969	0.313497	1	6.20	0.03753	Significant Effect
Error	0.4045256	0.050566	8			
Total	0.7180225	0.3640626	9			

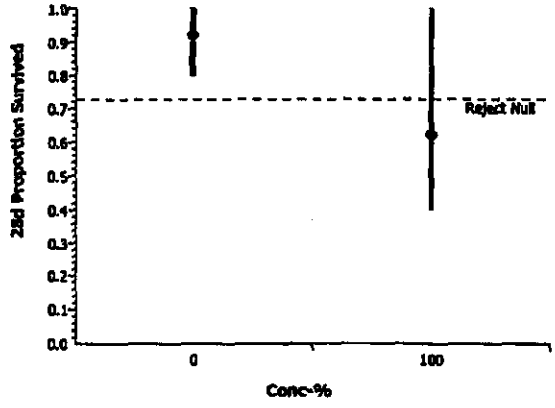
ANOVA Assumptions

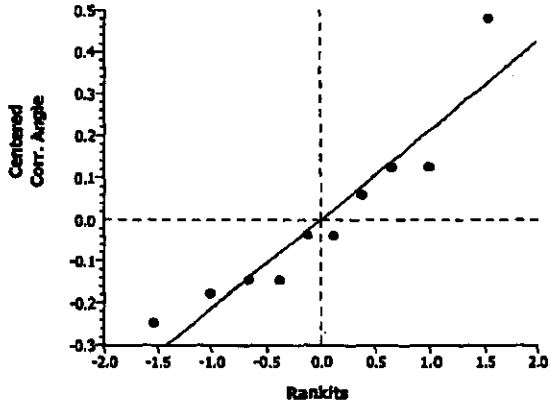
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	5.08501	23.15450	0.14429	Equal Variances
Distribution	Shapiro-Wilk W	0.89358		0.18600	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.62000	0.40000	1.00000	0.23875	0.93174	0.68472	1.41202	0.29071

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	06-7721-7047	06-7721-7047	03 Apr-06 11:39 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	22.45%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	3.11140	1.85955	0.0072	0.03478	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0084679	0.008468	1	9.68	0.01441	Significant Effect
Error	0.0069976	0.000875	8			
Total	0.01546553	0.0093426	9			

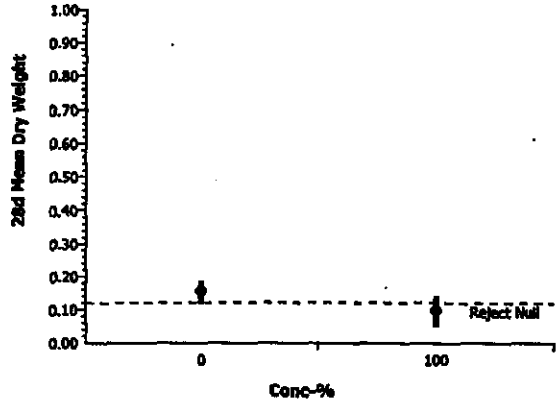
ANOVA Assumptions

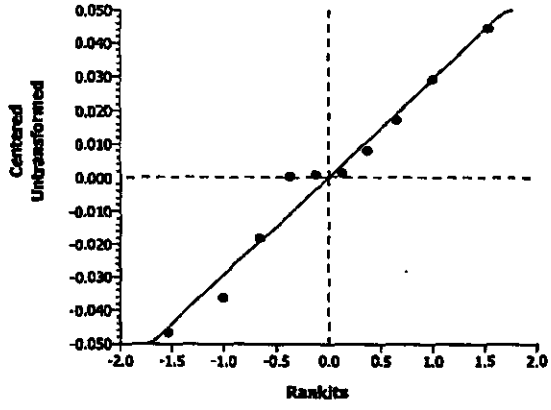
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.45381	23.15450	0.72575	Equal Variances
Distribution	Shapiro-Wilk W	0.96688		0.86050	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.09673	0.05000	0.14100	0.03219				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:42 AM
Test Link: 16-8970-9656/B153808hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	11-4608-1916	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	14-9948-4143	**Code:**	B1538-08	**Client:**	
Sample Date:	09 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	22d 0h	**Station:**			

Comments: J116N2

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
10-6556-0537	28d Mean Dry Weight	100	> 100	N/A	21.26%	Equal Variance t Two-Sample
06-0154-6964	28d Proportion Survived	100	> 100	N/A	14.54%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
06-0154-6964	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.15964	0.12875	0.20667	0.01308	0.02925	18.32%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.78000	0.60000	1.00000	0.06633	0.14832	19.02%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.12875	0.15600	0.14429	0.20667	0.16250

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.80000	1.00000	0.70000	0.60000	0.80000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	16-8970-9656	16-8970-9656	03 Apr-06 11:42 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	14.54%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	1.75913	1.85955	0.0583	0.19571	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0856967	0.085697	1	3.09	0.11660	Non-Significant Effect
Error	0.2215427	0.027693	8			
Total	0.30723938	0.1133896	9			

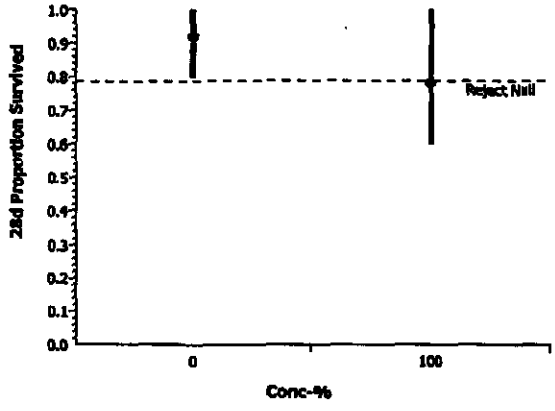
ANOVA Assumptions

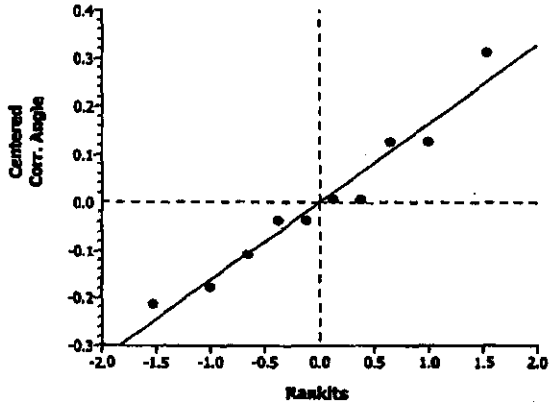
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.33252	23.15450	0.43218	Equal Variances
Distribution	Shapiro-Wilk W	0.95346		0.70953	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.78000	0.60000	1.00000	0.14832	1.10071	0.88608	1.41202	0.19689

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	16-8970-9656	16-8970-9656	03 Apr-06 11:42 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	21.26%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-0.2661	1.85955	0.6015	0.03294	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	5.552E-05	5.55E-05	1	0.07	0.79692	Non-Significant Effect
Error	0.0062746	0.000784	8			
Total	0.00633016	0.0008399	9			

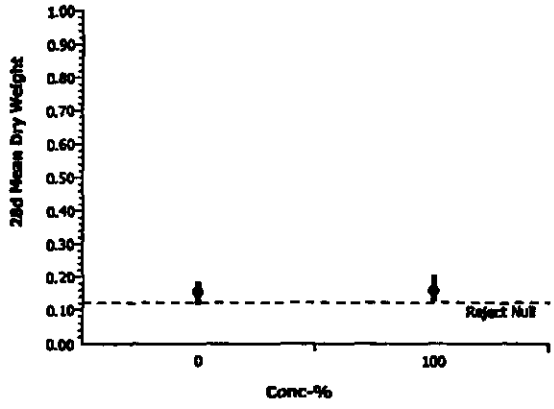
ANOVA Assumptions

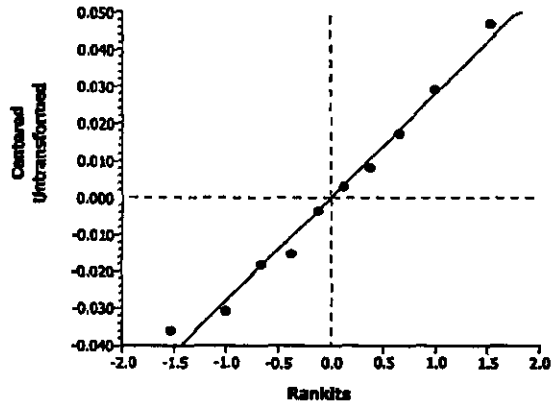
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.20028	23.15450	0.86384	Equal Variances
Distribution	Shapiro-Wilk W	0.97509		0.93361	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.15964	0.12875	0.20667	0.02925				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:49 AM
Test Link: 05-8367-4848/B153809hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	14-6106-2643	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	06-1149-3769	**Code:**	B1538-09	**Client:**	
Sample Date:	12 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	19d 0h	**Station:**			

Comments: J116M4

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
12-1261-1481	28d Mean Dry Weight	< 100	100	N/A	19.51%	Equal Variance t Two-Sample
10-1107-2830	28d Proportion Survived	< 100	100	N/A	23.53%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
10-1107-2830	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		4	0.10119	0.08143	0.12667	0.00960	0.01920	18.97%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.38000	0.00000	0.70000	0.12410	0.27749	73.02%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.08143	0.10333	0.12667	0.09333	

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.70000	0.60000	0.30000	0.00000	0.30000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	05-8367-4848	05-8367-4848	03 Apr-06 11:49 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	23.53%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	4.13561	1.85955	0.0016	0.29083	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	1.045862	1.045862	1	17.10	0.00327	Significant Effect
Error	0.4891987	0.06115	8			
Total	1.53506076	1.1070119	9			

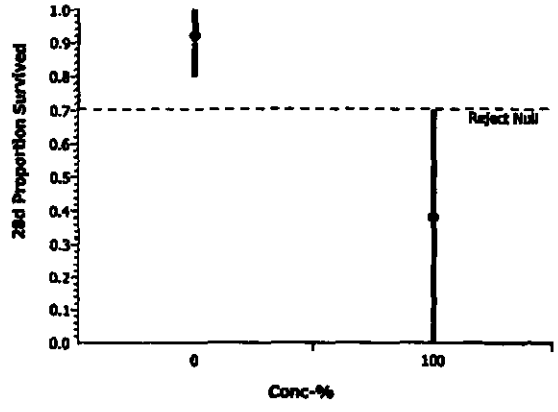
ANOVA Assumptions

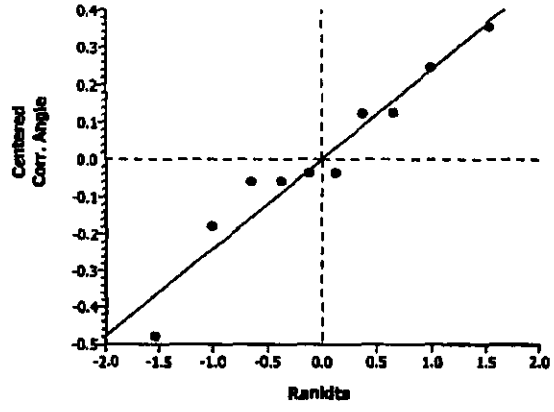
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	6.35869	23.15450	0.10076	Equal Variances
Distribution	Shapiro-Wilk W	0.94567		0.61769	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.38000	0.00000	0.70000	0.27749	0.63906	0.15878	0.99116	0.32508

Graphics





CETIS Analysis Detail

Hyaliela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	05-8367-4848	05-8367-4848	03 Apr-06 11:49 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	19.51%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	3.36899	1.89458	0.0060	0.03022	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0064171	0.006417	1	11.35	0.01194	Significant Effect
Error	0.0039576	0.000565	7			
Total	0.01037476	0.0069825	8			

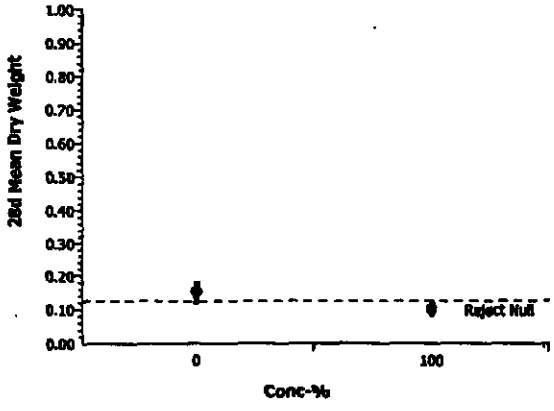
ANOVA Assumptions

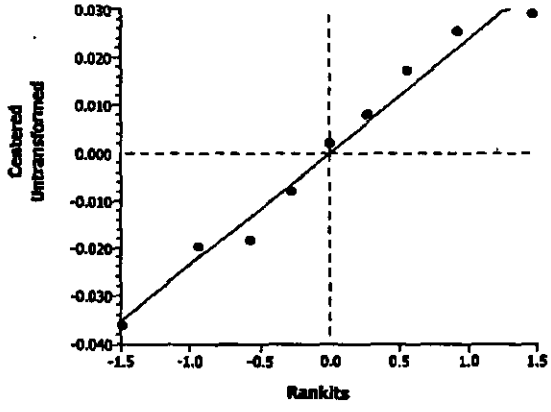
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.93401	46.19462	0.61473	Equal Variances
Distribution	Shapiro-Wilk W	0.96007		0.79906	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		4	0.10119	0.08143	0.12667	0.01920				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:50 AM
Test Link: 05-7535-5514/B153810hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	16-7955-2605	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	14-8361-9179	**Code:**	B1538-10	**Client:**	
Sample Date:	09 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	22d 0h	**Station:**			

Comments: J116N0

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
00-9983-6726	28d Mean Dry Weight	100	> 100	N/A	16.45%	Equal Variance t Two-Sample
12-5209-7390	28d Proportion Survived	100	> 100	N/A	23.12%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
12-5209-7390	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.19945	0.18000	0.22000	0.00673	0.01505	7.55%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.84000	0.40000	1.00000	0.11662	0.26077	31.04%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.19100	0.22000	0.18000	0.20500	0.20125

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		1.00000	1.00000	0.40000	1.00000	0.80000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	05-7535-5514	05-7535-5514	03 Apr-06 11:50 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	23.12%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.5207	1.85955	0.3083	0.28667	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0161087	0.016109	1	0.27	0.61668	Non-Significant Effect
Error	0.4753113	0.059414	8			
Total	0.49141999	0.0755226	9			

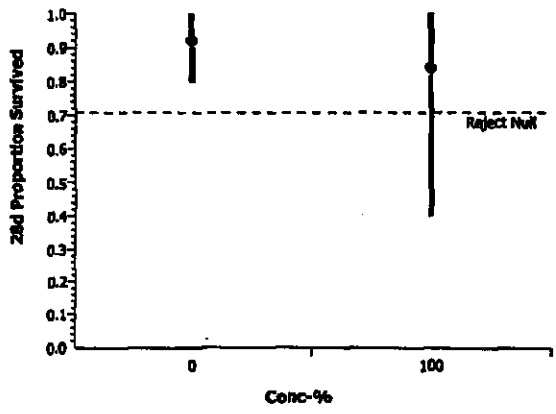
ANOVA Assumptions

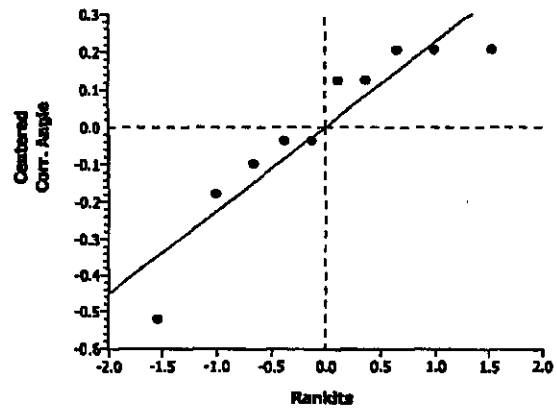
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	6.14979	23.15450	0.10643	Equal Variances
Distribution	Shapiro-Wilk W	0.85062		0.05908	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.84000	0.40000	1.00000	0.26077	1.20558	0.68472	1.41202	0.31970

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M HILL

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	05-7535-5514	05-7535-5514	03 Apr-06 11:50 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	16.45%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-3.2481	1.85955	0.9941	0.02549	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0049556	0.004956	1	10.55	0.01174	Significant Effect
Error	0.0037578	0.00047	8			
Total	0.00871337	0.0054253	9			

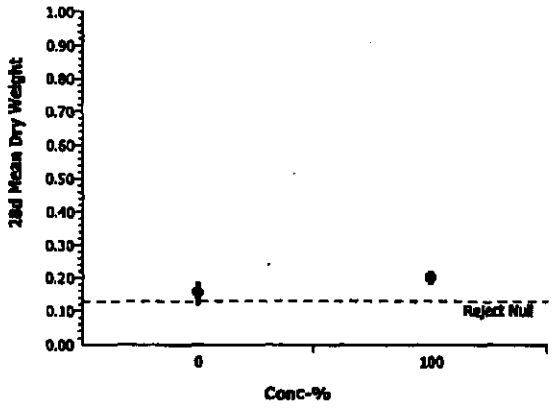
ANOVA Assumptions

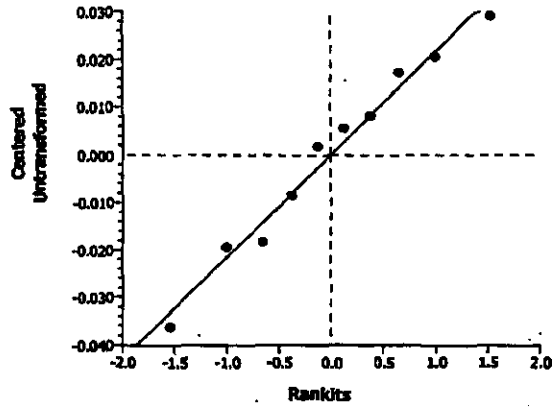
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.14745	23.15450	0.29274	Equal Variances
Distribution	Shapiro-Wilk W	0.97063		0.89665	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.19945	0.18000	0.22000	0.01505				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:51 AM
Test Link: 18-0960-7012/B153811hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	10-9096-9911	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	05-7554-7110	**Code:**	B1538-11	**Client:**	
Sample Date:	09 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	22d 0h	**Station:**			

Comments: J11731

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
13-5229-7724	28d Mean Dry Weight	100	> 100	N/A	24.75%	Equal Variance t Two-Sample
05-1177-2137	28d Proportion Survived	100	> 100	N/A	11.96%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
05-1177-2137	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.20325	0.14800	0.25200	0.01681	0.03758	18.49%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.90000	0.80000	1.00000	0.04472	0.10000	11.11%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.21250	0.21000	0.19375	0.25200	0.14800

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.80000	0.90000	0.80000	1.00000	1.00000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	18-0960-7012	18-0960-7012	03 Apr-06 11:51 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	11.96%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.31778	1.85955	0.3794	0.16607	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0020135	0.002013	1	0.10	0.75879	Non-Significant Effect
Error	0.159512	0.019939	8			
Total	0.16152545	0.0219525	9			

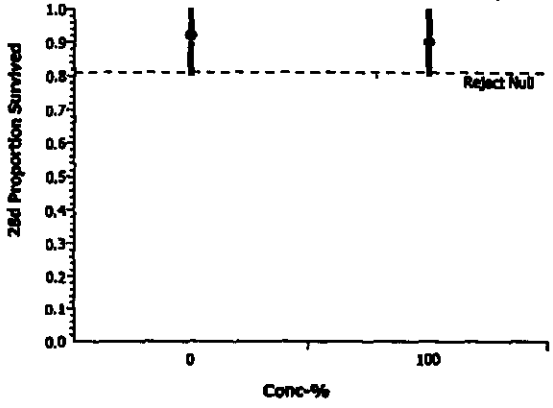
ANOVA Assumptions

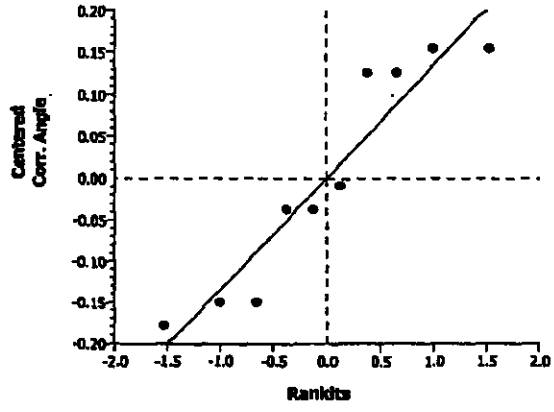
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.39943	23.15450	0.75260	Equal Variances
Distribution	Shapiro-Wilk W	0.86706		0.09235	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12692
100		5	0.90000	0.80000	1.00000	0.10000	1.25748	1.10715	1.41202	0.15251

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	18-0960-7012	18-0960-7012	03 Apr-06 11:51 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	24.75%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-2.3437	1.85955	0.9764	0.03834	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0058376	0.005838	1	5.49	0.04715	Significant Effect
Error	0.0085023	0.001063	8			
Total	0.01433985	0.0069004	9			

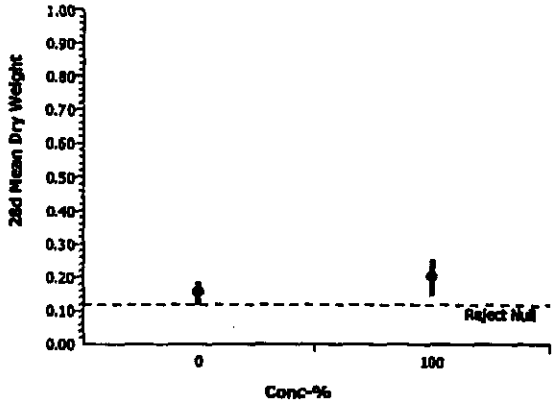
ANOVA Assumptions

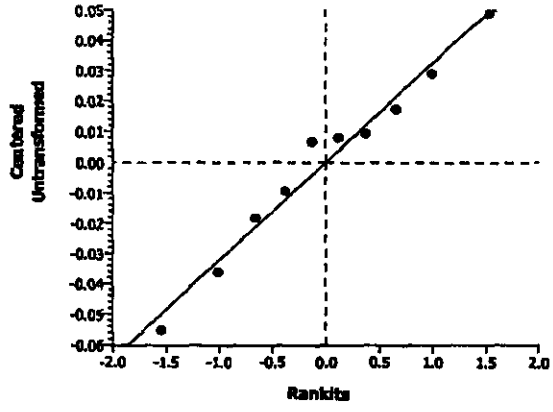
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.98142	23.15450	0.52407	Equal Variances
Distribution	Shapiro-Wilk W	0.97630		0.94232	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.20325	0.14800	0.25200	0.03758				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:53 AM
Test Link: 07-3986-6152/B153812hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	05-8853-3368	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	07-8236-0691	**Code:**	B1538-12	**Client:**	
Sample Date:	12 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	14 Feb-06	**Source:**	Hanford		
Sample Age:	19d 0h	**Station:**			

Comments: J116M5

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
04-4298-5108	28d Mean Dry Weight	100	> 100	N/A	24.32%	Equal Variance t Two-Sample
10-7357-0662	28d Proportion Survived	100	> 100	N/A	31.03%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
10-7357-0662	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.14524	0.09778	0.20000	0.01637	0.03659	25.20%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.66000	0.10000	1.00000	0.15684	0.35071	53.14%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.14143	0.13700	0.15000	0.09778	0.20000

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.70000	1.00000	0.60000	0.90000	0.10000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	07-3986-6152	07-3986-6152	03 Apr-06 11:53 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1 .	N/A	31.03%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	1.60219	1.85955	0.0739	0.36426	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.2462471	0.246247	1	2.57	0.14778	Non-Significant Effect
Error	0.7674216	0.095928	8			
Total	1.01366873	0.3421748	9			

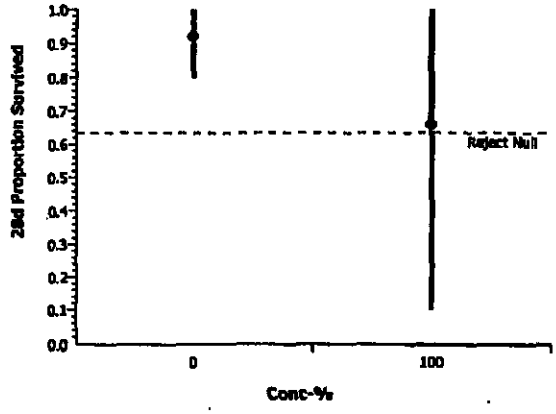
ANOVA Assumptions

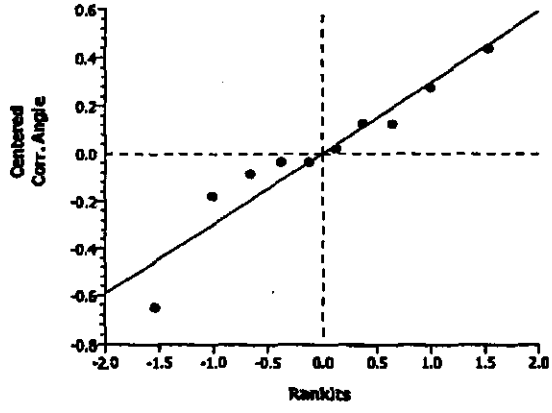
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	10.54382	23.15450	0.04242	Equal Variances
Distribution	Shapiro-Wilk W	0.92634		0.41284	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.66000	0.10000	1.00000	0.35071	0.97201	0.32175	1.41202	0.41861

Graphics





CETIS Analysis Detail

Hyalleia 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	07-3986-6152	07-3986-6152	03 Apr-06 11:53 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	24.32%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.47814	1.85955	0.3227	0.03767	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0002346	0.000235	1	0.23	0.64534	Non-Significant Effect
Error	0.0082082	0.001026	8			
Total	0.00844275	0.0012606	9			

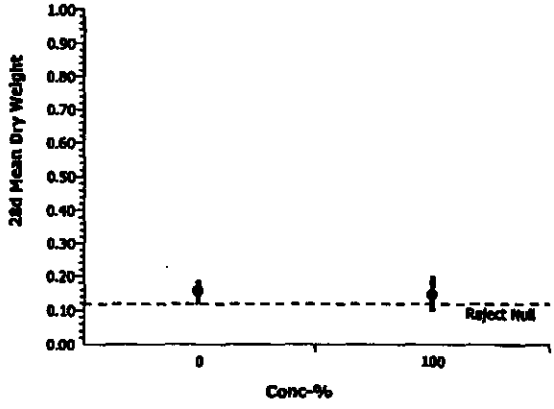
ANOVA Assumptions

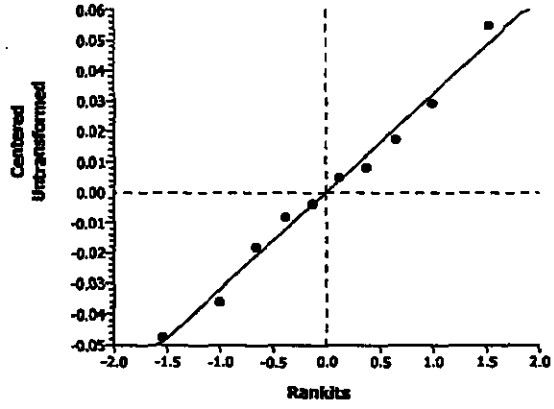
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.87830	23.15450	0.55649	Equal Variances
Distribution	Shapiro-Wilk W	0.98857		0.99476	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.14524	0.09778	0.20000	0.03659				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 11:54 AM
Test Link: 10-9051-1643/B153813hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	04-7058-7436	Test Type:	Hyalella (42d)	Duration:	28d 0h
Start Date:	03 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalella azteca
Ending Date:	31 Mar-06	Dil Water:		Source:	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	Brine:			

Sample No:	07-7208-3847	Code:	B1538-13	Client:	
Sample Date:	12 Feb-06	Material:	Sediment	Project:	
Receive Date:	14 Feb-06	Source:	Hanford		
Sample Age:	19d 0h	Station:			

Comments: J116M8

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
15-0716-5698	28d Mean Dry Weight	< 100	100	N/A	14.78%	Equal Variance t Two-Sample
07-1605-4415	28d Proportion Survived	< 100	100	N/A	19.71%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
07-1605-4415	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.09185	0.08333	0.10000	0.00300	0.00671	7.30%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.48000	0.20000	0.80000	0.11576	0.25884	53.93%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.08333	0.09714	0.08875	0.09000	0.10000

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.30000	0.70000	0.80000	0.20000	0.40000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	10-9051-1643	10-9051-1643	03 Apr-06 11:54 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	19.71%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	3.84671	1.85955	0.0025	0.25166	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.6775404	0.677540	1	14.80	0.00490	Significant Effect
Error	0.3663079	0.045788	8			
Total	1.04384834	0.7233289	9			

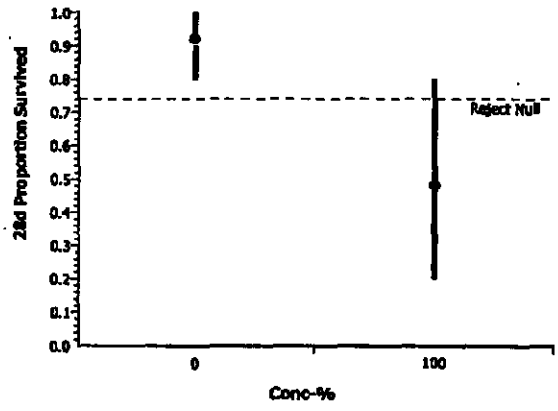
ANOVA Assumptions

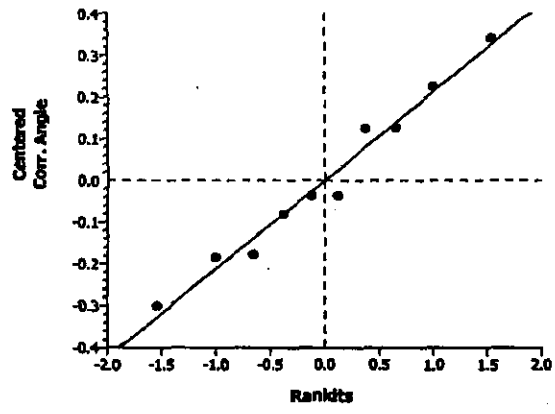
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	4.51013	23.15450	0.17371	Equal Variances
Distribution	Shapiro-Wilk W	0.96742		0.86593	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.48000	0.20000	0.80000	0.25884	0.76526	0.46365	1.10715	0.27378

Graphics





CETIS Analysis Detail

Hyalleia 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	10-9051-1643	10-9051-1643	03 Apr-06 11:54 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	14.78%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	5.12363	1.85955	0.0005	0.02289	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0099485	0.009949	1	26.25	0.00090	Significant Effect
Error	0.0030318	0.000379	8			
Total	0.01298027	0.0103275	9			

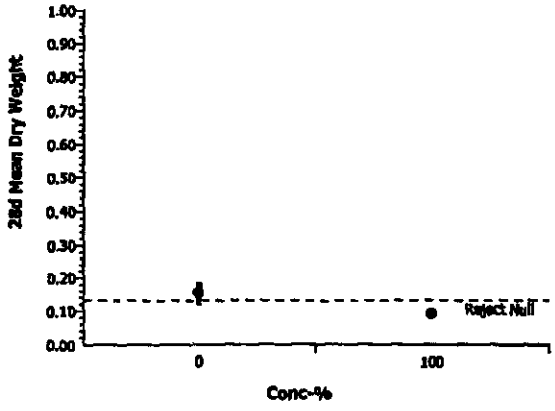
ANOVA Assumptions

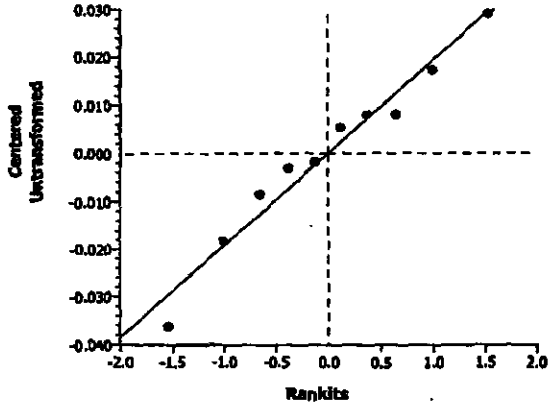
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	15.84299	23.15450	0.02031	Equal Variances
Distribution	Shapiro-Wilk W	0.97475		0.93103	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.09185	0.08333	0.10000	0.00671				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:11 PM
Test Link: 03-9071-6824/B153814hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	05-4024-8518	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	17-7674-4055	**Code:**	B1538-14	**Client:**	
Sample Date:	13 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	15 Feb-06	**Source:**	Hanford		
Sample Age:	18d 0h	**Station:**			

Comments: J11752

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
09-6950-3056	28d Mean Dry Weight	100	> 100	N/A	34.53%	Equal Variance t Two-Sample
06-9264-3537	28d Proportion Survived	100	> 100	N/A	16.20%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
06-9264-3537	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.24225	0.17625	0.29333	0.02617	0.05852	24.16%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.86000	0.60000	1.00000	0.07483	0.16733	19.46%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.29333	0.17625	0.28667	0.18100	0.27400

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.60000	0.80000	0.90000	1.00000	1.00000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	03-9071-6824	03-9071-6824	03 Apr-06 1:11 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	16.20%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.63056	1.85955	0.2730	0.21408	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0131746	0.013175	1	0.40	0.54591	Non-Significant Effect
Error	0.2650759	0.033134	8			
Total	0.27825049	0.0463091	9			

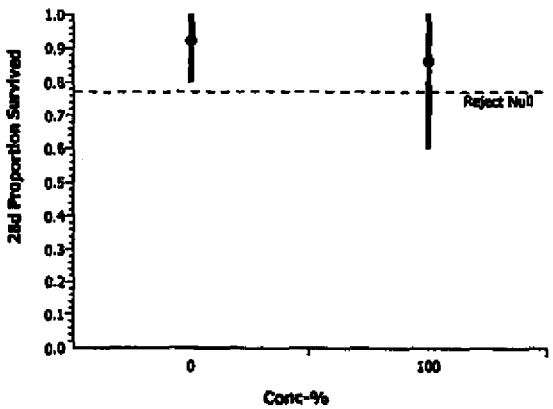
ANOVA Assumptions

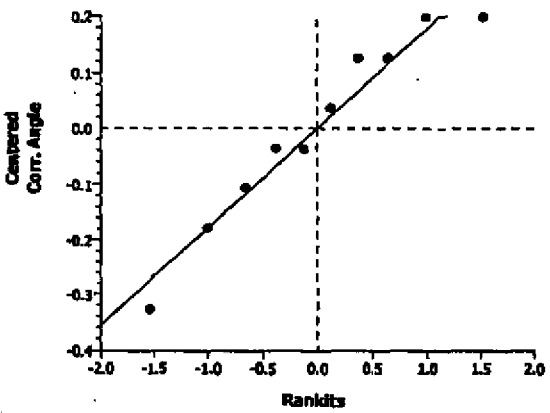
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.98736	23.15450	0.31428	Equal Variances
Distribution	Shapiro-Wilk W	0.93793		0.53025	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.86000	0.60000	1.00000	0.16733	1.21326	0.88608	1.41202	0.22282

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	03-9071-6824	03-9071-6824	03 Apr-06 1:11 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	34.53%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-3.0356	1.85955	0.9919	0.05349	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0190629	0.019063	1	9.21	0.01617	Significant Effect
Error	0.0165497	0.002069	8			
Total	0.03561266	0.0211316	9			

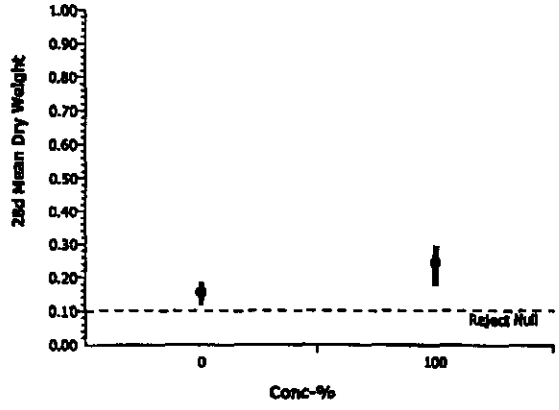
ANOVA Assumptions

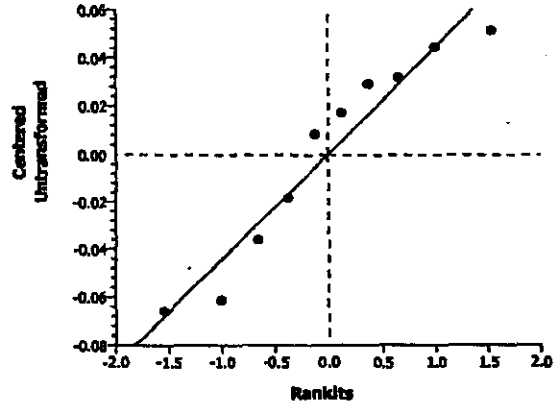
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	4.80336	23.15450	0.15769	Equal Variances
Distribution	Shapiro-Wilk W	0.90934		0.27648	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.24225	0.17625	0.29333	0.05852				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:13 PM
Test Link: 18-9187-0962/B153815hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	04-0661-8839	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	15-5914-3374	**Code:**	B1538-15	**Client:**	
Sample Date:	13 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	16 Feb-06	**Source:**	Hanford		
Sample Age:	18d 0h	**Station:**			

Comments: J11745

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
15-7631-5703	28d Mean Dry Weight	100	> 100	N/A	36.04%	Equal Variance t Two-Sample
02-4818-1490	28d Proportion Survived	100	> 100	N/A	10.74%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
02-4818-1490	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.20196	0.11000	0.27100	0.02755	0.06160	30.50%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.17556	0.27100	0.22200	0.11000	0.23125

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.90000	1.00000	1.00000	0.90000	0.80000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M HILL**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	18-9187-0962	18-9187-0962	03 Apr-06 1:12 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	10.74%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0	1.85955	0.5000	0.15162	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0	0	1	0.00	1.00000	Non-Significant Effect
Error	0.1329581	0.01662	8			
Total	0.13295805	0.0166198	9			

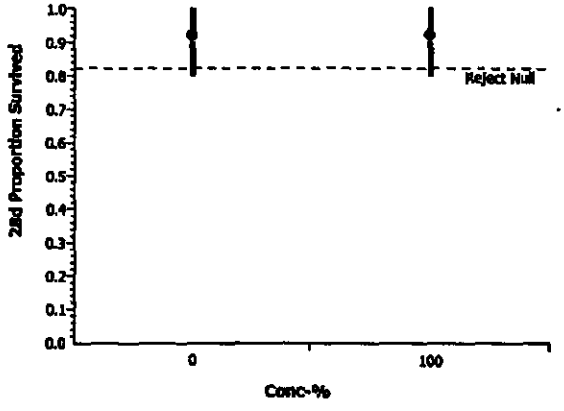
ANOVA Assumptions

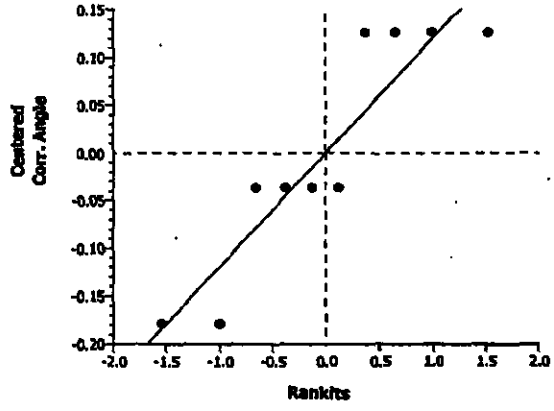
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.00000	23.15450	1.00000	Equal Variances
Distribution	Shapiro-Wilk W	0.81976		0.02518	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	18-9187-0962	18-9187-0962	03 Apr-06 1:13 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	36.04%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-1.5664	1.85955	0.9221	0.05584	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0055303	0.005530	1	2.45	0.15589	Non-Significant Effect
Error	0.0180316	0.002254	8			
Total	0.02356195	0.0077843	9			

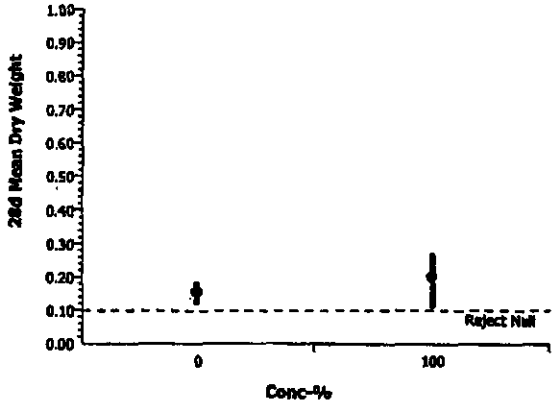
ANOVA Assumptions

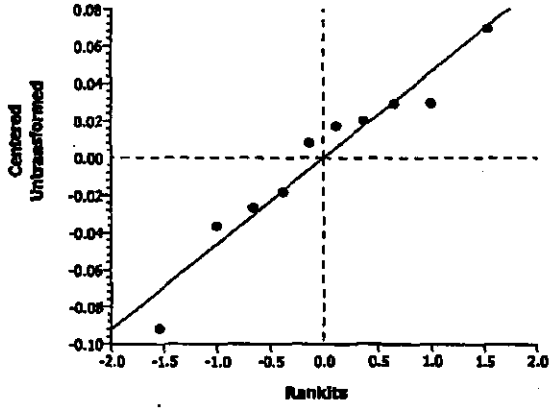
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	5.32300	23.15450	0.13425	Equal Variances
Distribution	Shapiro-Wilk W	0.94981		0.66628	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.20196	0.11000	0.27100	0.06160				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:21 PM
Test Link: 07-9636-6499/B153816hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	06-7076-9416	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	08-4620-2188	**Code:**	B1538-16	**Client:**	
Sample Date:	13 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	16 Feb-06	**Source:**	Hanford		
Sample Age:	18d 0h	**Station:**			

Comments: J11750

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
06-0854-1968	28d Mean Dry Weight	100	> 100	N/A	16.48%	Equal Variance t Two-Sample
19-4920-7982	28d Proportion Survived	100	> 100	N/A	9.00%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
19-4920-7982	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.26629	0.24900	0.28333	0.00678	0.01516	5.69%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.96000	0.90000	1.00000	0.02449	0.05477	5.71%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.26111	0.28333	0.24900	0.28100	0.25700

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.90000	0.90000	1.00000	1.00000	1.00000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	07-9636-6499	07-9636-6499	03 Apr-06 1:21 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	9.00%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-0.8695	1.85955	0.7950	0.13040	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0092944	0.009294	1	0.76	0.40990	Non-Significant Effect
Error	0.0983502	0.012294	8			
Total	0.10764464	0.0215882	9			

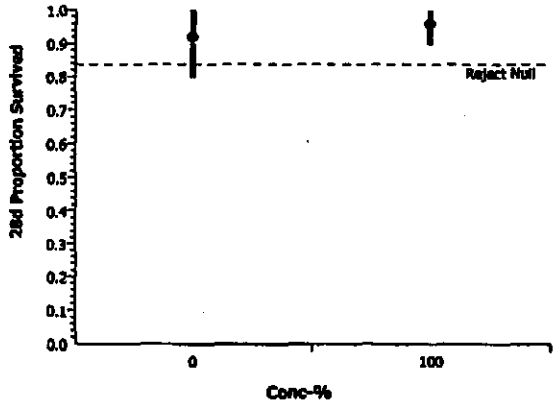
ANOVA Assumptions

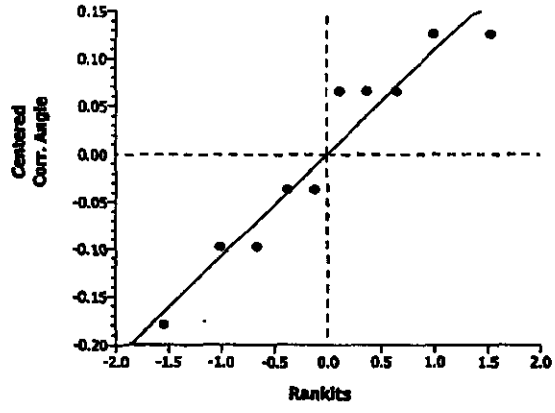
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.08587	23.15450	0.49396	Equal Variances
Distribution	Shapiro-Wilk W	0.91585		0.32364	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.96000	0.90000	1.00000	0.05477	1.34683	1.24905	1.41202	0.08926

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	07-9636-6499	07-9636-6499	03 Apr-06 1:21 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	16.48%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-8.1103	1.85955	1.0000	0.02553	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0310032	0.031003	1	65.78	0.00004	Significant Effect
Error	0.0037707	0.000471	8			
Total	0.03477391	0.0314746	9			

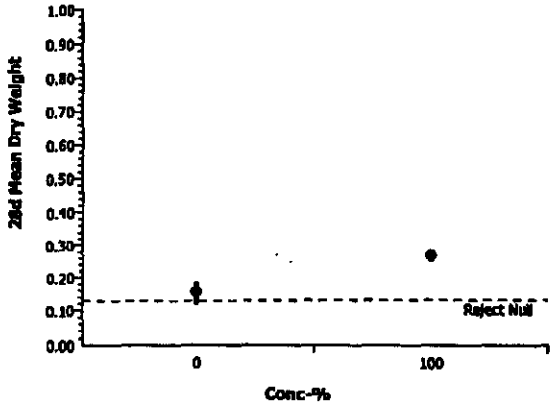
ANOVA Assumptions

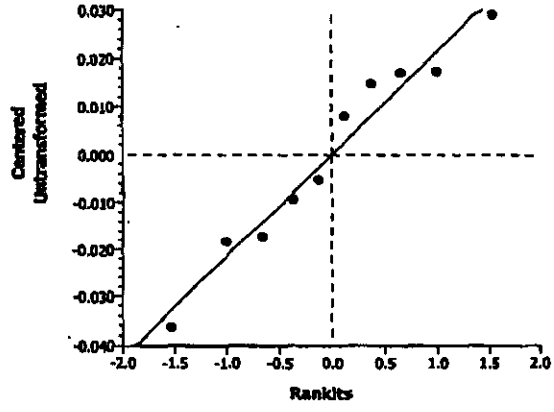
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.10335	23.15450	0.29845	Equal Variances
Distribution	Shapiro-Wilk W	0.95375		0.71294	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.26629	0.24900	0.28333	0.01516				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:23 PM
Test Link: 15-5218-8115/B153617hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	07-9913-7686	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	04-9993-8635	**Code:**	B1538-17	**Client:**	
Sample Date:	13 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	16 Feb-06	**Source:**	Hanford		
Sample Age:	18d 0h	**Station:**			

Comments: J11751

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
03-9229-7789	28d Mean Dry Weight	100	> 100	N/A	24.68%	Equal Variance t Two-Sample
12-1201-2816	28d Proportion Survived	100	> 100	N/A	16.20%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
12-1201-2816	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.27166	0.23700	0.32500	0.01674	0.03742	13.78%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.86000	0.60000	1.00000	0.07483	0.16733	19.46%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.29100	0.32500	0.26778	0.23700	0.23750

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		1.00000	0.60000	0.90000	1.00000	0.80000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	15-5218-8115	15-5218-8115	03 Apr-06 1:23 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	16.20%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.63056	1.85955	0.2730	0.21408	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0131746	0.013175	1	0.40	0.54591	Non-Significant Effect
Error	0.2650759	0.033134	8			
Total	0.27825049	0.0463091	9			

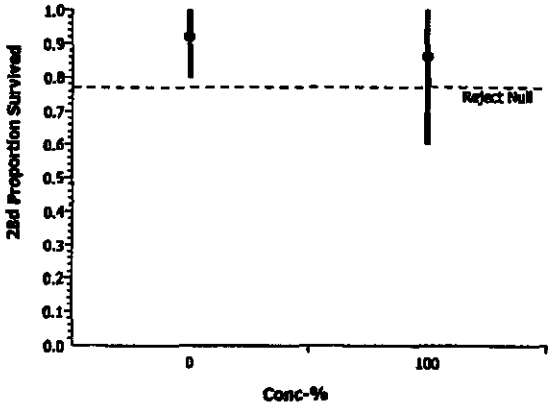
ANOVA Assumptions

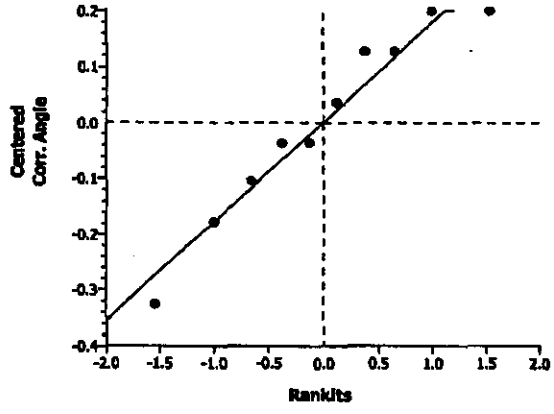
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.98736	23.15450	0.31428	Equal Variances
Distribution	Shapiro-Wilk W	0.93793		0.53025	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.86000	0.60000	1.00000	0.16733	1.21326	0.88608	1.41202	0.22282

Graphics





CETIS Analysis Detail

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	15-5218-8115	15-5218-8115	03 Apr-06 1:23 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	24.68%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-5.6774	1.85955	0.9998	0.03823	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0340634	0.034063	1	32.23	0.00047	Significant Effect
Error	0.0084542	0.001057	8			
Total	0.04251765	0.0351202	9			

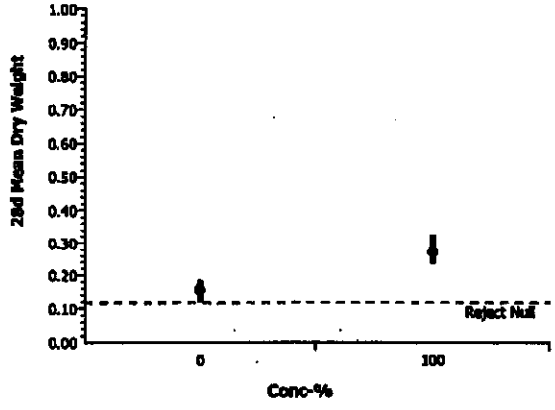
ANOVA Assumptions

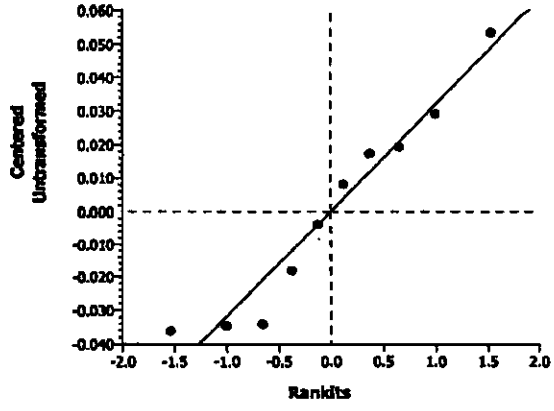
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.96457	23.15450	0.52917	Equal Variances
Distribution	Shapiro-Wilk W	0.92931		0.44111	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.27166	0.23700	0.32500	0.03742				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:24 PM
Test Link: 16-4806-3689/B153818hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	00-8319-1240	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	10-7892-3159	**Code:**	B1538-18	**Client:**	
Sample Date:	13 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	16 Feb-06	**Source:**	Hanford		
Sample Age:	18d 0h	**Station:**			

Comments: J11753

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
08-1993-6975	28d Mean Dry Weight	100	> 100	N/A	30.32%	Equal Variance t Two-Sample
13-8643-8444	28d Proportion Survived	100	> 100	N/A	21.63%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
13-8643-8444	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.19787	0.14600	0.27000	0.02226	0.04979	25.16%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.76000	0.40000	1.00000	0.11225	0.25100	33.03%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.22000	0.27000	0.14600	0.15889	0.19444

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.60000	0.40000	1.00000	0.90000	0.90000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	16-4806-3689	16-4806-3689	03 Apr-06 1:24 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	21.63%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	1.299	1.85955	0.1151	0.27152	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0899403	0.089940	1	1.69	0.23013	Non-Significant Effect
Error	0.4264106	0.053301	8			
Total	0.51635087	0.1432416	9			

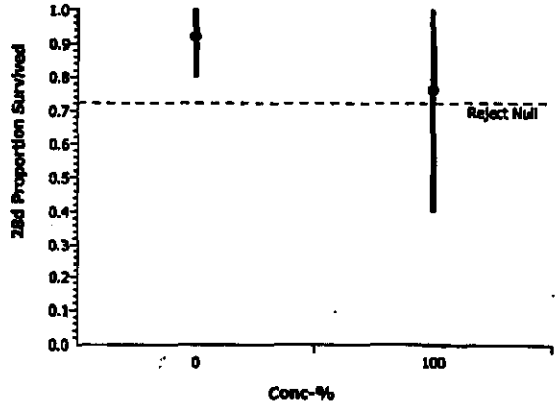
ANOVA Assumptions

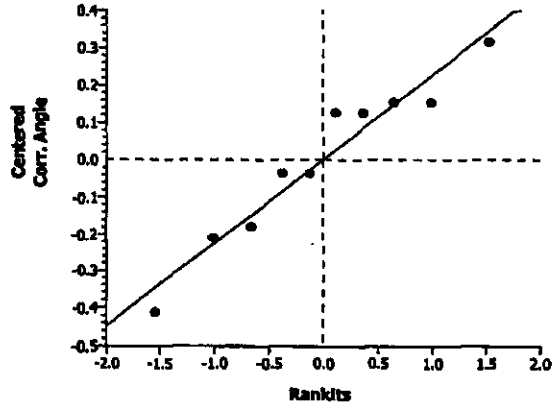
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	5.41421	23.15450	0.13068	Equal Variances
Distribution	Shapiro-Wilk W	0.94349		0.59249	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.76000	0.40000	1.00000	0.25100	1.09618	0.68472	1.41202	0.29997

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	16-4806-3689	16-4806-3689	03 Apr-06 1:24 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	30.32%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-1.6996	1.85955	0.9362	0.04698	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0046094	0.004609	1	2.89	0.12764	Non-Significant Effect
Error	0.0127660	0.001596	8			
Total	0.01737537	0.0062051	9			

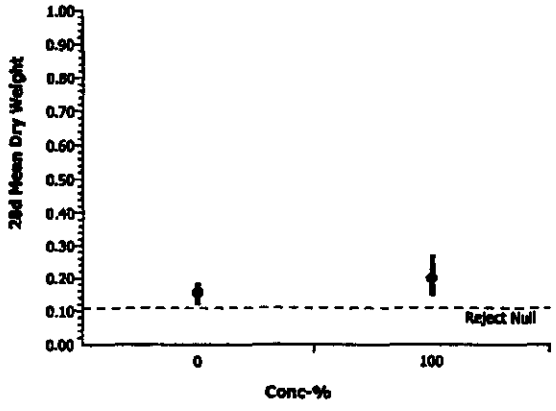
ANOVA Assumptions

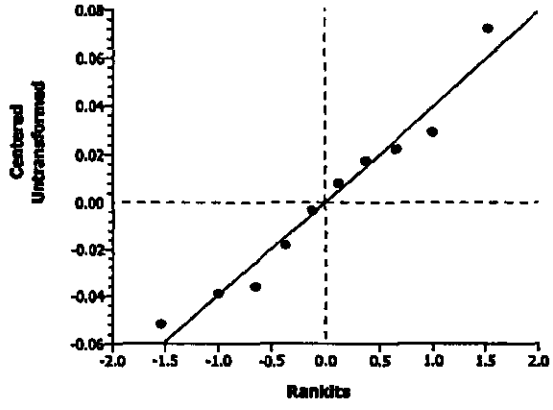
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.47655	23.15450	0.25482	Equal Variances
Distribution	Shapiro-Wilk W	0.96258		0.81487	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.19787	0.14600	0.27000	0.04979				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:26 PM
Test Link: 04-6974-1088/B153819hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	11-0180-6207	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	09-0498-8214	**Code:**	B1538-19	**Client:**	
Sample Date:	19 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	22 Feb-06	**Source:**	Hanford		
Sample Age:	12d 0h	**Station:**			

Comments: J11746

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
05-9913-7511	28d Mean Dry Weight	100	> 100	N/A	24.10%	Equal Variance t Two-Sample
14-7521-2699	28d Proportion Survived	100	> 100	N/A	17.47%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
14-7521-2699	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.24888	0.20667	0.28900	0.01614	0.03609	14.50%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.84000	0.60000	1.00000	0.08124	0.18166	21.63%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.23000	0.28429	0.20667	0.28900	0.23444

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		1.00000	0.70000	0.60000	1.00000	0.90000

CETIS Analysis Detail

Hyalleia 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	04-6974-1088	04-6974-1088	03 Apr-06 1:26 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	17.47%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.78155	1.85955	0.2285	0.22792	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0229403	0.022940	1	0.61	0.45699	Non-Significant Effect
Error	0.3004555	0.037557	8			
Total	0.32339588	0.0604973	9			

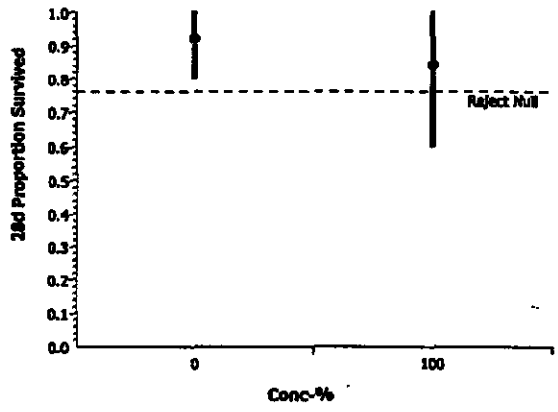
ANOVA Assumptions

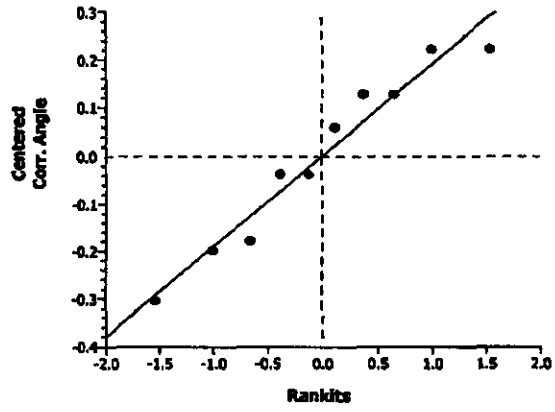
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.51955	23.15450	0.25041	Equal Variances
Distribution	Shapiro-Wilk W	0.93276		0.47556	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.84000	0.60000	1.00000	0.18166	1.19006	0.88608	1.41202	0.24186

Graphics





CETIS Analysis Detail

Hyalleia 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	04-6974-1088	04-6974-1088	03 Apr-06 1:26 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	24.10%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-4.6796	1.85955	0.9992	0.03733	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0220673	0.022067	1	21.90	0.00158	Significant Effect
Error	0.0080617	0.001008	8			
Total	0.03012899	0.023075	9			

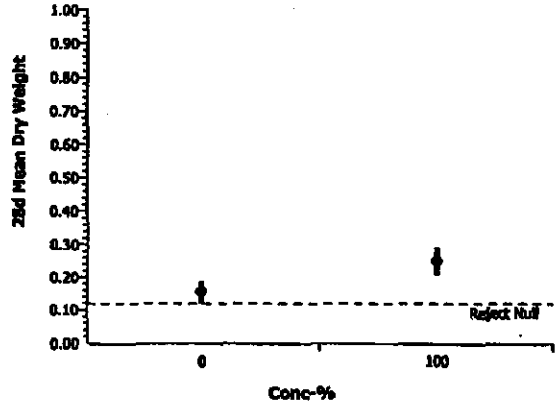
ANOVA Assumptions

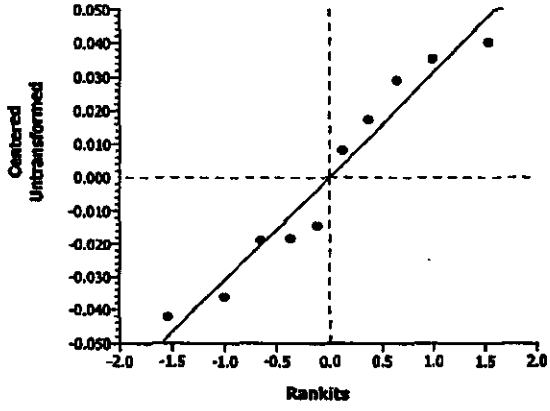
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.82694	23.15450	0.57373	Equal Variances
Distribution	Shapiro-Wilk W	0.92450		0.39606	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.24888	0.20667	0.28900	0.03609				

Graphics





CETIS Test Summary

Report Date: 03 Apr-06 1:27 PM
Test Link: 12-5478-1561/B153820hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	08-0778-1926	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	03 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	31 Mar-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	03 Mar-06 12:00 AM	**Brine:**			

Sample No:	09-6338-6368	**Code:**	B1538-20	**Client:**	
Sample Date:	19 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:	22 Feb-06	**Source:**	Hanford		
Sample Age:	12d 0h	**Station:**			

Comments: J11747

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
11-4178-9063	28d Mean Dry Weight	100	> 100	N/A	29.36%	Equal Variance t Two-Sample
17-8598-7966	28d Proportion Survived	100	> 100	N/A	16.55%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
17-8598-7966	28d Proportion Survived	Control Response	0.92	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.15493	0.11875	0.18400	0.01194	0.02670	17.23%
100		5	0.23736	0.19700	0.31333	0.02135	0.04773	20.11%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Control Sed	5	0.92000	0.80000	1.00000	0.03742	0.08367	9.09%
100		5	0.90000	0.60000	1.00000	0.07746	0.17321	19.25%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	0.16300	0.17222	0.13667	0.18400	0.11875
100		0.31333	0.25444	0.20700	0.21500	0.19700

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Control Sed	1.00000	0.90000	0.90000	1.00000	0.80000
100		0.60000	0.90000	1.00000	1.00000	1.00000

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	12-5478-1561	12-5478-1561	03 Apr-06 1:27 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	16.55%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	0.09915	1.85955	0.4617	0.21794	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0003376	0.000338	1	0.01	0.92346	Non-Significant Effect
Error	0.274731	0.034341	8			
Total	0.27506853	0.0346789	9			

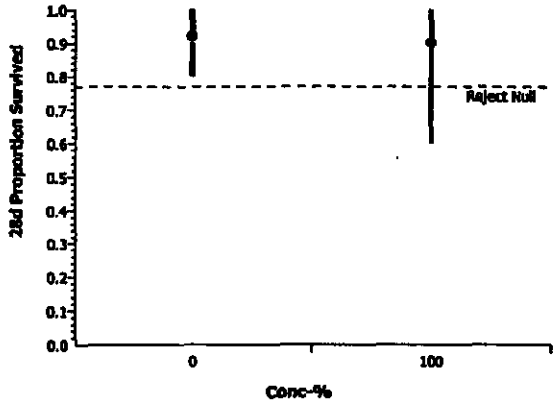
ANOVA Assumptions

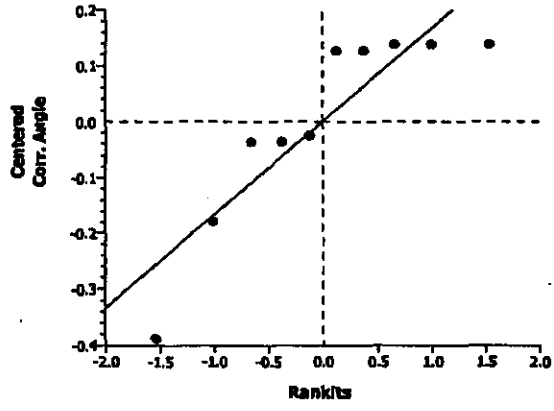
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.13260	23.15450	0.29465	Equal Variances
Distribution	Shapiro-Wilk W	0.80186		0.01527	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.92000	0.80000	1.00000	0.08367	1.28585	1.10715	1.41202	0.12892
100		5	0.90000	0.60000	1.00000	0.17321	1.27423	0.88608	1.41202	0.22817

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M HILL

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	12-5478-1561	12-5478-1561	03 Apr-06 1:27 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	29.36%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Control Sed		100	-3.3699	1.85955	0.9951	0.04549	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0169859	0.016986	1	11.36	0.00979	Significant Effect
Error	0.0119662	0.001496	8			
Total	0.02895204	0.0184816	9			

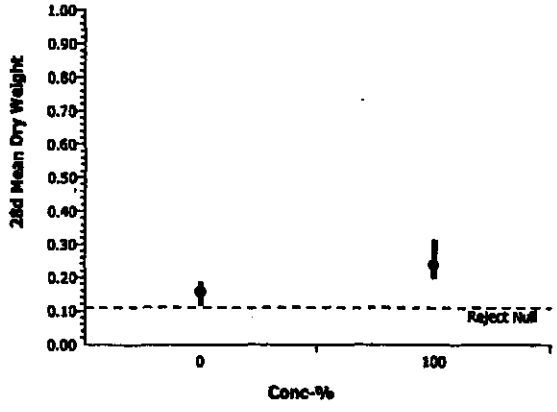
ANOVA Assumptions

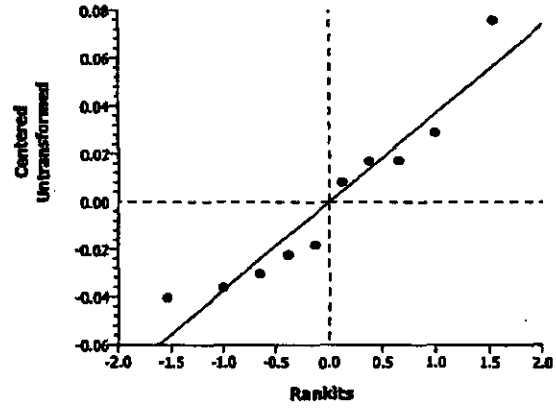
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.19609	23.15450	0.28663	Equal Variances
Distribution	Shapiro-Wilk W	0.90945		0.27726	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Control Sed	5	0.15493	0.11875	0.18400	0.02670				
100		5	0.23736	0.19700	0.31333	0.04773				

Graphics





RANDOMIZATION SHEET

Client: W C Hanford **Test Start Date:** 3/7/2006 10

Laboratory ID:	Field ID:	Alternate ID:	Replicate ID:	Random Number	Test Chamber Number:
B1538-21	J11748	0	A	0.77722	120
B1538-21	J11748	0	B	0.80534	115
B1538-21	J11748	0	C	0.41510	153
B1538-21	J11748	0	D	0.66210	130
B1538-21	J11748	0	E	0.33968	162
B1538-22	J11749	0	A	0.11991	187
B1538-22	J11749	0	B	0.36409	159
B1538-22	J11749	0	C	0.14229	184
B1538-22	J11749	0	D	0.15949	178
B1538-22	J11749	0	E	0.67897	128
B1538-23	J112B3	0	A	0.67932	127
B1538-23	J112B3	0	B	0.14433	183
B1538-23	J112B3	0	C	0.77898	119
B1538-23	J112B3	0	D	0.26711	168
B1538-23	J112B3	0	E	0.38976	156
B1538-24	J112B4	0	A	0.15170	180
B1538-24	J112B4	0	B	0.21992	170
B1538-24	J112B4	0	C	0.04799	192
B1538-24	J112B4	0	D	0.29347	165
B1538-24	J112B4	0	E	0.18419	176
B1538-25	J112B5	0	A	0.44745	150
B1538-25	J112B5	0	B	0.60233	135
B1538-25	J112B5	0	C	0.68737	126
B1538-25	J112B5	0	D	0.86170	112
B1538-25	J112B5	0	E	0.60213	136
B1538-26	J112B6	0	A	0.03887	193
B1538-26	J112B6	0	B	0.53073	144
B1538-26	J112B6	0	C	0.18627	174
B1538-26	J112B6	0	D	0.26793	167
B1538-26	J112B6	0	E	0.57665	139
B1538-27	J116M6	0	A	0.14200	185
B1538-27	J116M6	0	B	0.18534	175
B1538-27	J116M6	0	C	0.21883	171
B1538-27	J116M6	0	D	0.65459	131
B1538-27	J116M6	0	E	0.15121	181
B1538-28	J116M7	0	A	0.02412	194
B1538-28	J116M7	0	B	0.29740	164
B1538-28	J116M7	0	C	0.15401	179
B1538-28	J116M7	0	D	0.37924	157
B1538-28	J116M7	0	E	0.78017	118
B1538-29	J11734	0	A	0.52356	145
B1538-29	J11734	0	B	0.20426	173
B1538-29	J11734	0	C	0.12353	186
B1538-29	J11734	0	D	0.16117	177
B1538-29	J11734	0	E	0.72065	123
B1538-30	J116X2	0	A	0.43347	151
B1538-30	J116X2	0	B	0.21529	172
B1538-30	J116X2	0	C	0.34574	161
B1538-30	J116X2	0	D	0.36633	158
B1538-30	J116X2	0	E	0.78884	117

RANDOMIZATION SHEET

Client: W C Hanford **Test Start Date:** 3/~~7~~10/2006

Laboratory ID:	Field ID:	Alternate ID:	Replicate ID:	Random Number	Test Chamber Number:
B1538-31	J116W9	0	A	0.28754	166
B1538-31	J116W9	0	B	0.63973	132
B1538-31	J116W9	0	C	0.99013	107
B1538-31	J116W9	0	D	0.81927	113
B1538-31	J116W9	0	E	0.40286	154
B1538-32	J116X0	0	A	0.91056	111
B1538-32	J116X0	0	B	0.91093	110
B1538-32	J116X0	0	C	0.01986	195
B1538-32	J116X0	0	D	0.56546	141
B1538-32	J116X0	0	E	0.48624	148
B1538-33	J116X1	0	A	0.71173	124
B1538-33	J116X1	0	B	0.22590	169
B1538-33	J116X1	0	C	0.56171	142
B1538-33	J116X1	0	D	0.48425	149
B1538-33	J116X1	0	E	0.99508	106
B1538-34	J116X3	0	A	0.62470	133
B1538-34	J116X3	0	B	0.51133	146
B1538-34	J116X3	0	C	0.76548	121
B1538-34	J116X3	0	D	0.54237	143
B1538-34	J116X3	0	E	0.58468	138
B1538-35	J116X6	0	A	0.80880	114
B1538-35	J116X6	0	B	0.80234	116
B1538-35	J116X6	0	C	0.66472	129
B1538-35	J116X6	0	D	0.31860	163
B1538-35	J116X6	0	E	0.07865	189
B1538-36	J116W7	0	A	0.75143	122
B1538-36	J116W7	0	B	0.14785	182
B1538-36	J116W7	0	C	0.05140	191
B1538-36	J116W7	0	D	0.50906	147
B1538-36	J116W7	0	E	0.61211	134
B1538-37	J116W8	0	A	0.07126	190
B1538-37	J116W8	0	B	0.94188	108
B1538-37	J116W8	0	C	0.41682	152
B1538-37	J116W8	0	D	0.08615	188
B1538-37	J116W8	0	E	0.39196	155
Sediment Control	Beaver Creek	Control	A	0.36170	160
Sediment Control	Beaver Creek	Control	B	0.57601	140
Sediment Control	Beaver Creek	Control	C	0.59855	137
Sediment Control	Beaver Creek	Control	D	0.92017	109
Sediment Control	Beaver Creek	Control	E	0.68871	125

TITRATION AND AMMONIA DATA

Client: Washington Closure Hanford — Species ID#: AMP 57

Sample Description: See Randomization Sheet. — Start Date: March 10, 2006

Laboratory ID	Hardness (mg/L as $CaCO_3$)		Alkalinity (mg/L as $CaCO_3$)		Ammonia (mg/L as NH_3-N)	
	Initial	Final	Initial	Final	Initial	Final
Sediment Control	86	110	68	76	0.21	0.22
B1538-21	92	106	68	74	0.29	0.07
B1538-22	104	114	78	82	0.10	0.04
B1538-23	98	112	70	74	0.11	0.12
B1538-24	98	116	72	74	0.10	0.09
B1538-25	104	110	78	78	0.10	0.12
B1538-26	108	104	84	80	0.10	0.08
B1538-27	98	108	76	86	0.16	0.14
B1538-28	114	118	80	84	0.10	0.09
B1538-29	104	104	84	78	0.10	0.13
B1538-30	110	110	80	80	0.14	0.28
B1538-31	106	108	76	80	0.21	0.09
B1538-32	108	102	80	82	0.13	0.16
B1538-33	106	104	82	78	~~0.11~~ 0.13	0.18
B1538-34	102	116	74	76	0.12	0.09
B1538-35	134	112	110	~~78~~ 80MS	0.29	0.63
B1538-36	104	108	80	78	0.13	0.09
B1538-37	104	104	80	78	0.11	0.16

Client: Washington Closure Hanford

Sample Description: See Cross Reference Sheet batch Number B

Test Species: Hyallela azteca

ID#: Amp 57

Beginning, Date: 3-10-06 Time: 1110

Ending, Date: 4-7-06 Time: 1200

	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9
AM change: Tech.	Bm	(illegible)	(illegible)	MS	MS	DW	DW	DW	(illegible)	(illegible)
Time	0730	0700	0705	0740	0700	0645	0710	0700	0700	0650
PM change: Tech.	Bm	(illegible)	(illegible)	NJ	Bm	Bm	Bm	Bm	MN	MN
Time	1745	1780	1810	1650	1750	1745	1710	1720	1840	1745
Feeding: ✓ when done	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Beaker Number	Dissolved Oxygen (mg/l) 0	1	2	3	4	5	6	7	8	9	Temperature (°C) 0	1	2	3	4	5	6	7	8	9	pH 0	3	6	9	Conductivity (µmohs/cm) 0	7
111	7.7			7.4			7.7			7.8	23.6	22.6	21.9	23.6	23.6	22.7	23.6	22.6	22.6	22.9	7.2	7.2	7.2	6.9	293	294
114	6.5			6.3			6.8			6.9	23.2	22.4	21.9	23.7	23.6	22.4	23.5	22.9	22.9	22.9	7.1	7.3	7.1	6.8	325	316
120	8.1			7.4			7.4			7.5	23.5	22.5	22.0	23.7	23.9	22.3	23.8	22.5	23.0	23.3	7.4	7.4	7.3	7.1	289	284
122	7.7			7.6			7.4			7.2	23.3	22.1	22.1	24.0	23.9	22.4	24.1	22.6	23.4	22.8	7.4	7.4	7.3	7.1	298	292
124	7.7			7.3			7.4			7.2	23.5	22.0	21.9	23.9	24.0	22.4	23.6	22.8	23.2	23.3	7.2	7.3	7.2	7.0	297	299
127	7.9			7.6			7.4			7.2	23.2	22.4	21.8	23.8	23.9	22.5	23.7	23.0	23.4	23.3	7.3	7.3	7.3	7.1	291	284
133	7.9			7.5			7.4			7.2	23.5	21.9	22.0	23.7	23.9	22.3	23.5	22.6	23.4	23.2	7.6	7.4	7.3	7.2	296	286
145	8.0			7.5			7.3			7.2	23.5	21.9	22.4	23.6	24.0	22.5	23.8	22.7	23.5	23.7	7.7	7.4	7.3	7.1	280	299
150	7.9			7.6			7.5			7.5	23.5	21.5	22.1	23.9	24.1	22.4	24.0	22.6	23.4	23.7	7.8	7.5	7.5	7.3	279	303
151	7.6			7.2			7.2			7.3	23.7	22.0	21.7	23.4	24.0	22.4	24.1	22.9	23.4	23.4	7.2	7.4	7.2	7.1	295	295
160	7.6			7.2			7.1			7.2	23.4	21.6	21.4	23.4	24.2	22.5	23.8	23.0	23.5	23.8	7.5	7.4	7.4	7.3	366	324
166	8.0			7.5			7.4			7.5	23.9	22.4	21.5	23.7	24.1	22.6	24.1	23.3	23.6	23.5	7.7	7.4	7.4	7.3	299	287
180	7.9			7.5			7.3			7.5	23.7	22.0	21.6	24.0	24.1	22.5	24.1	22.9	23.5	23.8	7.4	7.3	7.3	7.2	288	281
185	7.8			7.3			7.1			7.2	23.7	21.7	21.6	24.1	24.0	22.7	24.0	23.2	23.5	23.7	7.2	7.2	7.3	7.1	307	297
187	7.7			7.0			7.2			7.3	23.9	21.9	22.0	24.0	24.3	22.4	23.9	23.4	23.5	23.6	7.5	7.3	7.3	7.2	316	298
190	7.8			6.9			7.1			7.1	23.8	22.0	22.1	24.0	24.1	22.6	24.1	23.2	23.4	23.4	7.5	7.3	7.3	7.2	297	291
193	7.6			7.4			7.1			7.1	23.9	22.1	22.1	24.2	24.1	22.6	24.0	23.5	23.3	23.4	7.6	7.4	7.4	7.3	307	302
194	7.8			7.3			7.2			7.3	23.8	22.1	21.7	24.1	24.2	22.6	23.7	23.0	23.3	23.5	7.7	7.3	7.5	7.3	296	300

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client _____

Sample Description See Cross Reference Sheet batch Number B

Test Species: Hyallela azteca

ID#: Amp 57

Beginning, Date 3-10-06 Time 1110

Ending, Date 4-7-06 Time 1200

	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19
AM change: Tech.	MS	DW	DW	MS	MS/DW	[illegible]	[illegible]	MS	MS/[illegible]	[illegible]
Time	0640	0700	0700	0700	0700	0710	0700	0700	0700	0700
PM change: Tech.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NJ	[illegible]	NJ
Time	1715	1700	1650	1655	1725	1725	1720	1640	1700	1640
Feeding: ✓ when done	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Beaker Number	Dissolved Oxygen (mg/l) 10	11	12	13	14	15	16	17	18	19	Temperature (°C) 10	11	12	13	14	15	16	17	18	19	pH 12	15	18	19	Conductivity (µmohs/cm) 14
111			7.4			6.8			5.9		22.8	22.6	23.2	23.4	22.8	23.0	22.9	23.2	23.5	23.6	7.2	7.3	7.0		320
114			7.4			5.3			6.2		23.0	22.5	23.0	23.3	23.2	23.1	23.0	23.3	23.7	23.8	7.0	7.0	7.0		340
120			7.5			6.0			6.5		22.8	22.4	23.0	23.4	23.6	22.9	23.0	23.2	23.5	24.0	7.1	7.1	7.2		318
122			7.4			6.1			6.0		23.0	22.7	23.3	23.4	23.6	22.9	22.7	23.4	23.8	23.8	7.1	7.2	7.0		334
124			7.3			6.3			6.2		22.8	22.7	23.2	23.5	23.5	23.7	22.9	23.6	23.7	24.0	7.1	7.1	7.1		335
127			7.5			5.9			6.2		23.0	22.7	23.5	23.6	23.7	23.2	23.2	23.7	23.8	23.9	7.2	7.2	7.1		320
133			7.5			6.2			7.0		23.0	23.1	23.4	23.7	23.8	23.0	23.1	23.8	24.0	24.0	7.3	7.3	7.2		319
145			7.4			6.7			7.1		23.1	22.9	23.5	23.2	23.6	22.7	22.8	23.9	24.0	24.0	7.2	7.2	7.2		331
150			7.4			6.0			7.1		22.6	22.8	23.2	23.4	23.8	22.9	22.6	24.0	23.8	24.0	7.5	7.5	7.3		348
151			7.3			6.3			4.9		22.7	22.6	23.4	23.5	23.6	22.6	23.4	23.8	24.0	23.9	6.9	6.9	7.0		333
160			7.4			5.0			6.3		22.8	22.7	23.4	23.6	23.8	23.0	23.1	23.9	23.9	24.0	7.6	7.5	7.5		352
166			7.5			5.8			6.7		23.0	23.0	23.7	23.4	23.5	23.4	23.3	23.8	24.0	24.0	7.3	7.3	7.3		323
180			7.4			6.2			6.7		22.9	22.5	23.8	23.2	23.7	23.4	23.1	23.8	24.0	24.0	7.2	7.2	7.2		328
185			7.4			6.4			5.8		23.2	23.1	24.0	23.9	23.8	23.2	23.4	23.7	23.9	23.9	7.1	7.0	7.0		333
187			7.5			6.0			6.2		23.4	22.9	24.1	24.0	23.6	23.6	22.9	24.1	24.0	24.0	7.2	7.2	7.2		344
190			7.2			6.2			6.4		23.3	22.8	23.6	23.8	23.5	23.9	22.9	24.2	23.9	24.0	7.5	7.4	7.3		331
193			7.4			6.0			6.2		22.9	23.0	24.0	23.9	23.8	23.4	23.0	24.3	24.0	24.0	7.4	7.3	7.2		336
194			7.4			6.0			6.0		22.9	23.4	24.3	23.9	23.9	23.1	23.0	24.0	24.1	24.0	7.4	7.3	7.3		337

Client _____

Sample Description: See Cross Reference Sheet batch Number B

Test Species: Hyallela azteca

ID#: 57

Amp _____

Beginning, Date 3-10-06 Time 1110

Ending, Date 4-7-06 Time 1200

AM change: Tech.	Day 20 MS	Day 21 [illegible]	Day 22 [illegible]	Day 23 [illegible]	Day 24 MS	Day 25 MS	Day 26 DW	Day 27 DW	Day 28 DW
Time	Day 20 0730	Day 21 0700	Day 22 0700	Day 23 0745	Day 24 0620	Day 25 0630	Day 26 0700	Day 27 0700	Day 28 0700
PM change: Tech.	Day 20 [illegible]	Day 21 [illegible]	Day 22 NJ	Day 23 NJ	Day 24 [illegible]	Day 25 NJ	Day 26 NJ	Day 27 NJ	
Time	Day 20 1715	Day 21 1710	Day 22 1655	Day 23 1645	Day 24 1645	Day 25 1615	Day 26 1620	Day 27 1635	
Feeding: ✓ when done	Day 20 ✓	Day 21 ✓	Day 22 ✓	Day 23 ✓	Day 24 ✓	Day 25 ✓	Day 26 ✓	Day 27 ✓	

Beaker Number	Dissolved Oxygen (mg/l)										Temperature (°C)										pH				Conductivity (µmohs/cm)	
	20	21	22	23	24	25	26	27	28		20	21	22	23	24	25	26	27	28		21	24	26	28	21	28
111		5.9			6.3		6.8		6.9		23.8	23.8	22.7	22.9	23.2	23.1	23.3	22.7	23.3		7.0	7.0	6.8	7.0	329	328
114		6.1			6.7		6.0		5.2		23.7	23.4	22.5	22.6	23.1	23.2	23.1	22.6	23.1		7.1	7.0	6.6	6.6	334	344
120		6.0			7.0		7.2		7.1		23.8	23.4	22.6	22.8	22.9	23.0	23.4	22.7	23.1		7.1	7.2	7.0	7.0	332	326
122		6.1			6.4		6.9		7.0		23.6	23.7	22.6	22.9	23.2	23.2	23.1	22.5	23.2		7.4	7.3	7.0	7.0	339	331
124		6.0			7.0		6.1		5.3		24.0	23.8	22.7	22.8	23.1	23.3	23.2	22.6	23.1		6.9	7.0	6.8	6.9	330	325
127		5.7			6.8		7.0		6.8		23.8	23.7	22.7	22.9	23.2	23.4	23.2	22.8	23.0		6.5	7.1	6.9	7.0	325	325
133		5.6			6.8		7.2		7.0		23.6	23.9	22.9	23.1	23.4	23.1	23.0	22.7	22.9		7.0	7.3	7.1	7.1	340	326
145		6.5			7.0		7.2		7.0		23.7	23.9	23.1	23.2	23.3	23.2	23.2	23.1	23.2		7.0	7.3	7.1	7.2	323	334
150		6.4			7.2		7.1		7.0		23.8	23.8	23.1	23.2	23.4	23.2	23.3	23.0	23.4		7.2	7.4	7.2	7.3	338	337
151		6.4			5.3		5.2		5.1		23.6	23.7	22.7	22.9	23.6	23.1	23.2	22.8	23.2		7.1	6.9	6.7	6.7	332	328
160		6.2			6.5		6.7		6.6		23.9	23.8	23.1	23.2	23.7	23.9	23.0	23.0	23.1		7.2	7.2	7.2	7.2	332	337
166		6.0			6.7		7.0		7.0		23.8	23.8	23.2	23.1	23.5	23.2	23.0	23.1	23.2		7.2	7.2	7.1	7.2	324	326
180		6.7			7.2		7.1		7.0		23.9	23.6	23.2	23.3	23.4	23.1	23.3	23.0	23.4		6.8	7.1	7.0	7.1	324	325
185		4.9			6.0		6.3		6.1		24.0	23.9	23.2	23.3	23.5	23.6	23.1	23.0	23.4		6.7	7.1	6.9	6.9	327	330
187		6.3			6.7		6.7		6.6		24.1	24.0	23.2	23.3	23.4	23.4	23.0	23.1	23.4		6.7	7.3	7.1	7.0	334	339
190		6.3			6.9		6.9		7.0		24.0	24.0	23.2	23.3	23.5	23.6	23.3	22.9	23.2		6.9	7.4	7.0	7.1	324	330
193		5.6			7.0		6.6		6.4		24.0	23.8	23.3	23.4	23.7	23.4	23.1	23.0	23.2		7.1	7.3	7.0	7.1	341	338
194		6.0			7.0		6.5		6.6		24.1	24.0	23.3	23.4	23.6	23.1	23.1	23.2	23.4		7.0	7.4	7.1	7.1	335	333

CH2M HILL **FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA**

Client _____ Beginning, Date 3-10-06 Time 1110

Sample Description see randomization sheet. Batch number: B Ending, Date 4-7-06 Time 0730

Test Species: Hyallela azteca ID#: AMP 57

Test Initiation: Tech: Tech: BW Time: 1110 Test Termination: Tech: Tech: DW Time: 0730

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
106	10	10	0	
107	10	0	0	
108	10	10	0	
109	10	10	0	
110	10	10	0	
111	10	10	0	
112	10	0	0	
113	10	0	0	
114	10	7	2	
115	10	0	0	
116	10	9	0	
117	10	9	0	
118	10	0	0	
119	10	7	0	
120	10	0	0	

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
121	10	10	0	
122	10	10	0	
123	10	3	0	
124	10	10	0	
125	10	10	0	
126	10	0	0	
127	10	3	0	
128	10	9	0	
129	10	9	0	
130	10	0	0	
131	10	0	0	
132	10	1	0	
133	10	7	1	
134	10	9	0	
135	10	0	0	

DAY Ø TARE WT: 1.15305 g (3-10-06 BW)

wt. w/20 organisms: 1.15491 g (3-13-06 BW) = 0.093 mg/organism @ initiation

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client _____

Sample Description see randomization sheet. Batch number: B

Test Species: Hyallela azteca ID#: AMP 57

Beginning, Date 2-10-06 Time 1110

Ending, Date 4-7-06 Time 0730

Test Initiation: Tech: Tech: BW Time: 1110

Test Termination: Tech: Tech: MS Time: 0730

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
136	10	0	1	
137	10	10	0	
138	10	10	0	
139	10	1	0	
140	10	10	0	
141	10	10	0	
142	10	9	0	
143	10	5	0	
144	10	0	0	
145	10	3	2	look poor body shape
146	10	10	0	
147	10	9	0	
148	10	10	0	
149	10	9	0	
150	10	0	0	

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
151	10	8 BW	0	
152	10	10	0	
153	10	0	0	
154	10	2	0	
155	10	10	0	
156	10	5	1	
157	10	0	0	
158	10	9	0	
159	10	4	2	
160	10	8	0	
161	10	10	0	
162	10	1	0	
163	10	6	0	
164	10	1	0	
165	10	6	0	

CH2M HILL

FRESHWATER TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Client _____

Sample Description see randomization sheet. Batch number: B

Test Species: Hyallela azteca ID#: AMP 57

Beginning, Date 3-10-06 Time 1110

Ending, Date 4-7-06 Time 1200

Test Initiation: Tech: Tech: [illegible] Time: 1110

Test Termination: Tech: Tech: [illegible] Time: 0820-1200

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
166	10	5	0	
167	10	1	1	
168	10	10	0	
169	10	9	0	
170	10	4	0	
171	10	2	1	LOTS of ORGANIC MATTER
172	10	8	0	
173	10	1	0	
174	10	2	0	
175	10	0	0	
176	10	0	0	
177	10	0	0	
178	10	7	0	
179	10	0	0	
180	10	7	0	

Beaker Number	Start Count 0	# alive found 10	# dead found 10	Comments:
181	10	0	0	
182	10	10	0	
183	10	8	0	
184	10	6	0	
185	10	0	0	
186	10	0	0	
187	10	5	0	
188	10	9	0	
189	10	7	0	
190	10	9	0	
191	10	9	0	
192	10	9	0	
193	10	2	0	
194	10	1	1	
195	10	10	0	

Hyallela GROWTH DATA

Client Hanford Species ID# AMP 57

Lab ID: see randomization sheet batch number: B Start Date 3/7/2006

Sample Description:

Technician: BM dw

Date: 4/10/2006 1/18/2006

Tin ID Number	Total Weight (mg) (after 60°C for 24 hr)	Tare Weight (mg) (after 60°C for 24 hr)	No. of Amphipods Surviving	No. of Amphipods in Tin
106	9.28	6.88	10	10
107		6.93	0	0
108	8.84	6.98	10	10
109	8.77	6.87	10	10
110	9.97	6.91	10	10
111	9.06	6.93	10	10
112		6.97	0	0
113		6.89	0	0
114	8.23	6.90	7	7
115		6.99	0	0
116	8.16	6.76	9	9
117	8.41	6.69	9	9
118		6.83	0	0
119	8.01	6.88	7	7
120		6.92	0	0
121	7.83	6.92	10	10
122	9.26	6.87	10	10
123	14.15	13.84	3	3
124	8.59	6.99	10	10
125	8.73	6.85	10	10
126		6.93	0	0
127	7.07	6.80	3	3
128	8.20	6.88	9	9
129	8.52	6.88	9	9
130		6.77	0	0
131	6.75	6.76	0	0
132	6.98	6.88	1	1
133	7.95	6.87	7	7
134	9.18	6.95	9	9
135		6.75	0	0

weigh to 0.01 mg

Hyallela GROWTH DATA

Client Hanford Species ID# AMP 57

Lab ID: see randomization sheet batch number: B Start Date 3/7/2006

Sample Description:

Technician: BM dw

Date: 4/10/2006 1/18/2006

Tin ID Number	Total Weight (mg) (after 60°C for 24 hr)	Tare Weight (mg) (after 60°C for 24 hr)	No. of Amphipods Surviving	No. of Amphipods in Tin
136	6.80	6.79	0	0
137	8.64	6.84	10	10
138	7.97	6.90	10	10
139	6.93	6.84	1	1
140	8.28	6.85	10	10
141	8.78	6.77	10	10
142	8.60	6.97	9	9
143	7.52	6.87	5	5
144	6.82	6.83	0	0
145	7.08	6.88	3	3
146	8.44	6.77	10	10
147	9.36	6.82	9	9
148	8.97	6.93	10	10
149	8.71	6.80	9	9
150	6.83	6.83	0	0
151	8.46	6.91	8	8
152	9.51	6.76	10	10
153		6.89	0	0
154	7.15	6.97	2	2
155	9.61	6.91	10	10
156	7.36	6.87	5	5
157		6.84	0	0
158	8.85	6.66	9	9
159	7.07	6.79	4	4
160	8.51	6.83	8	8
161	9.31	6.90	10	10
162	6.95	6.79	1	1
163	8.18	6.93	6	6
164	6.80	6.72	1	1
165	7.53	6.71	6	6

weigh to 0.01 mg

Hyallela GROWTH DATA

Client: Hanford Species ID#: AMP 57

Lab ID: see randomization sheet batch number: B Start Date: 3/7/2006

Sample Description:

Technician: BM dw

Date: 4/10/2006 1/18/2006

Tin ID Number	Total Weight (mg) (after 60°C for 24 hr)	Tare Weight (mg) (after 60°C for 24 hr)	No. of Amphipods Surviving	No. of Amphipods in Tin
166	7.30	6.89	5	5
167	6.96	6.87	1	1
168	7.88	6.86	10	10
169	8.49	6.74	9	9
170	7.19	6.85	4	4
171	7.10	6.93	2	2
172	8.07	6.73	8	8
173	6.96	6.84	1	1
174	7.01	6.81	2	2
175	6.91	6.91	0	0
176	6.81	6.81	0	0
177	6.89	6.90	0	0
178	7.75	6.83	7	7
179	6.80	6.80	0	0
180	7.78	6.81	7	7
181	6.75	6.75	0	0
182	9.06	6.91	10	10
183	7.66	6.74	8	8
184	7.91	6.81	6	6
185	6.94	6.95	0	0
186	6.76	6.77	0	0
187	7.20	6.82	5	5
188	8.34	6.72	9	9
189	8.60	6.90	7	7
190	9.18	6.85	10	10
191	9.20	6.79	9	9
192	7.65	6.86	9	9
193	7.01	6.84	2	2
194	6.87	6.81	1	1
195	9.97	6.66	10	10

weigh to 0.01 mg

CETIS Test Summary

Report Date: 10 Apr-06 10:53 AM
Test Link: 08-9139-0844/B153821hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	04-4725-7754	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	10-1661-4162	**Code:**	B1538-21	**Client:**	
Sample Date:	19 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	19d 0h	**Station:**			

Comments: J11748

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
10-8334-3390	28d Mean Dry Weight	100	> 100	N/A	31.45%	Equal Variance t Two-Sample
16-4454-8254	28d Proportion Survived	< 100	100	N/A	7.97%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
16-4454-8254	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		1	0.16000	0.16000	0.16000			

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.02000	0.00000	0.10000	0.02000	0.04472	223.61

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000 ✓	0.14300 ✓	0.18000 ✓	0.19000 ✓	0.18800 ✓
100		0.16000 ✓				

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000 ✓	1.00000 ✓	1.00000 ✓	1.00000 ✓	1.00000 ✓
100		0.00000 ✓	0.00000 ✓	0.00000 ✓	0.00000 ✓	0.10000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	08-9139-0844	08-9139-0844	10 Apr-06 10:51 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	7.97%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	16.7731	1.85955	0.0000	0.12857	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	3.362077	3.362077	1	281.34	0.00000	Significant Effect
Error	0.0956028	0.011950	8			
Total	3.45767953	3.3740271	9			

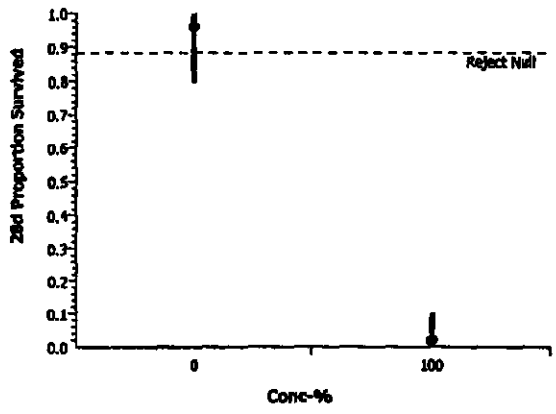
ANOVA Assumptions

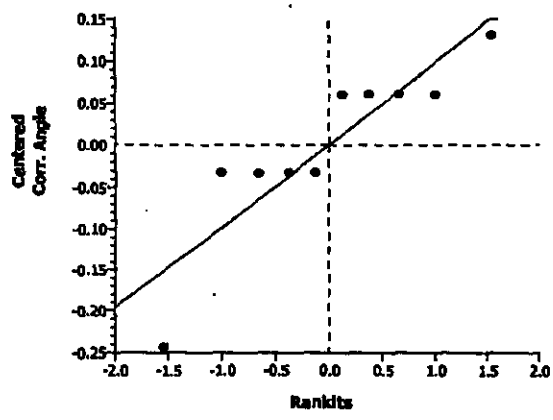
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.49949	23.15450	0.25245	Equal Variances
Distribution	Shapiro-Wilk W	0.82476		0.02893	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.02000	0.00000	0.10000	0.04472	0.19137	0.15878	0.32175	0.07288

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	08-9139-0844	08-9139-0844	10 Apr-06 10:53 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	31.45%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	0.82584	2.13185	0.2277	0.05731	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0004107	0.000411	1	0.68	0.45530	Non-Significant Effect
Error	0.0024088	0.000602	4			
Total	0.00281951	0.0010129	5			

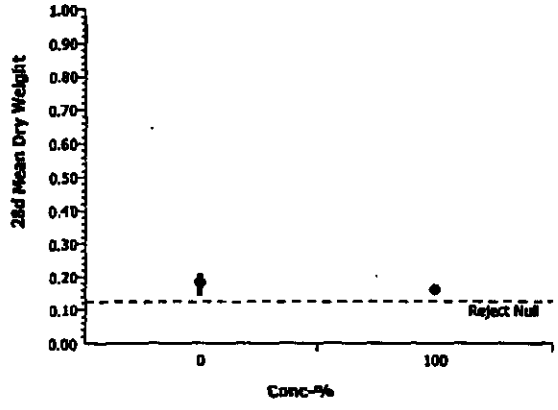
ANOVA Assumptions

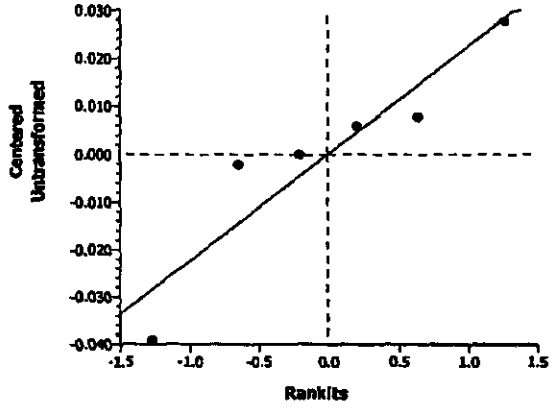
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Distribution	Shapiro-Wilk W	0.89371		0.33811	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		1	0.16000	0.16000	0.16000					

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 10:54 AM
Test Link: 17-7989-8220/B153822hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	08-3505-0742	Test Type:	Hyalella (42d)	Duration:	28d 0h
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalella azteca
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	Brine:			

Sample No:	02-7753-8486	Code:	B1538-22	Client:	
Sample Date:	19 Feb-06	Material:	Sediment	Project:	
Receive Date:		Source:	Hanford		
Sample Age:	19d 0h	Station:			

Comments: J11749

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
02-5049-1522	28d Mean Dry Weight	< 100	100	N/A	24.67%	Equal Variance t Two-Sample
08-8871-0335	28d Proportion Survived	< 100	100	N/A	14.15%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
08-8871-0335	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.12149	0.07000	0.18333	0.02154	0.04816	39.64%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.62000	0.40000	0.90000	0.08602	0.19235	31.02%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.07600	0.07000	0.18333	0.13143	0.14667

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.50000✓	0.40000✓	0.60000✓	0.70000✓	0.90000✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	17-7989-8220	17-7989-8220	10 Apr-06 10:54 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	14.15%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	3.77009	1.85955	0.0027	0.21296	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.4660488	0.466049	1	14.21	0.00546	Significant Effect
Error	0.2623126	0.032789	8			
Total	0.72836134	0.4988378	9			

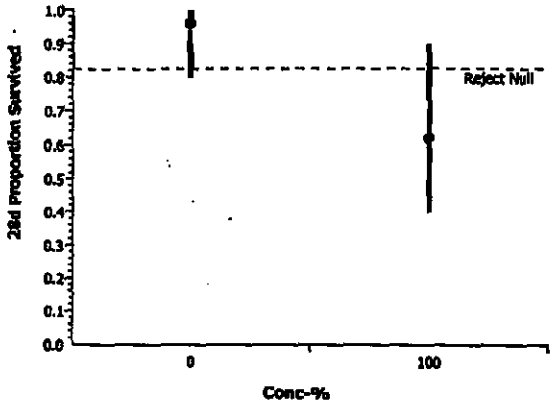
ANOVA Assumptions

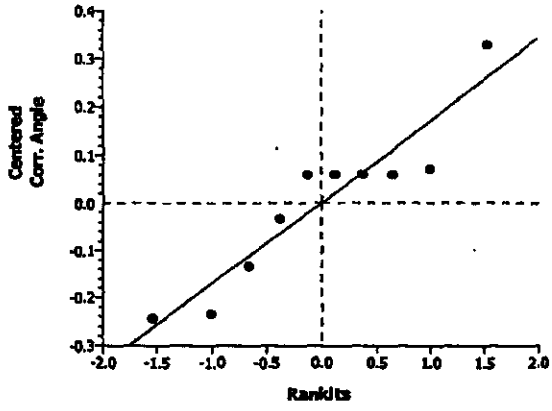
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.52783	23.15450	0.39100	Equal Variances
Distribution	Shapiro-Wilk W	0.89030		0.17091	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.62000	0.40000	0.90000	0.19235	0.91928	0.68472	1.24905	0.21677

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M HIII

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	17-7989-8220	17-7989-8220	10 Apr-06 10:54 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	24.67%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	2.51167	1.85955	0.0181	0.04495	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0092156	0.009216	1	6.31	0.03628	Significant Effect
Error	0.0116866	0.001461	8			
Total	0.02090217	0.0106764	9			

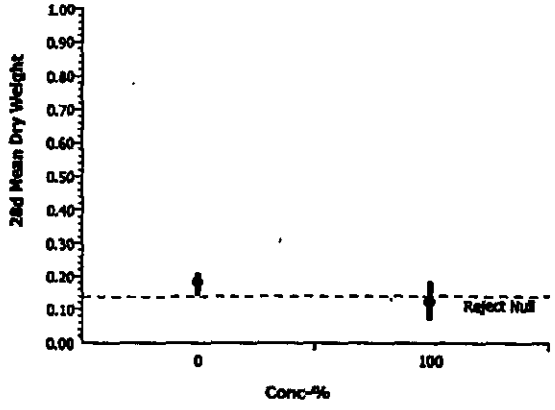
ANOVA Assumptions

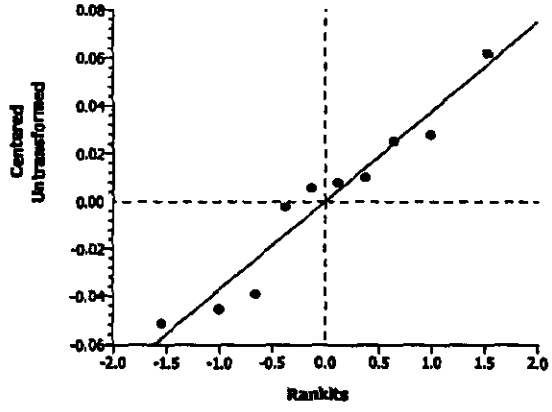
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.85182	23.15450	0.21988	Equal Variances
Distribution	Shapiro-Wilk W	0.93444		0.49298	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.12149	0.07000	0.18333	0.04816				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:00 AM
Test Link: 13-5362-0937/B153823hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	05-7988-0151	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	04-3752-9454	**Code:**	B1538-23	**Client:**	
Sample Date:	21 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	17d 0h	**Station:**			

Comments: J112B3

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
06-5035-5858	28d Mean Dry Weight	< 100	100	N/A	17.13%	Equal Variance t Two-Sample
03-3975-4503	28d Proportion Survived	< 100	100	N/A	20.34%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
03-3975-4503	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.11329	0.09000	0.16143	0.01270	0.02839	25.06%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.66000	0.30000	1.00000	0.12083	0.27019	40.94%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.09000	0.11500	0.16143	0.10200	0.09800

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.30000✓	0.80000✓	0.70000✓	1.00000✓	0.50000✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	13-5362-0937	13-5362-0937	10 Apr-06 11:00 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	20.34%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	2.4388	1.85955	0.0203	0.28667	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.3533851	0.353385	1	5.95	0.04064	Significant Effect
Error	0.4753213	0.059415	8			
Total	0.82870632	0.4128002	9			

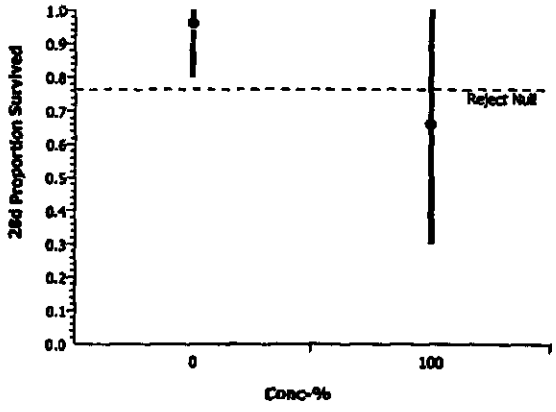
ANOVA Assumptions

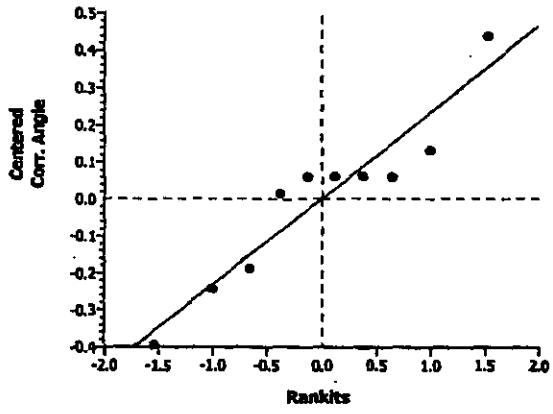
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	5.39257	23.15450	0.13151	Equal Variances
Distribution	Shapiro-Wilk W	0.91773		0.33842	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.66000	0.30000	1.00000	0.27019	0.97507	0.57964	1.41202	0.31661

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	13-5362-0937	13-5362-0937	10 Apr-06 11:00 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	17.13%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	4.10644	1.85955	0.0017	0.03121	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.011873	0.011873	1	16.88	0.00341	Significant Effect
Error	0.0056327	0.000704	8			
Total	0.01750567	0.0125770	9			

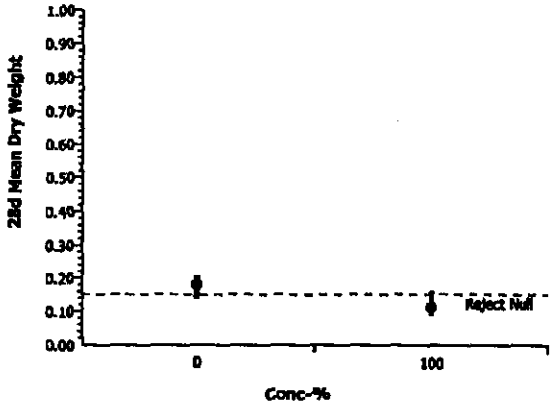
ANOVA Assumptions

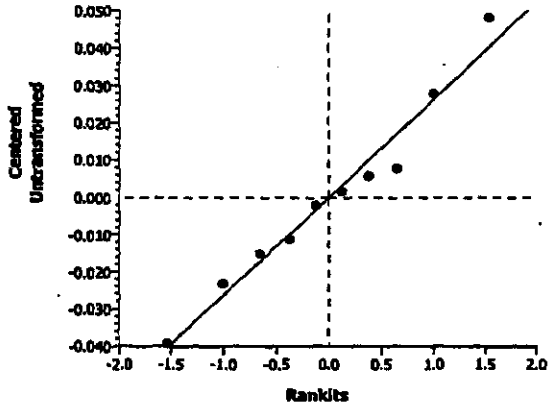
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.33839	23.15450	0.78445	Equal Variances
Distribution	Shapiro-Wilk W	0.97530		0.93519	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.11329	0.09000	0.16143	0.02839				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:02 AM
Test Link: 10-6234-7069/B153824hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	07-5026-1667	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	02-2128-7235	**Code:**	B1538-24	**Client:**	
Sample Date:	21 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	17d 0h	**Station:**			

Comments: J112B4

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
08-8041-3145	28d Mean Dry Weight	< 100	100	N/A	18.72%	Equal Variance t Two-Sample
12-8422-4010	28d Proportion Survived	< 100	100	N/A	26.97%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
12-8422-4010	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		4	0.11200	0.08500	0.13857	0.01480	0.02961	26.44%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.52000	0.00000	0.90000	0.15297	0.34205	65.78%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.13857	0.08500	0.08778	0.13667	

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.70000✓	0.40000✓	0.90000 ✓	0.80000✓	0.00000✓

CETIS Analysis Detail

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	10-6234-7069	10-6234-7069	10 Apr-06 11:02 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	26.97%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	2.88794	1.85955	0.0101	0.35871	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.7758644	0.775864	1	8.34	0.02026	Significant Effect
Error	0.7442173	0.093027	8			
Total	1.52008176	0.8688916	9			

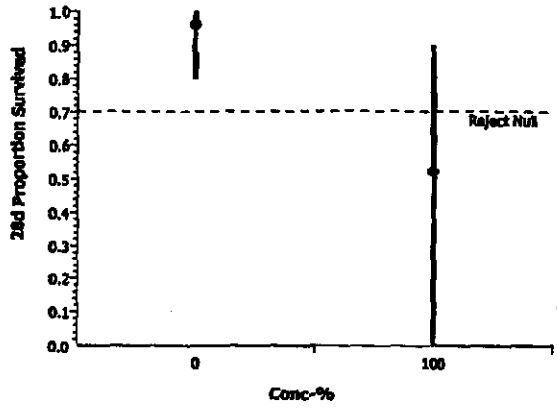
ANOVA Assumptions

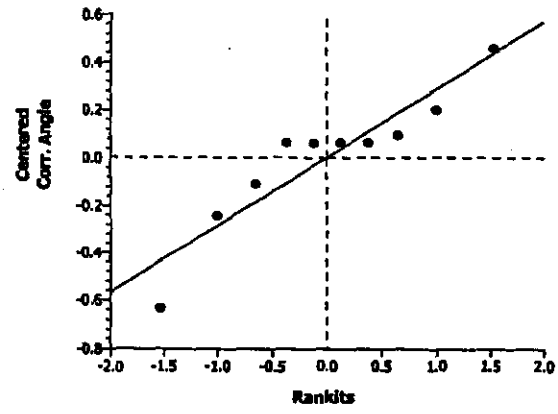
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	9.00893	23.15450	0.05590	Equal Variances
Distribution	Shapiro-Wilk W	0.88982		0.16879	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.52000	0.00000	0.90000	0.34205	0.79396	0.15878	1.24905	0.40923

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	10-6234-7069	10-6234-7069	10 Apr-06 11:02 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	18.72%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	3.90016	1.89458	0.0029	0.0341	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.01095	0.01095	1	15.21	0.00590	Significant Effect
Error	0.0050390	0.00072	7			
Total	0.01598897	0.0116698	8			

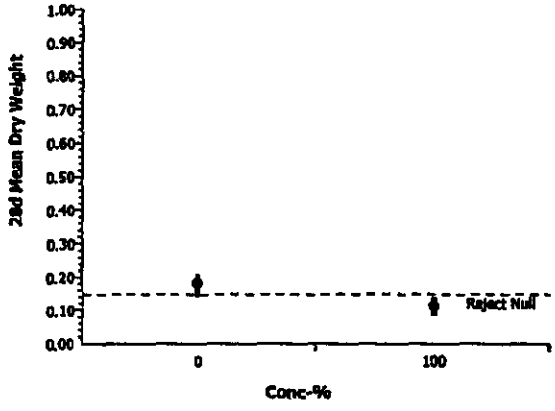
ANOVA Assumptions

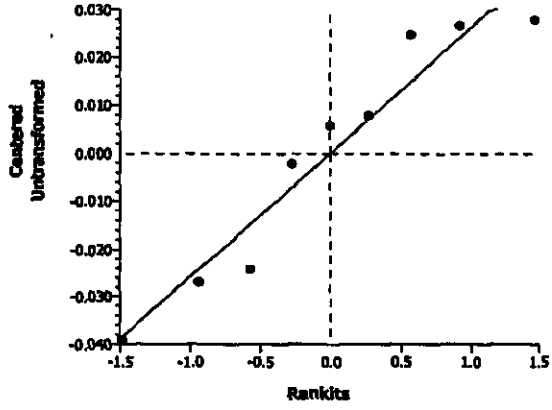
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.45588	24.25912	0.70497	Equal Variances
Distribution	Shapiro-Wilk W	0.90290		0.26932	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		4	0.11200	0.08500	0.13857	0.02961				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:05 AM
Test Link: 15-8101-9572/B153825hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	11-3184-5949	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	06-0275-8962	**Code:**	B1538-25	**Client:**	
Sample Date:	21 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	17d 0h	**Station:**			

Comments: J112B5

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
16-2217-9453	28d Proportion Survived	< 100	100	N/A	6.97%	Wilcoxon Rank Sum Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
16-2217-9453	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.00000	0.00000	0.00000	0.00000	0.00000	0.00%

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.00000✓	0.00000✓	0.00000✓	0.00000✓	0.00000✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	15-8101-9572	15-8101-9572	10 Apr-06 11:05 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Wilcoxon Rank Sum Two-Sample	C > T	Rank		<100	100		N/A	6.97%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	Ties	Decision(0.05)
Dilution Sediment		100	15		0.0040	0	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	3.553724	3.553724	1	382.35	0.00000	Significant Effect
Error	0.0743553	0.009294	8			
Total	3.62807959	3.5630187	9			

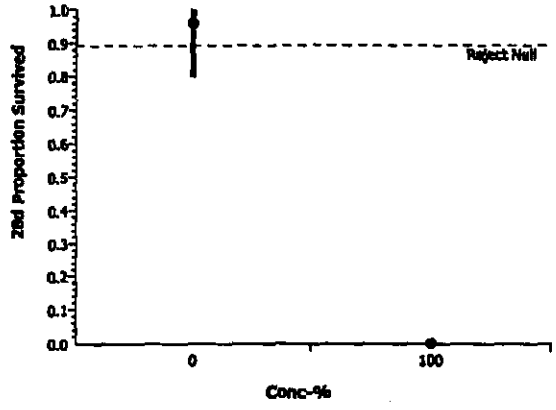
ANOVA Assumptions

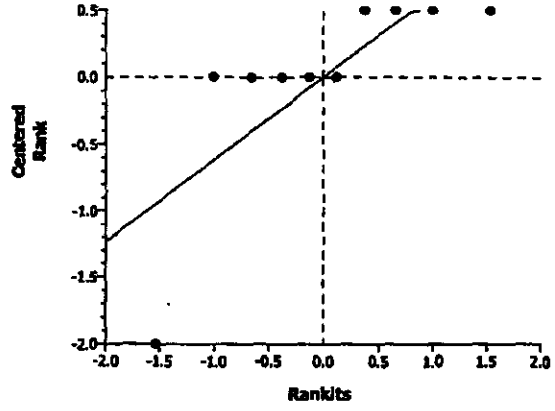
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Modified Levene	1.60000	11.25862	0.24150	Equal Variances
Distribution	Shapiro-Wilk W	0.62470		0.00011	Non-normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	8.00000	6.00000	8.50000	1.11803
100		5	0.00000	0.00000	0.00000	0.00000	3.00000	3.00000	3.00000	0.00000

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:06 AM
Test Link: 12-2006-0725/B153826hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	09-2390-8146	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	08-5209-4296	**Code:**	B1538-26	**Client:**	
Sample Date:	21 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	17d 0h	**Station:**			

Comments: J112B6

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
15-1862-7993	28d Mean Dry Weight	< 100	100	N/A	13.25%	Equal Variance t Two-Sample
15-0282-0531	28d Proportion Survived	< 100	100	N/A	9.76%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
15-0282-0531	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		4	0.09125	0.08500	0.10000	0.00315	0.00629	6.89%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.12000	0.00000	0.20000	0.03742	0.08367	69.72%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.16800
100		0.08500	0.10000	0.09000	0.09000	

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.20000	0.00000	0.20000	0.10000	0.10000

CETIS Analysis Detail

Hyalleia 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	12-2006-0725	12-2006-0725	10 Apr-06 11:06 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	9.76%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	12.0887	1.85955	0.0000	0.15461	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	2.525702	2.525702	1	146.14	0.00000	Significant Effect
Error	0.1382645	0.017283	8			
Total	2.66396675	2.5429853	9			

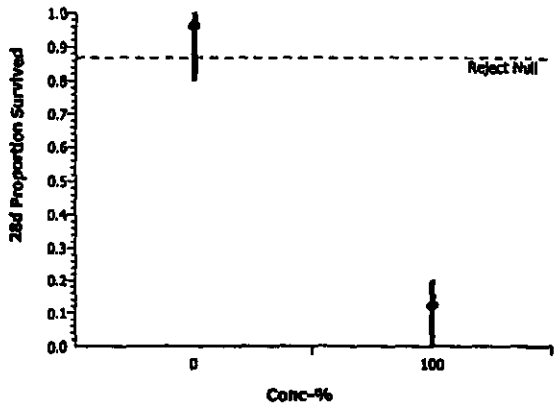
ANOVA Assumptions

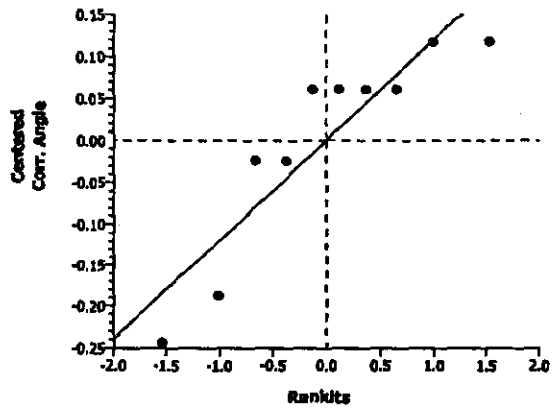
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.16345	23.15450	0.88689	Equal Variances
Distribution	Shapiro-Wilk W	0.81879		0.02450	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.12000	0.00000	0.20000	0.08367	0.34592	0.15878	0.46365	0.12640

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	12-2006-0725	12-2006-0725	10 Apr-06 11:06 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	13.25%

Group Comparisons

Control vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment	100	7.13502	1.89458	0.0001	0.02415	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0183820	0.018382	1	50.91	0.00019	Significant Effect
Error	0.0025276	0.000361	7			
Total	0.02090957	0.0187431	8			

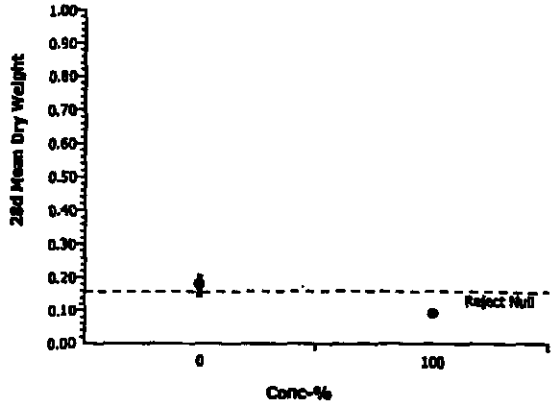
ANOVA Assumptions

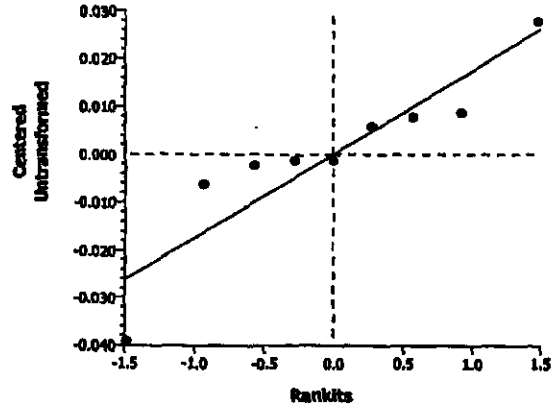
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	15.21319	46.19462	0.04948	Equal Variances
Distribution	Shapiro-Wilk W	0.87237		0.13034	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		4	0.09125	0.08500	0.10000	0.00629				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:08 AM
Test Link: 03-3032-0079/B153827hac

Hyaliela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	08-3754-8212	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	14-9751-8021	**Code:**	B1538-27	**Client:**	
Sample Date:	21 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	17d 0h	**Station:**			

Comments: J116M6

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
10-7037-4920	28d Mean Dry Weight	< 100	100	N/A	31.45%	Equal Variance t Two-Sample
05-6601-0929	28d Proportion Survived	< 100	100	N/A	10.17%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
05-6601-0929	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		1	0.08500	0.08500	0.08500			

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.04000	0.00000	0.20000	0.04000	0.08944	223.61

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.08500				

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.00000 ✓	0.00000 ✓	0.20000 ✓	0.00000 ✓	0.00000 ✓

CETIS Analysis Detail

Hyalleia 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	03-3032-0079	03-3032-0079	10 Apr-06 11:08 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	10.17%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	13.1195	1.85955	0.0000	0.16035	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	3.199537	3.199537	1	172.12	0.00000	Significant Effect
Error	0.1487106	0.018589	8			
Total	3.34824717	3.2181254	9			

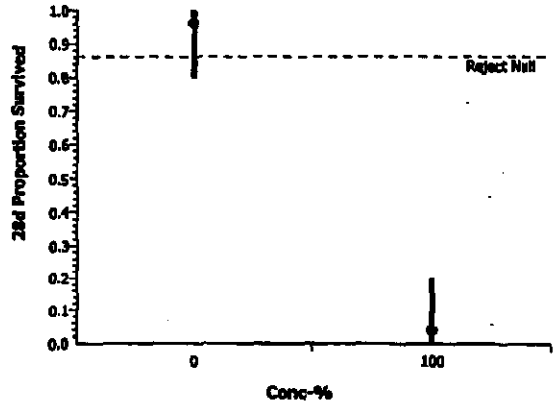
ANOVA Assumptions

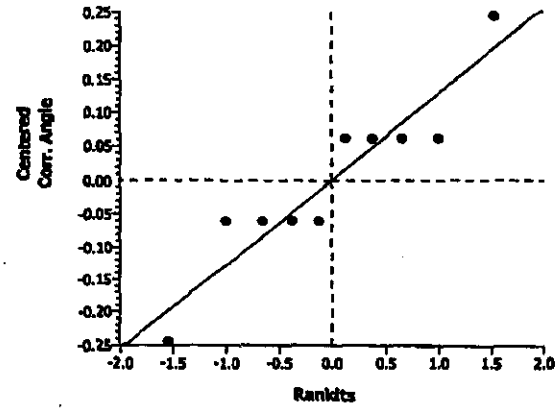
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.00000	23.15450	1.00000	Equal Variances
Distribution	Shapiro-Wilk W	0.90063		0.22264	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.04000	0.00000	0.20000	0.08944	0.21975	0.15878	0.46365	0.13634

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	03-3032-0079	03-3032-0079	10 Apr-06 11:08 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	31.45%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	3.61580	2.13185	0.0112	0.05731	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0078732	0.007873	1	13.07	0.02244	Significant Effect
Error	0.0024088	0.000602	4			
Total	0.01028200	0.0084754	5			

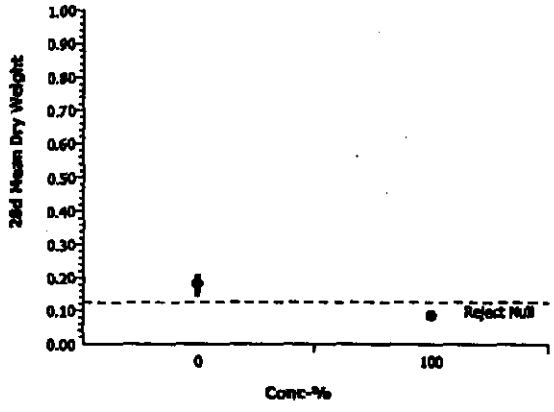
ANOVA Assumptions

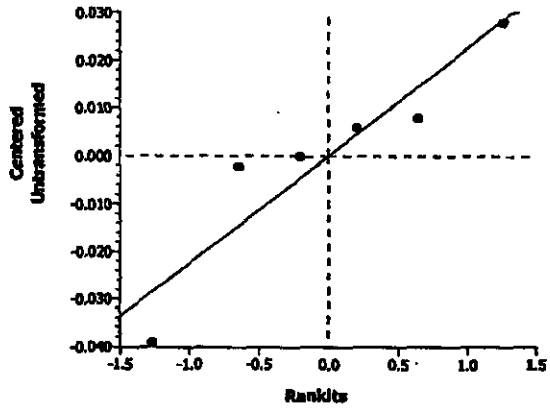
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Distribution	Shapiro-Wilk W	0.89371		0.33811	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		1	0.08500	0.08500	0.08500					

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:15 AM
Test Link: 04-1911-1052/B153828hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	14-7601-1535	Test Type:	Hyalella (42d)	Duration:	28d 0h
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalella azteca
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	Brine:			

Sample No:	16-5947-6775	Code:	B1538-28	Client:	
Sample Date:	21 Feb-06	Material:	Sediment	Project:	
Receive Date:		Source:	Hanford		
Sample Age:	17d 0h	Station:			

Comments: J116M7

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
11-0365-7894	28d Mean Dry Weight	< 100	100	N/A	21.14%	Equal Variance t Two-Sample
06-8965-4096	28d Proportion Survived	< 100	100	N/A	8.44%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
06-8965-4096	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		2	0.07000	0.06000	0.08000	0.01000	0.01414	20.20%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.98000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.04000	0.00000	0.10000	0.02449	0.05477	136.93

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.06000	0.08000			

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.10000 ✓	0.10000 ✓	0.00000 ✓	0.00000 ✓	0.00000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	04-1911-1052	04-1911-1052	10 Apr-06 11:15 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	8.44%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	15.4650	1.85955	0.0000	0.13552	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	3.175741	3.175741	1	239.17	0.00000	Significant Effect
Error	0.1062265	0.013278	8			
Total	3.2819677	3.1890195	9			

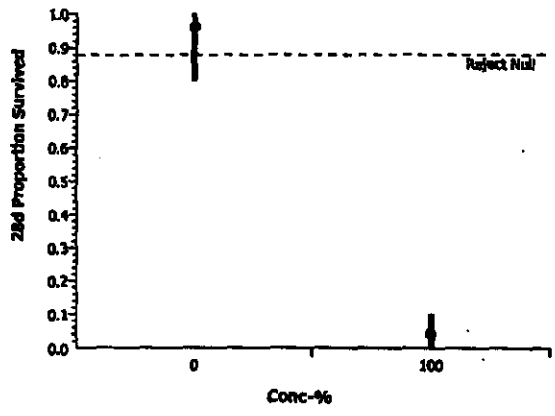
ANOVA Assumptions

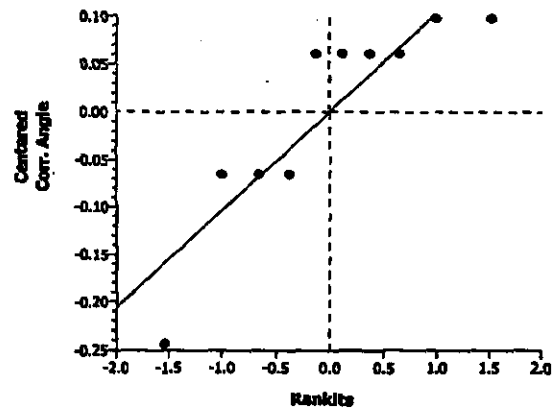
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.33299	23.15450	0.43208	Equal Variances
Distribution	Shapiro-Wilk W	0.80360		0.01604	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.04000	0.00000	0.10000	0.05477	0.22397	0.15878	0.32175	0.08926

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	04-1911-1052	04-1911-1052	10 Apr-06 11:15 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	21.14%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	5.87093	2.01505	0.0010	0.03851	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0179840	0.017984	1	34.47	0.00203	Significant Effect
Error	0.0026088	0.000522	5			
Total	0.02059282	0.0185058	6			

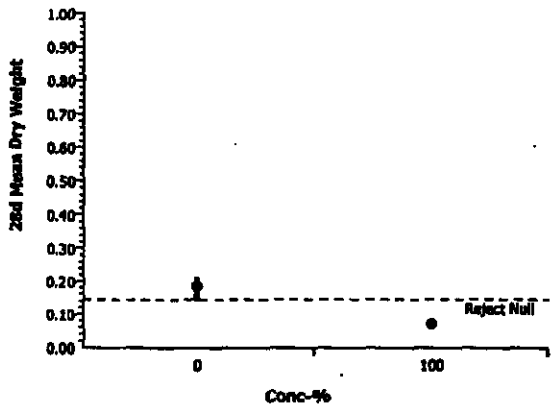
ANOVA Assumptions

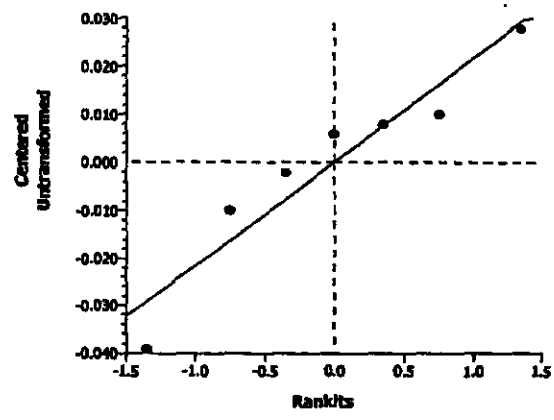
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.01087	22499.58000	0.80943	Equal Variances
Distribution	Shapiro-Wilk W	0.92862		0.53926	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		2	0.07000	0.06000	0.08000	0.01414				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:17 AM
Test Link: 02-3392-2622/B153829hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	11-2051-2293	Test Type:	Hyalella (42d)	Duration:	28d 0h
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalella azteca
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	Brine:			

Sample No:	07-8377-5462	Code:	B1538-29	Client:	
Sample Date:	21 Feb-06	Material:	Sediment	Project:	
Receive Date:		Source:	Hanford		
Sample Age:	17d 0h	Station:			

Comments: J11734

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
04-3426-0089	28d Mean Dry Weight	< 100	100	N/A	19.85%	Equal Variance t Two-Sample
14-0762-2720	28d Proportion Survived	< 100	100	N/A	13.86%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
14-0762-2720	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		3	0.09667	0.06667	0.12000	0.01575	0.02728	28.23%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.14000	0.00000	0.30000	0.06782	0.15166	108.33

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.06667	0.12000	0.10333		

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.30000 ✓	0.10000 ✓	0.00000 ✓	0.00000 ✓	0.30000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	02-3392-2622	02-3392-2622	10 Apr-06 11:17 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	13.86%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	8.80908	1.85955	0.0000	0.20926	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	2.456811	2.456811	1	77.60	0.00002	Significant Effect
Error	0.25328	0.03166	8			
Total	2.71009091	2.4884709	9			

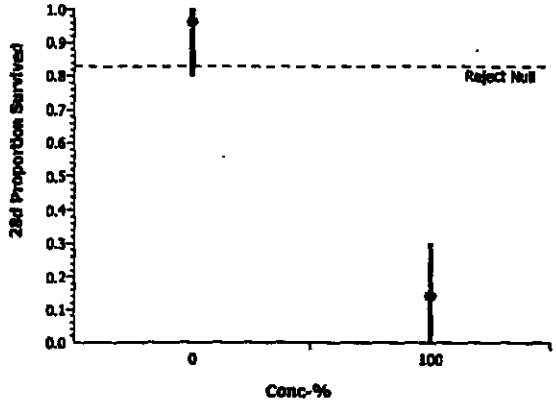
ANOVA Assumptions

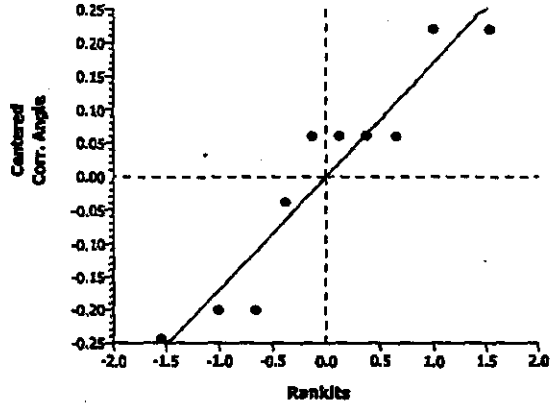
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.40635	23.15450	0.41590	Equal Variances
Distribution	Shapiro-Wilk W	0.88272		0.14020	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.98000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.14000	0.00000	0.30000	0.15166	0.35972	0.15878	0.57964	0.21150

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	02-3392-2622	02-3392-2622	10 Apr-06 11:17 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	19.85%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	4.59525	1.94318	0.0019	0.03617	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0137175	0.013717	1	21.12	0.00371	Significant Effect
Error	0.0038977	0.00065	6			
Total	0.01761514	0.0143671	7			

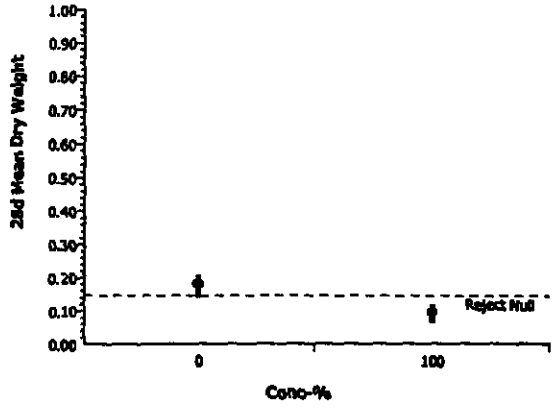
ANOVA Assumptions

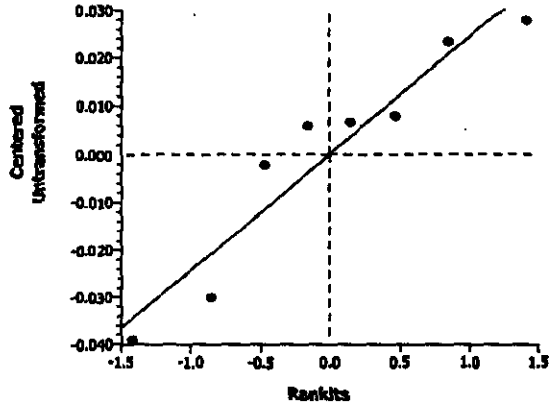
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.23620	26.28427	0.76387	Equal Variances
Distribution	Shapiro-Wilk W	0.89942		0.28551	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		3	0.09667	0.06667	0.12000	0.02728				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:18 AM
Test Link: 01-7602-9725/B153830hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	12-6135-1799	Test Type:	Hyalella (42d)	Duration:	28d 0h
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalella azteca
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	Brine:			

Sample No:	02-3574-7842	Code:	B1538-30	Client:	
Sample Date:	27 Feb-06	Material:	Sediment	Project:	
Receive Date:		Source:	Hanford		
Sample Age:	11d 0h	Station:			

Comments: J116X2

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
11-0194-0748	28d Mean Dry Weight	100	> 100	N/A	18.92%	Equal Variance t Two-Sample
18-9167-9932	28d Proportion Survived	100	> 100	N/A	9.76%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
18-9167-9932	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.20734	0.16750	0.24333	0.01494	0.03341	16.11%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.88000	0.80000	1.00000	0.03742	0.08367	9.51%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.19375	0.16750	0.24100	0.24333	0.19111

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.80000 ✓	0.80000 ✓	1.00000 ✓	0.90000 ✓	0.90000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	01-7602-9725	01-7602-9725	10 Apr-06 11:18 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	9.76%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	1.51735	1.85955	0.0838	0.15461	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0397919	0.039792	1	2.30	0.16765	Non-Significant Effect
Error	0.1382645	0.017283	8			
Total	0.17805639	0.0570749	9			

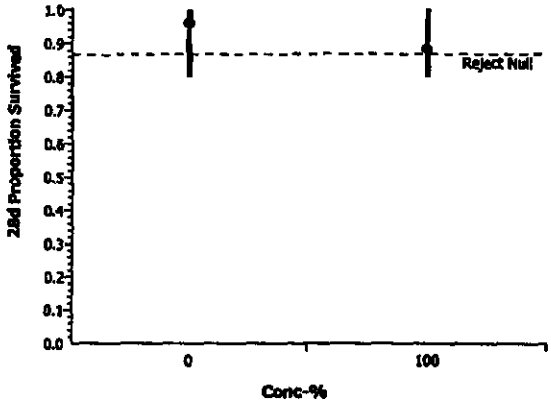
ANOVA Assumptions

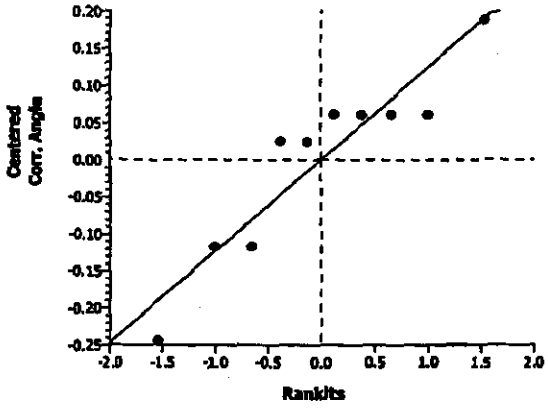
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.16345	23.15450	0.88689	Equal Variances
Distribution	Shapiro-Wilk W	0.88789		0.16054	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.88000	0.80000	1.00000	0.08367	1.22488	1.10715	1.41202	0.12640

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	01-7602-9725	01-7602-9725	10 Apr-06 11:18 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	18.92%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	-1.3561	1.85955	0.8940	0.03447	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0015799	0.00158	1	1.84	0.21209	Non-Significant Effect
Error	0.0068726	0.000859	8			
Total	0.00845253	0.002439	9			

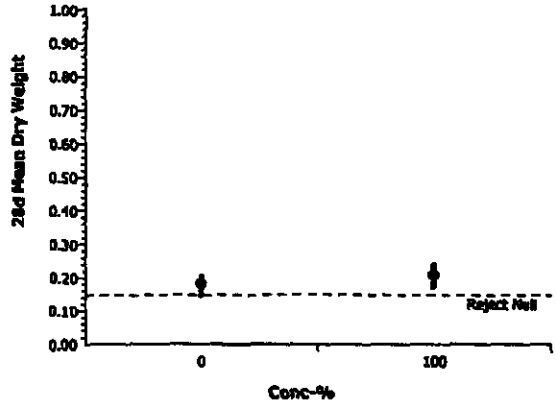
ANOVA Assumptions

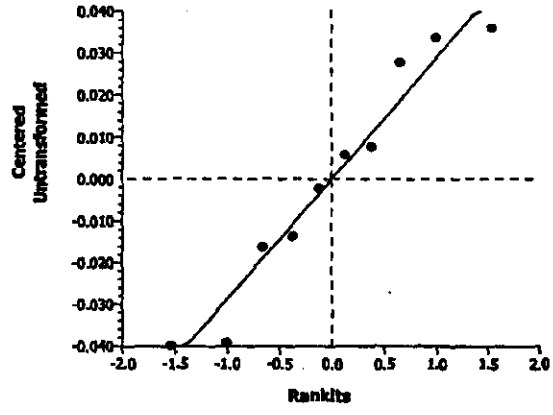
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.85313	23.15450	0.55485	Equal Variances
Distribution	Shapiro-Wilk W	0.92798		0.42834	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.20734	0.16750	0.24333	0.03341				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:22 AM
Test Link: 05-3200-4993/B153831hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	16-1303-6858	Test Type:	Hyalella (42d)	Duration:	28d 0h
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalella azteca
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	Brine:			

Sample No:	06-5599-6068	Code:	B1538-31	Client:	
Sample Date:	27 Feb-06	Material:	Sediment	Project:	
Receive Date:		Source:	Hanford		
Sample Age:	11d 0h	Station:			

Comments: J116W9

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
09-5439-4519	28d Mean Dry Weight	< 100	100	N/A	16.12%	Equal Variance t Two-Sample
06-6574-6851	28d Proportion Survived	< 100	100	N/A	16.75%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
06-6574-6851	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		3	0.09067	0.08200	0.10000	0.00521	0.00902	9.95%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.16000	0.00000	0.50000	0.09274	0.20736	129.60

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.08200	0.10000	0.09000		

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.50000 ✓	0.10000 ✓	0.00000 ✓	0.00000 ✓	0.20000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	05-3200-4993	05-3200-4993	10 Apr-06 11:22 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	16.75%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	7.39035	1.85955	0.0000	0.24492	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	2.368629	2.368629	1	54.62	0.00008	Significant Effect
Error	0.3469422	0.043368	8			
Total	2.71557137	2.411997	9			

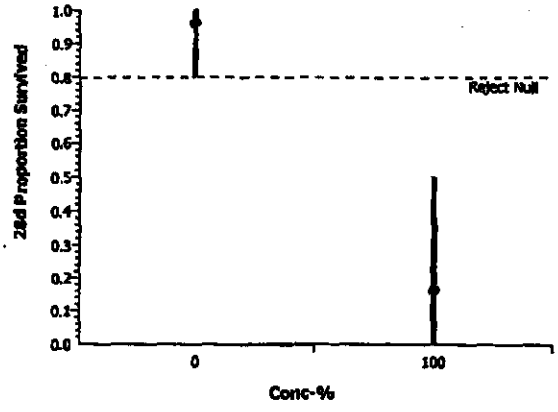
ANOVA Assumptions

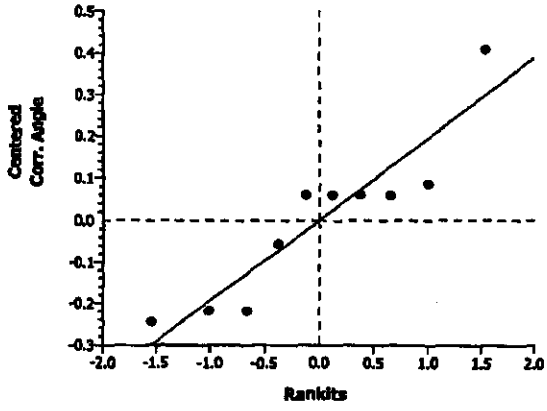
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.66600	23.15450	0.23621	Equal Variances
Distribution	Shapiro-Wilk W	0.86709		0.09243	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.16000	0.00000	0.50000	0.20736	0.37767	0.15878	0.78540	0.26105

Graphics





CETIS Analysis Detail

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	05-3200-4993	05-3200-4993	10 Apr-06 11:22 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	16.12%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	6.05431	1.94318	0.0005	0.02938	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0157094	0.015709	1	36.65	0.00092	Significant Effect
Error	0.0025715	0.000429	6			
Total	0.01828087	0.016138	7			

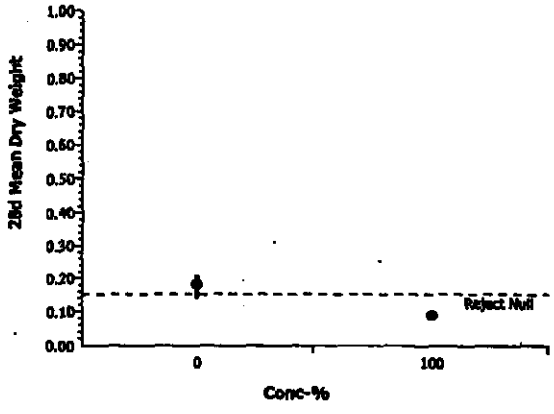
ANOVA Assumptions

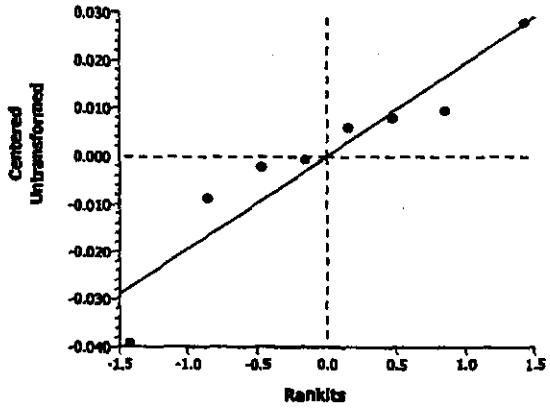
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	7.40425	199.24970	0.24503	Equal Variances
Distribution	Shapiro-Wilk W	0.90906		0.34748	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		3	0.09067	0.08200	0.10000	0.00902				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:23 AM
Test Link: 09-7284-1143/B153832hac

Hyaliela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	06-5231-4106	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	10-2090-3158	**Code:**	B1538-32	**Client:**	
Sample Date:	27 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	11d 0h	**Station:**			

Comments: J116X0

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
07-0218-0612	28d Mean Dry Weight	100	> 100	N/A	30.61%	Equal Variance t Two-Sample
10-8400-2966	28d Proportion Survived	100	> 100	N/A	6.97%	Wilcoxon Rank Sum Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
10-8400-2966	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.25100	0.20100	0.33100	0.02791	0.06241	24.86%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.21300	0.30600	0.33100	0.20100	0.20400

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		1.00000 ✓	1.00000 ✓	1.00000 ✓	1.00000 ✓	1.00000 ✓

CETIS Analysis Detail

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	09-7284-1143	09-7284-1143	10 Apr-06 11:23 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Wilcoxon Rank Sum Two-Sample	C > T	Rank		100	>100	1	N/A	6.97%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	Ties	Decision(0.05)
Dilution Sediment		100	30		0.6548	4	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0092944	0.009294	1	1.00	0.34659	Non-Significant Effect
Error	0.0743553	0.009294	8			
Total	0.08364972	0.0185888	9			

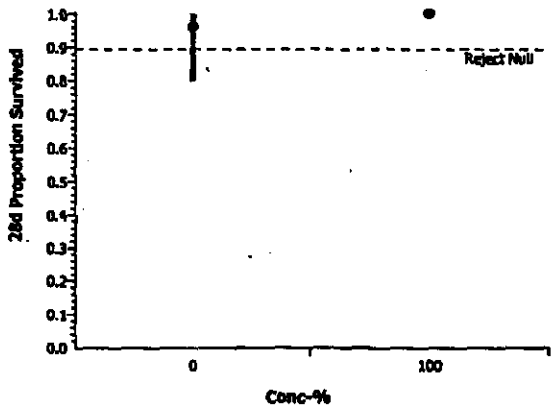
ANOVA Assumptions

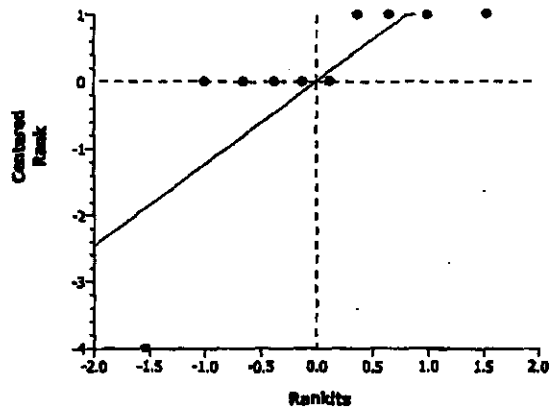
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Modified Levene	1.60000	11.25862	0.24150	Equal Variances
Distribution	Shapiro-Wilk W	0.62470		0.00011	Non-normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	5.00000	1.00000	6.00000	2.23607
100		5	1.00000	1.00000	1.00000	0.00000	6.00000	6.00000	6.00000	0.00000

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	09-7284-1143	09-7284-1143	10 Apr-06 11:23 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	30.61%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	-2.2942	1.85955	0.9745	0.05577	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0118336	0.011834	1	5.26	0.05093	Non-Significant Effect
Error	0.0179868	0.002248	8			
Total	0.02982042	0.014082	9			

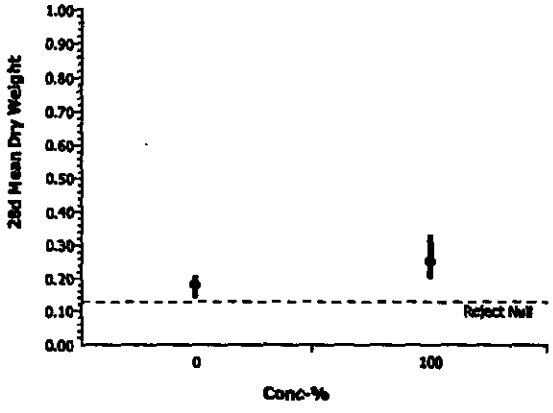
ANOVA Assumptions

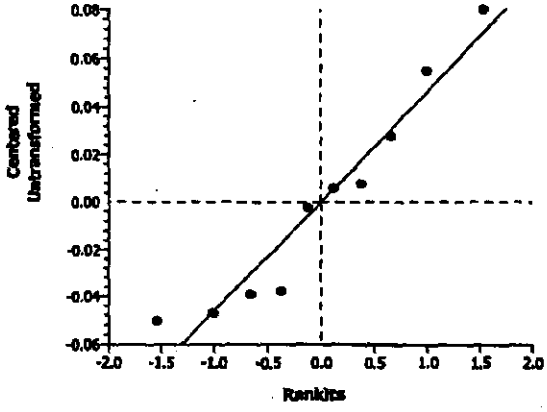
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	6.46711	23.15450	0.09800	Equal Variances
Distribution	Shapiro-Wilk W	0.91722		0.33433	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.25100	0.20100	0.33100	0.06241				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:25 AM
Test Link: 07-6908-9009/B153833hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	03-2484-1176	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	07-2556-8640	**Code:**	B1538-33	**Client:**	
Sample Date:	27 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	11d 0h	**Station:**			

Comments: J116X1

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
11-9944-6587	28d Mean Dry Weight	100	> 100	N/A	17.85%	Equal Variance t Two-Sample
03-6243-7501	28d Proportion Survived	100	> 100	N/A	8.44%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
03-6243-7501	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.19756	0.16000	0.24000	0.01361	0.03044	15.41%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.94000	0.90000	1.00000	0.02449	0.05477	5.83%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.16000	0.19444	0.18111	0.21222	0.24000

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		1.00000 ✓	0.90000 ✓	0.90000 ✓	0.90000 ✓	1.00000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	07-6908-9009	07-6908-9009	10 Apr-06 11:25 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	8.44%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	0.50507	1.85955	0.3136	0.13552	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0033872	0.003387	1	0.26	0.62713	Non-Significant Effect
Error	0.1062265	0.013278	8			
Total	0.10961371	0.0166655	9			

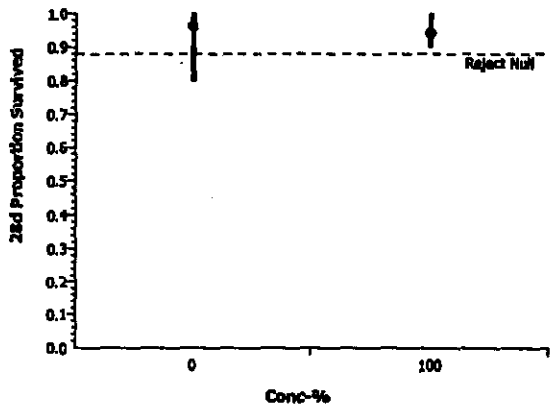
ANOVA Assumptions

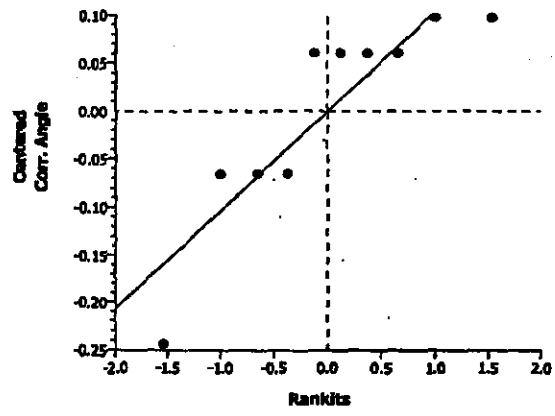
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.33299	23.15450	0.43208	Equal Variances
Distribution	Shapiro-Wilk W	0.80360		0.01604	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.94000	0.90000	1.00000	0.05477	1.31423	1.24905	1.41202	0.08926

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	07-6908-9009	07-6908-9009	10 Apr-06 11:25 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	17.85%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	-0.8781	1.85955	0.7973	0.03252	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0005895	0.000589	1	0.77	0.40548	Non-Significant Effect
Error	0.006116	0.000764	8			
Total	0.00670544	0.001354	9			

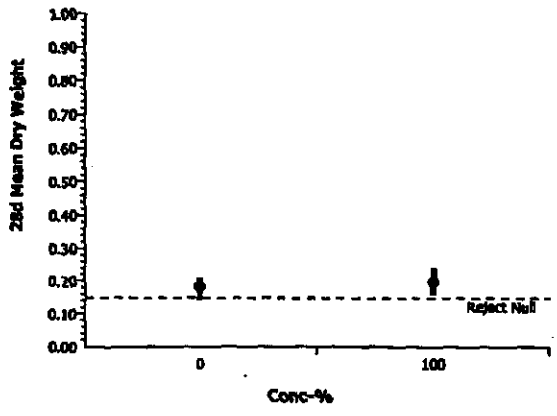
ANOVA Assumptions

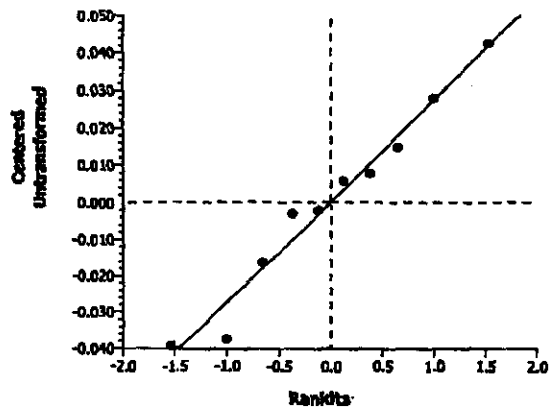
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.53900	23.15450	0.68635	Equal Variances
Distribution	Shapiro-Wilk W	0.96113		0.79872	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.19756	0.16000	0.24000	0.03044				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:29 AM
Test Link: 05-1276-0371/B153834hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	03-6512-6552	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	06-8119-3467	**Code:**	B1538-34	**Client:**	
Sample Date:	27 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	11d 0h	**Station:**			

Comments: J116X3

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
16-0552-1638	28d Mean Dry Weight	< 100	100	N/A	18.28%	Equal Variance t Two-Sample
10-6618-9985	28d Proportion Survived	100	> 100	N/A	18.97%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
10-6618-9985	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.12986	0.09100	0.16700	0.01416	0.03166	24.38%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.84000	0.50000	1.00000	0.10296	0.23022	27.41%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.15429 ✓	0.16700 ✓	0.09100 ✓	0.13000 ✓	0.10700 ✓

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.70000 ✓	1.00000 ✓	1.00000 ✓	0.50000 ✓	1.00000 ✓

CETIS Analysis Detail

Hyalleia 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	05-1276-0371	05-1276-0371	10 Apr-06 11:29 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	18.97%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	1.01923	1.85955	0.1690	0.27097	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.055147	0.055147	1	1.04	0.33792	Non-Significant Effect
Error	0.4246863	0.053086	8			
Total	0.47983326	0.1082328	9			

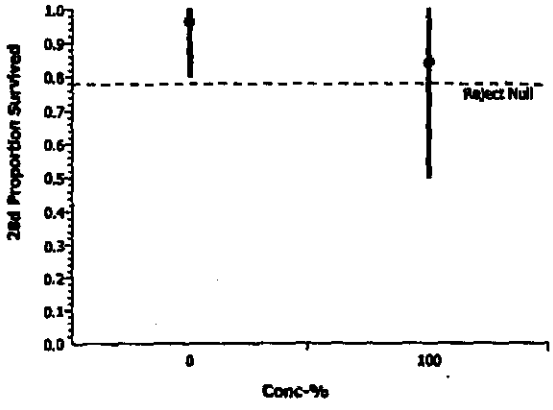
ANOVA Assumptions

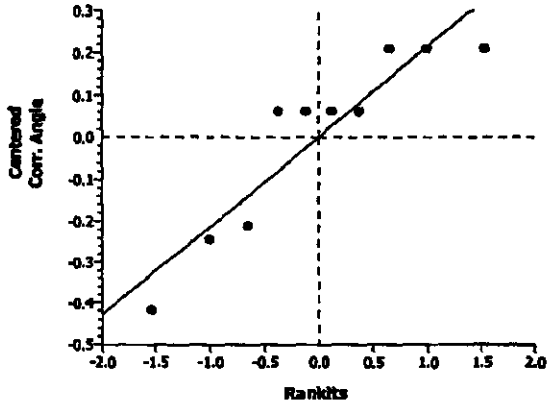
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	4.71158	23.15450	0.16246	Equal Variances
Distribution	Shapiro-Wilk W	0.84447		0.04991	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.84000	0.50000	1.00000	0.23022	1.20252	0.78540	1.41202	0.29594

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	05-1276-0371	05-1276-0371	10 Apr-06 11:29 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		<100	100		N/A	18.28%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	2.92206	1.85955	0.0096	0.03331	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0068494	0.006849	1	8.54	0.01923	Significant Effect
Error	0.0064175	0.000802	8			
Total	0.01326694	0.0076516	9			

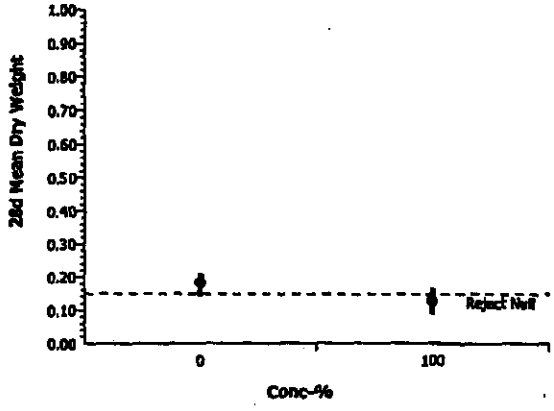
ANOVA Assumptions

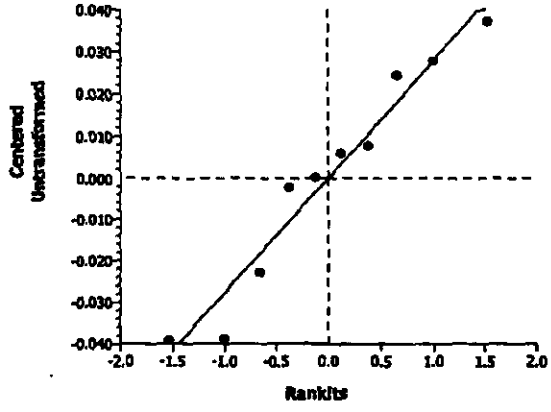
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.66418	23.15450	0.63380	Equal Variances
Distribution	Shapiro-Wilk W	0.93152		0.46298	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.12986	0.09100	0.16700	0.03166				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:30 AM
Test Link: 12-4877-4799/B153835hac

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M HILL

Test No:	13-5874-1738	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	19-6365-0974	**Code:**	B1538-35	**Client:**	
Sample Date:	27 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	11d 0h	**Station:**			

Comments: J116X6

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
09-5055-5237	28d Mean Dry Weight	100	> 100	N/A	18.57%	Equal Variance t Two-Sample
08-8451-1189	28d Proportion Survived	< 100	100	N/A	11.51%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
08-8451-1189	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.19579	0.15556	0.24286	0.01451	0.03244	16.57%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.76000	0.60000	0.90000	0.06000	0.13416	17.65%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.19000	0.15556	0.18222	0.20833	0.24286

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		0.70000 ✓	0.90000 ✓	0.90000 ✓	0.60000 ✓	0.70000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	12-4877-4799	12-4877-4799	10 Apr-06 11:30 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		<100	100		N/A	11.51%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	2.89040	1.85955	0.0101	0.17869	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.1928575	0.192858	1	8.35	0.02019	Significant Effect
Error	0.1846759	0.023084	8			
Total	0.37753342	0.215942	9			

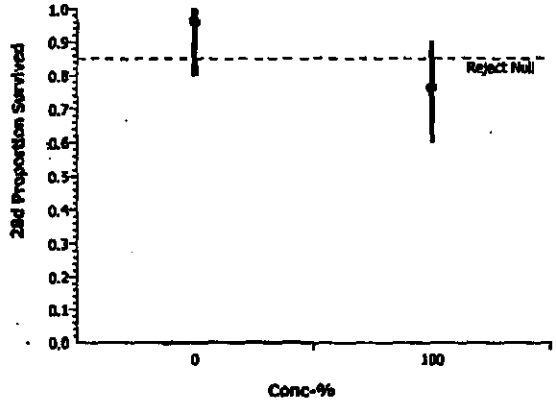
ANOVA Assumptions

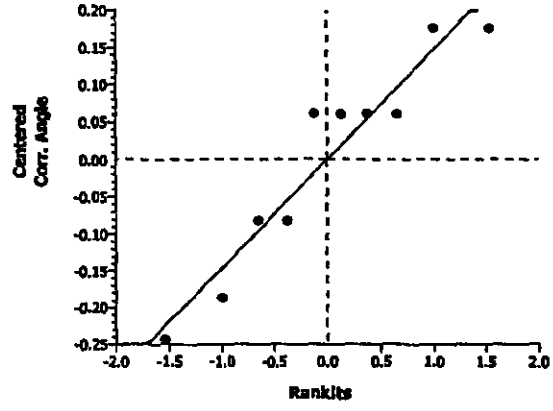
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.48370	23.15450	0.71157	Equal Variances
Distribution	Shapiro-Wilk W	0.90320		0.23746	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.76000	0.60000	0.90000	0.13416	1.07330	0.88608	1.24905	0.16607

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	12-4877-4799	12-4877-4799	10 Apr-06 11:30 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	18.57%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	-0.7473	1.85955	0.7619	0.03383	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.000462	0.000462	1	0.56	0.47627	Non-Significant Effect
Error	0.0066179	0.000827	8			
Total	0.00707985	0.0012892	9			

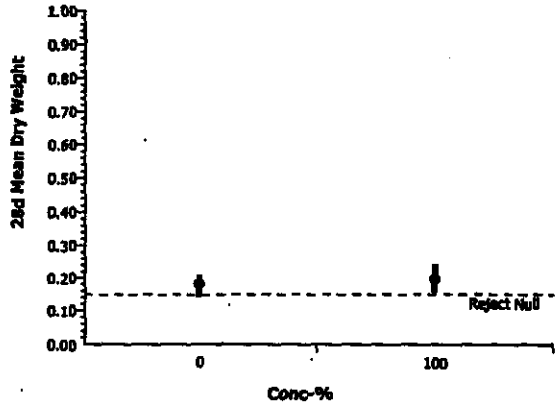
ANOVA Assumptions

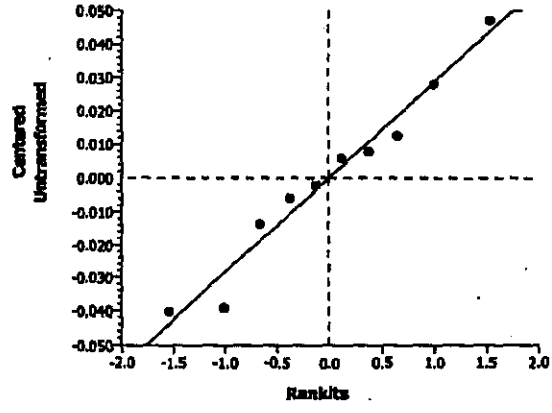
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.74737	23.15450	0.60202	Equal Variances
Distribution	Shapiro-Wilk W	0.96018		0.78788	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.19579	0.15556	0.24286	0.03244				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:31 AM
Test Link: 19-2440-1348/B153836hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Test No:	19-9159-0585	Test Type:	Hyalella (42d)	Duration:	28d 0h
Start Date:	10 Mar-06	Protocol:	EPA/600/R-99/064 (2000)	Species:	Hyalella azteca
Ending Date:	07 Apr-06	Dil Water:		Source:	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	Brine:			

Sample No:	18-1334-9133	Code:	B1538-36	Client:	
Sample Date:	27 Feb-06	Material:	Sediment	Project:	
Receive Date:		Source:	Hanford		
Sample Age:	11d 0h	Station:			

Comments: J116W7

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
13-3182-1239	28d Mean Dry Weight	100	> 100	N/A	16.32%	Equal Variance t Two-Sample
12-3402-9408	28d Proportion Survived	100	> 100	N/A	8.44%	Equal Variance t Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
12-3402-9408	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.25036	0.21500	0.28222	0.01163	0.02600	10.39%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.94000	0.90000	1.00000	0.02449	0.05477	5.83%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.23900	0.21500	0.26778	0.28222	0.24778

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		1.00000 ✓	1.00000 ✓	0.90000 ✓	0.90000 ✓	0.90000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	19-2440-1348	19-2440-1348	10 Apr-06 11:31 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Angular (Corrected)		100	>100	1	N/A	8.44%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	0.50507	1.85955	0.3136	0.13552	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0033872	0.003387	1	0.26	0.62713	Non-Significant Effect
Error	0.1062265	0.013278	8			
Total	0.10961371	0.0166655	9			

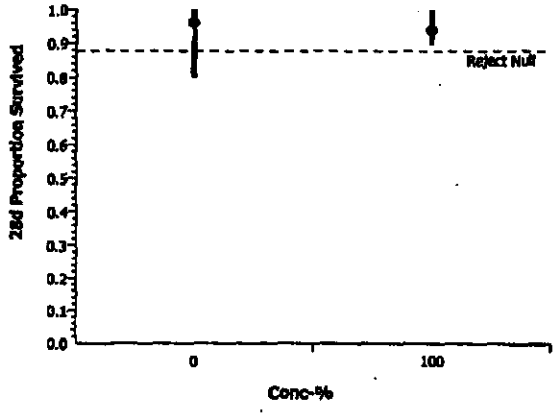
ANOVA Assumptions

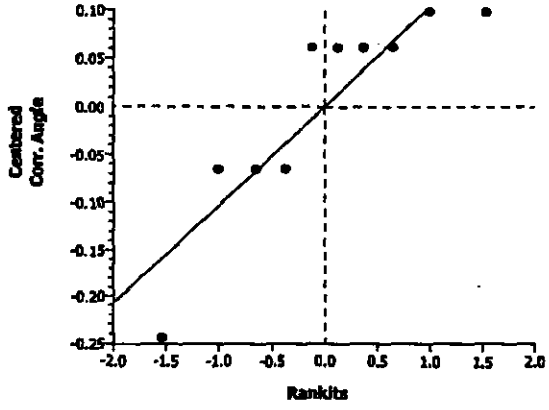
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	2.33299	23.15450	0.43208	Equal Variances
Distribution	Shapiro-Wilk W	0.80360		0.01604	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	1.35104	1.10715	1.41202	0.13634
100		5	0.94000	0.90000	1.00000	0.05477	1.31423	1.24905	1.41202	0.08926

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	19-2440-1348	19-2440-1348	10 Apr-06 11:31 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	16.32%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	-4.2625	1.85955	0.9986	0.02973	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.011613	0.011613	1	18.17	0.00275	Significant Effect
Error	0.0051134	0.000639	8			
Total	0.01672637	0.0122521	9			

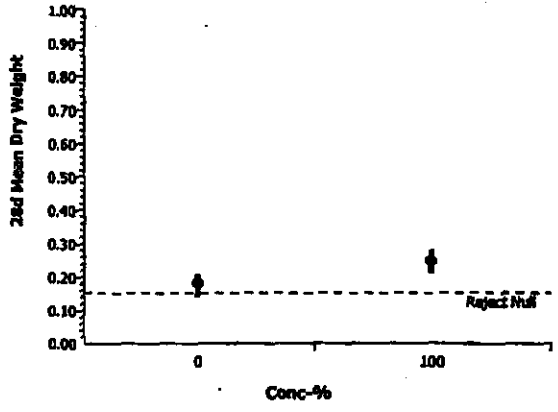
ANOVA Assumptions

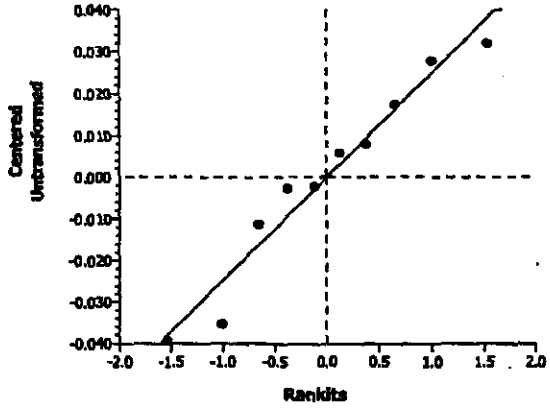
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	1.12280	23.15450	0.91332	Equal Variances
Distribution	Shapiro-Wilk W	0.93951		0.54758	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.25036	0.21500	0.28222	0.02600				

Graphics





CETIS Test Summary

Report Date: 10 Apr-06 11:33 AM
Test Link: 17-9952-9504/B153837hac

Hyalella 42-d Survival, Growth, and Reproduction Sediment Test — **CH2M Hill**

Test No:	07-3152-6851	**Test Type:**	Hyalella (42d)	**Duration:**	28d 0h
Start Date:	10 Mar-06	**Protocol:**	EPA/600/R-99/064 (2000)	**Species:**	Hyalella azteca
Ending Date:	07 Apr-06	**Dil Water:**		**Source:**	Chesapeak Cultures, Nayes, Virginia
Setup Date:	10 Mar-06 12:00 AM	**Brine:**			

Sample No:	14-6448-6091	**Code:**	B1538-37	**Client:**	
Sample Date:	27 Feb-06	**Material:**	Sediment	**Project:**	
Receive Date:		**Source:**	Hanford		
Sample Age:	11d 0h	**Station:**			

Comments: J116W8

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
02-4594-7010	28d Mean Dry Weight	100	> 100	N/A	23.35%	Equal Variance t Two-Sample
07-8432-1576	28d Proportion Survived	100	> 100	N/A	7.97%	Wilcoxon Rank Sum Two-Sample

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
07-8432-1576	28d Proportion Survived	Control Response	0.96000	0.8 - NL	Yes	Passes acceptability criteria

28d Mean Dry Weight Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.01097	0.02454	13.47%
100		5	0.22880	0.18000	0.27500	0.02008	0.04490	19.62%

28d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.04000	0.08944	9.32%
100		5	0.98000	0.90000	1.00000	0.02000	0.04472	4.56%

28d Mean Dry Weight Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.21000	0.14300	0.18000	0.19000	0.18800
100		0.23300	0.18600	0.27500	0.18000	0.27000

28d Proportion Survived Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Sedim	0.80000	1.00000	1.00000	1.00000	1.00000
100		1.00000 ✓	1.00000 ✓	1.00000 ✓	0.90000 ✓	1.00000 ✓

CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Proportion Survived	Comparison	17-9952-9504	17-9952-9504	10 Apr-06 11:32 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Wilcoxon Rank Sum Two-Sample	C > T	Rank		100	>100	1	N/A	7.97%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	Ties	Decision(0.05)
Dilution Sediment		100	28		0.5000	4	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0020135	0.002013	1	0.17	0.69223	Non-Significant Effect
Error	0.0956028	0.011950	8			
Total	0.09761624	0.0139638	9			

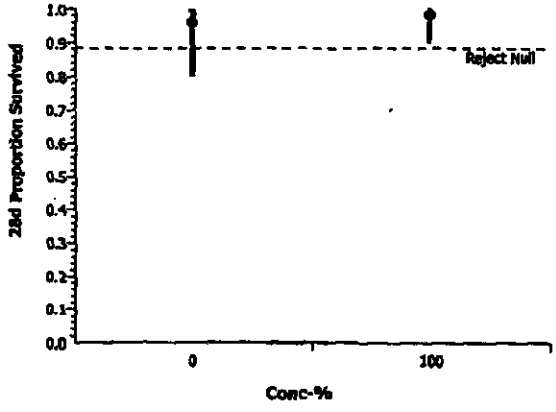
ANOVA Assumptions

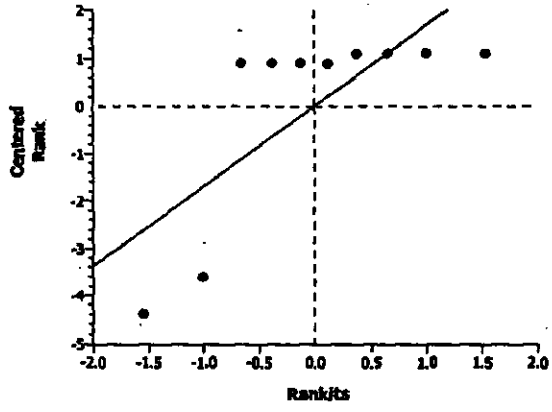
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.49949	23.15450	0.25245	Equal Variances
Distribution	Shapiro-Wilk W	0.64034		0.00017	Non-normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.96000	0.80000	1.00000	0.08944	5.40000	1.00000	6.50000	2.45967
100		5	0.98000	0.90000	1.00000	0.04472	5.60000	2.00000	6.50000	2.01246

Graphics





CETIS Analysis Detail

Hyallela 42-d Survival, Growth, and Reproduction Sediment Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
28d Mean Dry Weight	Comparison	17-9952-9504	17-9952-9504	10 Apr-06 11:33 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Equal Variance t Two-Sample	C > T	Untransformed		100	>100	1	N/A	23.35%

Group Comparisons

Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Sediment		100	-2.0365	1.85955	0.9620	0.04255	Non-Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.0054289	0.005429	1	4.15	0.07608	Non-Significant Effect
Error	0.0104716	0.001309	8			
Total	0.0159005	0.0067379	9			

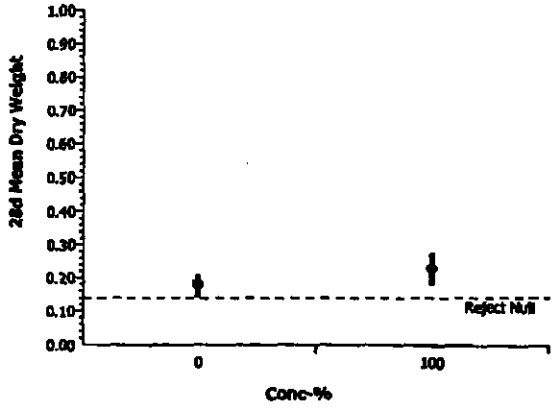
ANOVA Assumptions

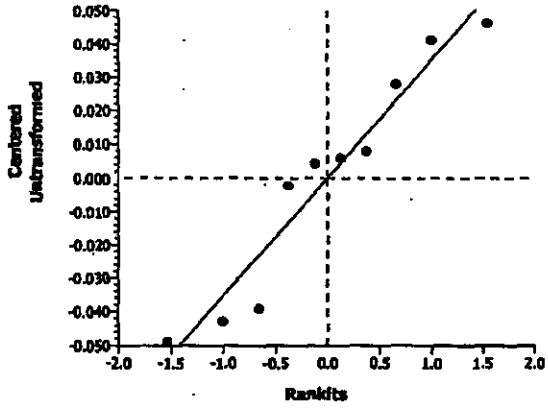
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Variance Ratio F	3.34722	23.15450	0.26880	Equal Variances
Distribution	Shapiro-Wilk W	0.91322		0.30383	Normal Distribution

Data Summary

			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Sedim	5	0.18220	0.14300	0.21000	0.02454				
100		5	0.22880	0.18000	0.27500	0.04490				

Graphics





APPENDIX B
REFERENCE TOXICANT DATA SHEETS

REFERENCE TOXICANT DATA SHEET

Client: QA/QC
Test Organism: Hyallela azteca
Source: Chesapeak Cultures
ID#: Amp. 56
Age: 7 days
Size: -
Loading: -

Reference Toxicant: Cd as $CdCl_2 \cdot 2.5\ H_2O$
Solvent: distilled H_2O Stock Solution: 1ppm Cd
Reagent Log ID #: 1B031-01
*Dilution Water: Recon MH (FHM) ID#: 2605
Total Hardness as CaCO3: 88 Total Alkalinity as CaCO3: 64
Conductivity (µmhos/cm) / Salinity (ppt): 261 Temperature: 20 ± 1°C

Test Begin: Date 3-2-06 Time 1040
Test End: Date 3-4-06 Time 1600

	0 hr	24 hr	48 hr	72 hr	96 hr
Technician	[illegible]	[illegible]	TP		
Time	1040	1100	1600		

Toxicant Concen. µg/L Cd	Test Chamber Number	Number Surviving 0	24	48	72	96	Dissolved Oxygen mg/l 0	24	48	72	96	pH 0	24	48	72	96	Temperature °C 0	24	48	72	96	Cond. 0
Control		10	10	10			8.3	8.4	8.4			7.8	-	7.8			19.8	20.1				248
2		10	10	8			8.3	-	8.5			7.8	-	7.8			19.7	20.1				254
4		10	9	4			8.2	-	8.6			7.8	-	7.8			19.7	20.2				255
8		10	5	2			8.0	-	8.6			7.8	-	7.8			19.7	20.3				256
16		10	5	0			8.1	-	8.6			7.8	-	7.8			19.5	20.3				256
32		10	6	0			8.1	-	8.7			7.6	-	7.8			19.6	20.3				256

Test Acceptability Limits:	Survival in Controls: > or = 90%	For RBT (12°C): >6.0 and <10.8 All Others (at 20°C): > 4.0 and < 9.1	pH: > 6.0 and < 9.0	Temperature ±1 °C

*Dilution Water Code
Recon. - reconstituted water
S - soft
MH - moderately hard
H - hard
ArtSea - Artificial Sea Water

48 h LC50 3.62
Cusum Chart Limits 3.58 to 8.52
Statistical Method Prob.

We verify this data is true and correct.
Task Manager: Doug Winn
Project Manager: [illegible]
QA Officer: Ginger Collins

CETIS Test Summary

Report Date: 06 Mar-06 9:39 AM
Test Link: 01-7581-7320/rhaa056

Hyalella azteca 48-h Acute Survival Test — CH2M Hill

Test No:	07-5700-7546	Test Type:	Survival (48h)	Duration:	53h
Start Date:	02 Mar-06 10:40 AM	Protocol:		Species:	Hyalella azteca
Ending Date:	04 Mar-06 04:00 PM	Dil Water:		Source:	Chesapeak Cultures, Nayes, Virginia
Setup Date:	02 Mar-06 10:40 AM	Brine:			

Sample No:	01-1207-1087	Code:	1B031-01	Client:	QA/QC
Sample Date:	20 Sep-05	Material:	Cadmium	Project:	
Receive Date:	20 Sep-05	Source:	Reference Toxicant		
Sample Age:	163d 10h	Station:	1g/L		

Point Estimate Summary

Analysis	Endpoint	% Effect	Conc-mg/L	95% LCL	95% UCL	Method
04-2914-8908	48h Proportion Survived	50	3.626116	2.203475	5.195412	Linear Regression

48h Proportion Survived Summary

Conc-mg/L	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Water	1	1.00000	1.00000	1.00000			
2		1	0.80000	0.80000	0.80000			
4		1	0.40000	0.40000	0.40000			
8		1	0.20000	0.20000	0.20000			
16		1	0.00000	0.00000	0.00000			0.00%
32		1	0.00000	0.00000	0.00000			0.00%

48h Proportion Survived Detail

Conc-mg/L	Control Type	Rep 1
0	Dilution Water	1.00000
2		0.80000
4		0.40000
8		0.20000
16		0.00000
32		0.00000

CETIS Analysis Detail

Hyallela azteca 48-h Acute Survival Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
48h Proportion Survived	Linear Regression	01-7581-7320	01-7581-7320	06 Mar-06 9:35 AM	CETISv1.1.2

Linear Regression Options

Model Function	Threshold Option	Threshold	Threshold Opt	Reweighted	Pooled Groups	Het Corr
Log-Normal [NED=A+B*log(X)]	Control Threshold	0	Yes	Yes	No	No

Regression Summary

Iters	Log Likelihood	Mu	Sigma	G	Chi-Sq	Critical	P-Value	Decision(0.05)
4	-17.14837	1.00630	0.31315	0.28132	0.64620	7.81473	0.88578	Non-Significant Heterogeneity

Point Estimates

% Effect	Conc-mg/L	95% LCL	95% UCL
50	3.626116	2.203475	5.195412

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Statistic	P-Value	Decision(0.05)
Slope	3.193375	0.8641639	1.499614	4.887136	3.695	0.03439	Significant
Intercept	3.213493	0.6019818	2.033609	4.393377	5.338	0.01285	Significant

Residual Analysis

Attribute	Method	Statistic	Critical	P-Value	Decision(0.05)
Distribution	Shapiro-Wilk W	0.9284734		0.58600	Normal Distribution

Data Summary

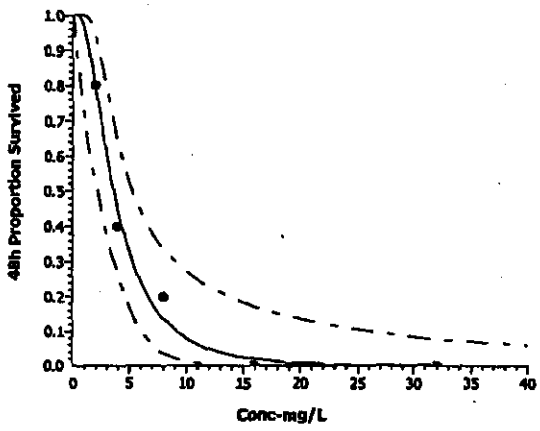
			Calculated Variate(A/B)						
Conc-mg/	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B
0	Dilution Water	1	1.00000	1.00000	1.00000			10	10
2		1	0.80000	0.80000	0.80000			8	10
4		1	0.40000	0.40000	0.40000			4	10
8		1	0.20000	0.20000	0.20000			2	10
16		1	0.00000	0.00000	0.00000			0	10
32		1	0.00000	0.00000	0.00000			0	10

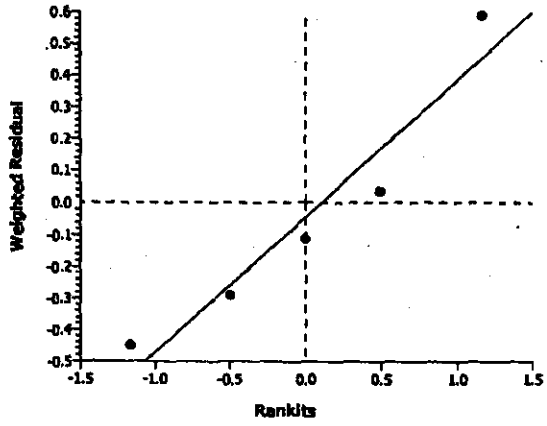
Data Detail

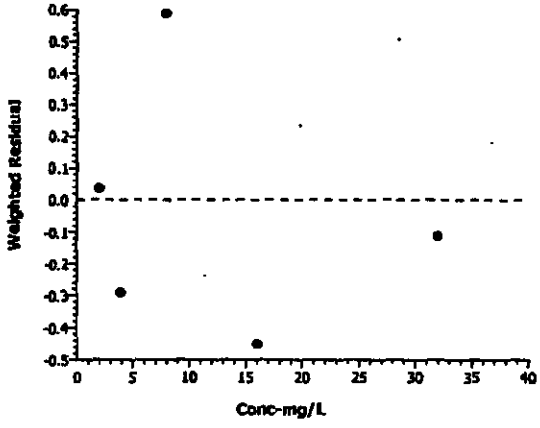
Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	1.00000									
2		0.80000									
4		0.40000									
8		0.20000									
16		0.00000									
32		0.00000									

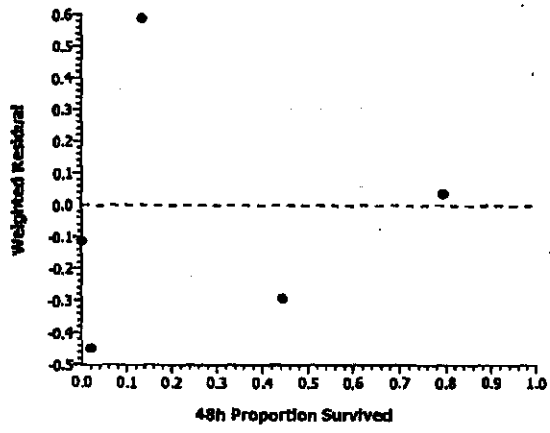
CETIS Analysis Detail

Graphics









REFERENCE TOXICANT DATA SHEET

Client: QA/QC
Test Organism: Hyalella azteca
Source: Chesapeake Cultures
ID#: Amp 57
Age: 4 days
Size: -
Loading: -

Reference Toxicant: Cd as $CdCl_2 \cdot 2.5H_2O$
Solvent: distilled
Stock Solution: 13038-04
~~Reagent Log~~ Lot ID #: 1 ppm Cd
*Dilution Water: Recon MH (Ftm) ID#: 2609
Total Hardness as CaCO3: 96
Total Alkalinity as CaCO3: 66
Conductivity (µmhos/cm) & Salinity (ppt): 278
Temperature: 20.1°C

Test Begin: Date 3-7-06 Time 1350
Test End: Date 3-9-06 Time 1440

	0 hr	24 hr	48 hr	72 hr	96 hr
Technician	[illegible]	[illegible]	[illegible]		
Time	1350	0850	1440		

Toxicant Concen. (µg/L Cd)	Test Chamber Number	Number Surviving 0	24	48	72	96	Dissolved Oxygen mg/l 0	24	48	72	96	pH 0	24	48	72	96	Temperature °C 0	24	48	72	96	Cond. 0
Control		8	8	8			8.2	8.4	8.2			8.3	8.4	8.1			21.0	20.2	20.1			283
2		10	10	9			8.4	8.4	8.3			8.3	8.4	8.1			21.0	20.2	20.1			278
4		10	9	7			8.5	8.4	8.4			8.2	8.4	8.1			21.0	20.3	20.0			279
8		10	10	2			8.5	8.5	8.5			8.1	8.4	8.0			21.0	20.3	20.0			276
16		10	6	0			8.5	8.4	8.5			8.0	8.4	7.9			21.0	20.1	20.1			274
32		10	3	0			8.5	8.5	8.5			8.0	8.3	7.9			21.0	20.2	20.1			269
Test Acceptability Limits:		Survival in Controls: > or = 90%					For RBT (12°C): >6.0 and <10.8; All Others (at 20°C): > 4.0 and < 9.1					pH: > 6.0 and < 9.0					Temperature ±1 °C					

*Dilution Water Code
Recon. - reconstituted water
S - soft
MH - moderately hard
H - hard
ASW - Artificial Sea Water

42 h LC50 4.0

Cusum Chart Limits 3.5 to 8.3

Statistical Method P.S.T

We verify this data is true and correct.

Task Manager [signature]

Project Manager [signature]

QA Officer [signature] for Jeff Schut

CETIS Test Summary

Report Date: 10 Mar-06 8:26 AM
Test Link: 04-1225-5904/rhaa057

Hyallela azteca 48-h Acute Survival Test — CH2M Hill

Test No:	15-2044-2609	Test Type:	Survival (48h)	Duration:	49h
Start Date:	07 Mar-06 01:50 PM	Protocol:		Species:	Hyalella azteca
Ending Date:	09 Mar-06 02:40 PM	Dil Water:		Source:	Chesapeak Cultures, Nayes, Virginia
Setup Date:	07 Mar-06 01:50 PM	Brine:			

Sample No:	09-8569-0274	Code:	1B038-04	Client:	
Sample Date:	07 Mar-06	Material:	Cadmium	Project:	
Receive Date:		Source:	Reference Toxicant		
Sample Age:	14h	Station:			

Comments: Cd as CdCl2 x 2.5 H20

Point Estimate Summary

Analysis	Endpoint	% Effect	Conc-µg/L	95% LCL	95% UCL	Method
11-1794-6219	48h Proportion Survived	50	4.842365	3.422664	6.719178	Linear Regression

48h Proportion Survived Summary

Conc-µg/L	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Water	1	1.00000	1.00000	1.00000			
2		1	0.90000	0.90000	0.90000			
4		1	0.70000	0.70000	0.70000			
8		1	0.20000	0.20000	0.20000			
16		1	0.00000	0.00000	0.00000			0.00%
32		1	0.00000	0.00000	0.00000			0.00%

48h Proportion Survived Detail

Conc-µg/L	Control Type	Rep 1
0	Dilution Water	1.00000
2		0.90000
4		0.70000
8		0.20000
16		0.00000
32		0.00000

CETIS Analysis Detail

Hyallela azteca 48-h Acute Survival Test — CH2M Hill

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
48h Proportion Survived	Linear Regression	04-1225-5904	04-1225-5904	10 Mar-06 8:26 AM	CETISv1.1.2

Linear Regression Options

Model Function	Threshold Option	Threshold	Threshold Opt	Reweighted	Pooled Groups	Het Corr
Log-Normal [NED=A+B*log(X)]	Control Threshold	0	Yes	Yes	No	No

Regression Summary

Iters	Log Likelihood	Mu	Sigma	G	Chi-Sq	Critical	P-Value	Decision(0.05)
4	-14.77436	0.55966	0.24894	0.24019	0.66379	7.81473	0.88169	Non-Significant Heterogeneity

Point Estimates

% Effect	Conc-µg/L	95% LCL	95% UCL
50	4.842365	3.422664	6.719178

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Statistic	P-Value	Decision(0.05)
Slope	4.016983	1.004429	2.048303	5.985663	3.999	0.02802	Significant
Intercept	2.248136	0.7485508	0.780976	3.715295	3.003	0.05752	Not Significant

Residual Analysis

Attribute	Method	Statistic	Critical	P-Value	Decision(0.05)
Distribution	Shapiro-Wilk W	0.9421834		0.68141	Normal Distribution

Data Summary

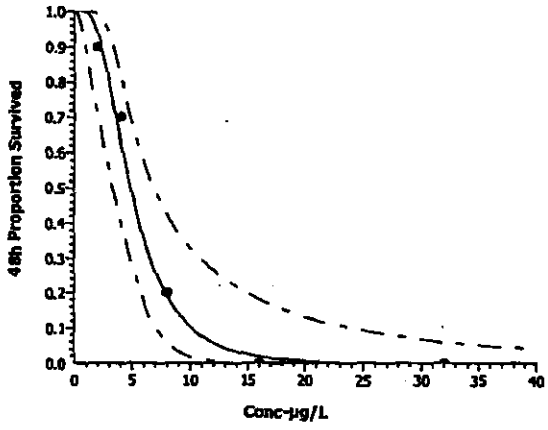
			Calculated Variate(A/B)						
Conc-µg/L	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B
0	Dilution Water	1	1.00000	1.00000	1.00000			8	8
2		1	0.90000	0.90000	0.90000			9	10
4		1	0.70000	0.70000	0.70000			7	10
8		1	0.20000	0.20000	0.20000			2	10
16		1	0.00000	0.00000	0.00000			0	10
32		1	0.00000	0.00000	0.00000			0	10

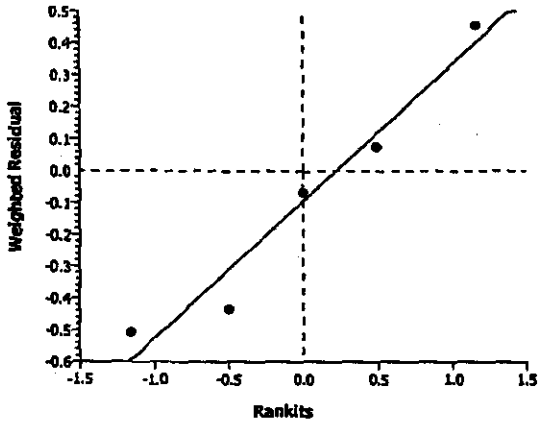
Data Detail

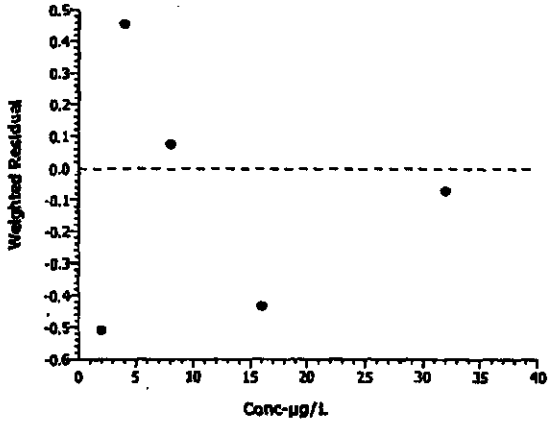
Conc-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	1.00000									
2		0.90000									
4		0.70000									
8		0.20000									
16		0.00000									
32		0.00000									

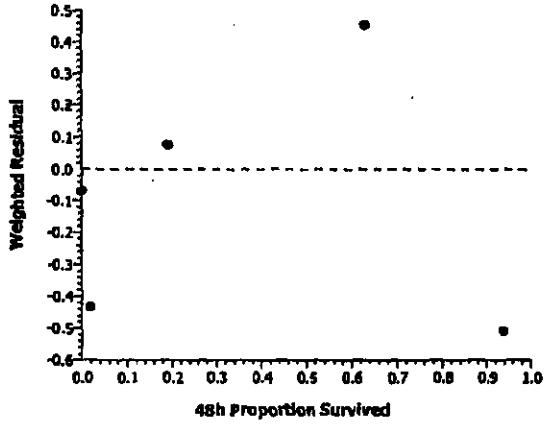
CETIS Analysis Detail

Graphics









APPENDIX C
CHAIN OF CUSTODY

F1162

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-6	Page 1 of 1

Collector: JE Bernhard	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9N Data Turnaround: 21 Days
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: ~~300-1~~ REF #16 SEB 2-5-06	SAF No.: RC-047	Air Quality ☐
Ice Chest No.: SHWS-336	Field Logbook No.: EL-1598 7 SEB 2-5-06 COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT	
Shipped To: CH2MHILL	Offsite Property No.: A060151	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	1	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								
Sample No. / Matrix * / Sample Date / Sample Time											
J11143 / OTHER SOLID / 02-05-06 / 1130	X	X	X								-1

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: JAMES BERNHARD, Date/Time 02-05-06 1400	Received By/Stored In: EAS LOCKED STORAGE, Date/Time 02-05-06 1400	(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time 02-06-06 0745	Received By/Stored In: RC Stoffler R.J. Stoffl, Date/Time 2-6-06 0745	31533-01 for Hypolite
Relinquished By/Removed From: RC Stoffler R.J. Stoffl, Date/Time 2-6-06 1500	Received By/Stored In: Fed Ex, Date/Time	
Relinquished By/Removed From: FED EX, Date/Time	Received By/Stored In: KMcKinley, Date/Time 2/7/06 1020	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	

Matrix *: S=Soil; SE=Sediment; SO=Solid; SL=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; WI=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By: KMcKinley	Title	Date/Time: 2/7/06 1020
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-9	Page 1 of 1

Collector: JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U-2		SAF No.: RC-047
Ice Chest No.: AFS-04-050	Field Logbook No.: EL-15997 JBB 2-8-06	COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT
Shipped To: CH2MHILL	Offsite Property No.: A060151		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 9N

Air Quality: [ ]

Data Turnaround: 21 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None									
Type of Container	G/P	P/G	P/G									
No. of Container(s)	2 JBB 2-8-06	1	1									
Volume	1000g	3000g	19000g									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11									

Sample No.	Matrix *	Sample Date	Sample Time										
J11146	OTHER SOLID	2-8-06	1245	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-8-06 1700	Received By/Stored In: EAS LOCKED STORAGE — Date/Time: 2-8-06 1700
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-9-06 0715	Received By/Stored In: RZ Stoffler R.Z. Stoffler — Date/Time: 2-9-06 0715
Relinquished By/Removed From: RZ Stoffler R.Z. Stoffler	Date/Time: 2-9-06 1500	Received By/Stored In: Fed Ex — Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time:	Received By/Stored In: Brett Mulvey — Date/Time: 2-10-06 1400
Relinquished By/Removed From	Date/Time:	Received By/Stored In: — Date/Time:
Relinquished By/Removed From	Date/Time:	Received By/Stored In: — Date/Time:

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1539-02 for Hydride
B1539-02 for nitrate / pack chl
COC seals intact

Matrix *

S=Soil
SD=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-7	Page 1 of 1

Collector: JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9N	Data Turnaround: 21 Days
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 300-2		SAF No.: RC-047	Air Quality ☐	
Ice Chest No.: AFS-04-050	Field Logbook No.: EL-15987	COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT		
Shipped To: CH2MHILL	Offsite Property No.: A060151		Bill of Lading/Air Bill No.: SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	2	1	1								
Volume	1000g	3000g	19000g								

SAMPLE ANALYSIS				See item (1) in Special Instructions	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11							
Sample No.	Matrix *	Sample Date	Sample Time										
J11144	OTHER SOLID	2-8-06	1430	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-8-06 1700	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 2-8-06 1700
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-9-06 0715	Received By/Stored In: RZ Stiffler	Date/Time: 2-9-06 0715
Relinquished By/Removed From: RZ Stiffler	Date/Time: 2-9-06 1500	Received By/Stored In: Fed Ex	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time:	Received By/Stored In: Brett Mulkey	Date/Time: 2-10-06 1400
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1538-03 for Hyacinth
B1539-03 for Mustard / Pak Choi
COC seals intact on arrival

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-8	Page 1 of 1

Collector: JEB JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 21 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U-1		SAF No.: RC-047
Ice Chest No.: AFS-04-050	Field Logbook No.: EL-1598 7 JEB 2-8-06	COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT
Shipped To: CH2MHILL	Offsite Property No.: A060151		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	#2 JEB 2-8-06	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J11145	OTHER SOLID	2-8-06	1130	X	X	X							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: JAMES BERNHARD	1700 2-8-06	EAS LOCKED STORAGE	1700 2-8-06
Relinquished By/Removed From: JAMES BERNHARD	0715 2-9-06	Received By/Stored In: RZ Stoffler	0715 2-9-06
Relinquished By/Removed From: RZ Stoffler	1500 2-9-06	Received By/Stored In: Fed. Ex	
Relinquished By/Removed From: Fed. Ex		Received By/Stored In: Scott Mackey	1400 2-10-06
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

31538-04 for Hyalella
31539-04 for Microtox/pulechai

COC seals intact on arrival

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx Express

Ship Date: 09FEB06
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Account#: S *********

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[redacted]

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SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

[redacted]

PRIORITY OVERNIGHT

FRI
Deliver By:
10FEB06

TRK# 7918 5661 0690 FORM 0201

PDX AA

97339 -OR-US

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From: Origin ID: (509)376-7788
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

Ship Date: 09FEB06
ActWgt: 78 LB
System#: 5851986/INET2400
Account#: S **********

REF: A060151

[redacted]

Delivery Address Bar Code

SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

[redacted]

PRIORITY OVERNIGHT

FRI
Deliver By:
10FEB06

TRK# 7918 5661 0680 FORM 0201

PDX AA

97339 -OR-US

86 CVOA

[redacted]

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From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx Express

Ship Date: 09FEB06
ActWgt: 55 LB
System#: 5851986/INET2400
Account#: S *********

REF: A060151

[redacted]

Delivery Address Bar Code

SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

[redacted]

PRIORITY OVERNIGHT

FRI
Deliver By:
10FEB06

TRK# 7918 5661 0705 FORM 0201

PDX AA

97339 -OR-US

86 CVOA

[redacted]

Shipping Label

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Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-50	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location REF Z SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-99-065	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None
Type of Container	G/P	P/G	P/G
No. of Container(s)	~~1~~ 2 EB 2-9-06	1	1
Volume	1000g	3000g	19000g

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See Item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11
J116N1	OTHER SOLID	2-9-06	1530	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1930 2-9-06	EAS LOCKED STORAGE	1830 2-9-06
EAS LOCKED STORAGE	0745 02-13-06	RZ Stiffler R.Z. Stiffl	0745 2-13-06
RZ Stiffler R.Z. Stiffl	1500 WTH 2-13-06	Fed Ex	
FED-X	1415 2-14-06	Mike Stanaway	2-14-06 1100

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1538-05 = Hydaline
B1539-05 = Nutsedge/Pakchoi
F1192-01
CoC intact.

Matrix *
S=Soil
Sl=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
Dr=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-52	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 21 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: REF/3SEDIMENT		SAF No.: RC-047
Ice Chest No.: ERC-99-065	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT
Shipped To: CH2MHILL	Offsite Property No.: A060151		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None
Type of Container	G/P	P/G	P/G
No. of Container(s)	2 2-9-06 KW	1	1
Volume	1000g	3000g	19000g

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See Item (1) in Special Instructions	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11
J116N3	OTHER SOLID	2-9-06	1400	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-9-06 1400	EAS LOCKED STORAGE	2-9-06 1400
EAS LOCKED STORAGE	02-13-06 0745	R Stettler	2-13-06 0745
R Stettler	2-13-06 1500 with	Fed Ex	
Fed-X		Mike Sanway	2-14-06 1100

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1538-06 Hyalella
B1539-06 Nutsedge/Pakchoi
Custody seals intact
F1192-02

Matrix *
SoSoil
SESediment
SOSolid
SlSludge
W = Water
OOil
AnAir
DSDrum Solids
DLDrum Liquids
TTissue
WIpWipe
LqLiquid
VgVegetation
XOther

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-27	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 21 Days	Air Quality: [ ]	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Cr 5, SEDIMENT		SAF No.: RC-047
Ice Chest No.: ERC-96-012	Field Logbook No.: EL-1596 7 & 1310 6	COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT
Shipped To: CH2MHILL	Offsite Property No.: A060151		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None									
Type of Container	G/P	Poly Bag	Poly Bag									
No. of Container(s)	~~1~~ 2 2-12-06	1	1									
Volume	1000g	3000g	19000g									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11									

Sample No.	Matrix *	Sample Date	Sample Time											
J112B7	OTHER SOLID	2-12-06	1200	X	X	X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-12-06 1900	EAS LOCKED STORAGE	2-12-06 1900
EAS LOCKED STORAGE	02-13-06 0745	RZ Stoffler	2-13-06 0745
RZ Stoffler	2-13-06 1500	Fed Ex	
Fed-X		Mike Starowicz	2-14-06

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

Cooler temp for Chemical analysis = 1.4°C

B1538-07 Hyptella

B1539-07 Nutsedge/Pakcho.

Custody seals intact

F1192-03

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-51	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 21 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: REF/SEDIMENT		SAF No.: RC-047
Ice Chest No.: ERC-96-012	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT
Shipped To: CH2MHILL	Offsite Property No.: A060151		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None
Type of Container	G/P	P/G	P/G
No. of Container(s)	4 DEB 2-9-06	1	1
Volume	1000g	3000g	19000g
SAMPLE ANALYSIS	See item (1) in Special Instructions	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11

Sample No.	Matrix *	Sample Date	Sample Time			
J116N2	OTHER SOLID	2-9-06	1445	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: JAMES BERNHARD	2-9-06 1830	EAS LOCKED STORAGE	2-9-06 1830
Relinquished By/Removed From: EAS LOCKED STORAGE	02-13-06 0745	RC Stoffler	2-13-06 0745
Relinquished By/Removed From: RC Stoffler	2-13-06 1500	Fed Ex	
Relinquished By/Removed From: Fed-Ex		Received By/Stored In: [illegible]	2-14-06 1100
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1538-08 Hydrilla

B1539-08 Nutsedge/Pickerel

custody seals intact

F1142-04

Matrix *: S=Soil; SE=Sediment; SO=Solid; Sl=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; Wi=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-43	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 21 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Cr9 SEDIMENT		SAF No.: RC-047
Ice Chest No.: AFS-04-034	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT
Shipped To: CH2MHILL	Offsite Property No.: A060151		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

~~COOL 4C~~ RZS 2-13-06
Cool 4°C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	SEE RZ 2-13-06	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J116M4	OTHER SOLID	2-12-06	1400	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-12-06 1900	EAS LOCKED STORAGE	2-12-06 1900
EAS LOCKED STORAGE	02-13-06 0745	RZ Stoffler	2-13-06 0745
RZ Stoffler with	2-13-06 1500	Fed Ex	
Fed-X		[illegible]	2-14-06 1100

SPECIAL INSTRUCTIONS — Cooler Temp = 1.4°C

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1538-09 ns Hyalella
B1539-09 Nutsedge/Pokeweed
Custody seals intact

F1192-05

Matrix *: S=Soil; SE=Sediment; SO=Solid; Sl=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; Wi=Wipe; L=Liquid; Ve=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-49	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER / Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N / Data Turnaround 21 Days
Protect Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location REF/14 SEDIMENT	SAF No. RC-047	Air Quality ☐
Ice Chest No. ERC-96-058	Field Logbook No. EL-1597 / COA BESRAS6520	Method of Shipment GROUND TRANSPORT	
Shipped To CH2MHILL	Offsite Property No. A060151	Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage
COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	SEE #2 2-9-06	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J116N0	OTHER SOLID	2-9-06	1230	X	X	X							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From JAMES BERNHARD	1830 2-9-06	Received By/Stored In EAS LOCKED STORAGE	1830 2-9-06
Relinquished By/Removed From EAS LOCKED STORAGE	02-13-06 0745	Received By/Stored In RZ Stoffler R.J. Stoffler	0745 2-13-06
Relinquished By/Removed From RZ Stoffler R.J. Stoffler	1500 2-13-06	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In Brett Markley	1300 2-14-06
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1538-10
B1539-10
COC seals intact

F1192-06

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
Ve=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-97	Page 1 of 1

Collector TIELER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location REF//, SEDIMENT FULL QC		SAF No. RC-047
Ice Chest No. ERC-96-058	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9N

Air Quality ☐

Data Turnaround 21 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	~~1~~ x2 SEE 2-9-06	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J11731	OTHER SOLID	2-9-06	1600	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1830 2-9-06	Received By/Stored In EAS LOCKED STORAGE — Date/Time 1830 2-9-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0745 02-13-06	Received By/Stored In RZ Stoffler R.J. Stoffler — Date/Time 0745 2-13-06
Relinquished By/Removed From RZ Stoffler R.J. Stoffler	Date/Time 1500 2-13-06	Received By/Stored In Fed Ex — Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In Brett Mulkey — Date/Time 1700 2-14-06
Relinquished By/Removed From	Date/Time	Received By/Stored In — Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In — Date/Time

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

31539-11

B1539-11

COC seals intact

F1192-07

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
Tu=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BH-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-44	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr/oSEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-501	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	X2 2-12-06	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J116M5	OTHER SOLID	2-12-06	1530	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1500 2-12-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1500 2-12-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 02-13-06 0745	Received By/Stored In RZ Steffler	Date/Time 0745 2-13-06
Relinquished By/Removed From RZ Steffler	Date/Time 1500 2-13-06	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In Bess Muley	Date/Time 1500 2-14-06
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1538-12

B1539-12

COC seals intact

F1192-08

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-47	Page 1 of 1
Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER; Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N; Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr6SEDIMENT · FULL QC	SAF No. RC-047	Air Quality ☐
Ice Chest No. ERC-02-501	Field Logbook No. EL-1597; COA BESRAS6520	Method of Shipment GROUND TRANSPORT	
Shipped To CH2MHILL	Offsite Property No. A060151	Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage
COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	1	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EGDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J116M8	OTHER SOLID	2-12-06	1315	X	X	X							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From JAMES BERNHARD	2-12-06 1900	Received By/Stored In EAS LOCKED STORAGE	2-12-06 1900
Relinquished By/Removed From EAS LOCKED STORAGE	02-13-06 0745	Received By/Stored In RZ Steffler R.Z. Steffler	2-13-06 0745
Relinquished By/Removed From RZ Steffler R.Z. Steffler	2-13-06 1500	Received By/Stored In Fed Ex	
Relinquished By/Removed From Fed Ex		Received By/Stored In Bergs Marks	2-14-06 1300
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

31538-13
31539-13
COC seals intact

F1192-09

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
Vs=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx. Express

Ship Date: 13FEB06
ActWgt: 72 LB
System#: 5851966/INET2400
Account#: S *********

REF: A060151

[redacted]

Delivery Address Bar Code

SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

[redacted]

PRIORITY OVERNIGHT **TUE**

Deliver By: 14FEB06

TRK# 7913 7159 9081 FORM 0201

PDX AA

97339 -OR-US

86 CVOA

[redacted]

Shipping Label

View all labels

Place label in shipping label pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

B1538-05-13 & B1539-05-13

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

Ship Date: 13FEB06
ActWgt: 76 LB
System#: 5851966/INET2400
Account#: S *********

REF: A060151

[redacted]

Delivery Address Bar Code

SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

[redacted]

PRIORITY OVERNIGHT

TUE
Deliver By:
14FEB06

TRK# 7903 2014 0379 FORM 0201

PDX AA

97339 -OR-US

86 CVOA

[redacted]

Shipping Label

View all labels

Place label in shipping label pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

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B1539 & B1558-05-13

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx Express

Ship Date: 13FEB06
ActWgt: 26 LB
System#: 5851966/INET2400
Account#: S *********

REF: A060151

[redacted]

Delivery Address Bar Code

SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

[redacted]

PRIORITY OVERNIGHT

TUE
Deliver By:
14FEB06

TRK# 7913 7159 9059 FORM 0201

PDX AA

97339 -OR-US

86 CVOA

[redacted]

Shipping Label

View all labels

Place label in shipping label pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

B1538 & B1539 - 05-13

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx. Express

Ship Date: 13FEB06
ActWgt: 95 LB
System#: 5851986/INET2400
Account#: S *********

REF: A060151

[redacted]

Delivery Address Bar Code

SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

[redacted]

PRIORITY OVERNIGHT

TUE
Deliver By:
14FEB06

TRK# 7903 2014 0368 FORM 0201

PDX AA

97339 -OR-US

86 CVOA

[redacted]

Shipping Label

View all labels

Place label in shipping label pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

B1538 & B1539 - 05 - 13

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

Ship Date: 13FEB06
ActWgt: 78 LB
System#: 5851986/INET2400
Account#: S **********

REF: A060151

[redacted]

Delivery Address Bar Code

SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

[redacted]

PRIORITY OVERNIGHT **TUE**

Deliver By: 14FEB06

TRK# 7913 7159 9070 FORM 0201

PDX AA

97339 -OR-US

86 CVOA

[redacted]

Shipping Label

View all labels

Place label in shipping label pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

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B1538 & B1539 - 05 - 13

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx Express

Ship Date: 13FEB06
ActWgt: 88 LB
System#: 5851986/INET2400
Account#: S ********

REF: A060151

[redacted]

Delivery Address Bar Code

SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

[redacted]

PRIORITY OVERNIGHT

TUE
Deliver By:
14FEB06

TRK# 7903 2014 0390 FORM 0201

PDX AA

97339 -OR-US

86 CVOA

[redacted]

Shipping Label

View all labels

Place label in shipping label pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

B 1538 & B 1539 - 05-13

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-128	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9N	Data Turnaround: 21 Days
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U3, SEDIMENT		SAF No.: RC-047	Air Quality ☐	
Ice Chest No.: ERC-99-027	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT		
Shipped To: CH2MHILL	Offsite Property No.: A060151		Bill of Lading/Air Bill No.: SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None
Type of Container	G/P	P/G	P/G
No. of Container(s)	JEB x2 2-13-06	1	1
Volume	1000g	3000g	19000g

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11
J11752	OTHER SOLID	2-13-06	1345	X	X	X

CHAIN OF POSSESSION / **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1730 2-13-06	EAS LOCKED STORAGE	1730 2-13-06
EAS LOCKED STORAGE	0700 2-14-06	R2 Steffler R.J. Steffler	0700 2-14-06
R2 Steffler R.J. Steffler	1600 WEH 2-14-06	Fed Ex	
Fed Ex		Pat Murray Patt Murray	11:00 2-16-06

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

3000g logged in as B1539-14 received 2-15-06
19000g logged in as ~~B1539-13~~ B1539-14 received 2-15-06

COC received 2-16-06, COC seals intact @ 3.0°C
1000g containers (2) arrived w/COC on 2-16-06
F1207-01 for chemistry

Matrix *

Se=Soil
SB=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
Li=Liquid
Ve=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-121	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U 6, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-99-027	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None									
Type of Container	G/P	P/G	P/G									
No. of Container(s)	1 2 2-13-06	1	1									
Volume	1000g	3000g	19000g									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11									

Sample No.	Matrix *	Sample Date	Sample Time										
J11745	OTHER SOLID	2-13-06	1145	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD Date/Time 1730 2-13-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1730 2-13-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0900 2-14-06	Received By/Stored In RZ Stoffler Date/Time 2-14-06 / 0900	
Relinquished By/Removed From RZ Stoffler Date/Time 1600 2-14-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex Date/Time	Received By/Stored In Date/Time 1100 2-16-06	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

COC seals intact

31532-15 for Hydrolab (3000g)

31539-15 for Metcalfe / Pickett (19000g)

F1207.02 for Chem lab (2x1000g) @ 3.0°C

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
Ve=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-126	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U 8, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-049	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	1	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J11750	OTHER SOLID	2-13-06	1545	X	X	X							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1730 2-13-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1730 2-13-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0700 02-14-06	Received By/Stored In RE Stettler	Date/Time 0700 2-14-06
Relinquished By/Removed From RE Stettler	Date/Time 1600 2-14-06	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In Brett Mackey	Date/Time 1100 2-16-06
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

COC seals intact

21538-16 for Hydride (3x100g)

31538-16 for Nutrients / Pick chem (15x100g)

F1207-03 for Chemistry (2x1000g) @ 3.0°C

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
Tu=Tissue
Wi=Wipe
Li=Liquid
Vs=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-127	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U3, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-049	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None									
Type of Container	G/P	P/G	P/G									
No. of Container(s)	SPB # 2 2-13-06	1	1									
Volume	1000g	3000g	19000g									
SAMPLE ANALYSIS	See Item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11									
Sample No.	Matrix *	Sample Date	Sample Time									
J11751	OTHER SOLID	2-13-06	1445	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1730 2-13-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1730 2-13-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0700 02-14-06	Received By/Stored In RL Stoffler	Date/Time 0700 2-14-06
Relinquished By/Removed From RL Stoffler	Date/Time 1600 WCH 2-14-06	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In Brett Mackey	Date/Time 1100 2-16-06
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

COC seals intact
B1538-17 for Hyalella (3000g)
B1539-17 for Nutsedge / Pelochi (1500g)
F1207-04 for Chemistry @ 3.0°C

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
VE=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-129	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U 7, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-007	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	SEE #2 2-13-06	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J11753	OTHER SOLID	2-13-06	1245	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1730 2-13-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1730 2-13-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0700 02-14-06	Received By/Stored In RZ Steffler RJ Steffler	Date/Time 0700 2-14-06
Relinquished By/Removed From RZ Steffler RJ Steffler	Date/Time 1600 2-14-06	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In Scott Markey	Date/Time 1100 2-16-06
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

CUC seals intact
D1538-18 for Hydrides (3 days)
D1539-18 for Nitrates / Pink Chrom (15 days)
F1207-05 for Chemistry @ 3.0°C

Matrix *
SoSoil
SESediment
SOSolid
SlSludge
W = Water
OOil
AAir
DSDrum Solids
DLDrum Liquids
TsTissue
WIWipe
LaLiquid
VaVegetation
XOther

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx Express

Ship Date: 14FEB06
ActWgt: 116 LB
System#: 5851986/INET2400
Account#: S ********

REF: A060151

[redacted]

Delivery Address Bar Code

SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

[redacted]

PRIORITY OVERNIGHT

WED
Deliver By:
15FEB06

TRK# 7913 7327 4586 FORM 0201

PDX AA

97339 -OR-US

86 CVOA

[redacted]

Shipping Label

View all labels

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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Color received 2-10-06

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx Express

Ship Date: 14FEB06
ActWgt: 64 LB
System#: 5851986/INET2400
Account#: S *********

REF: A060151

[redacted]

Delivery Address Bar Code

SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

[redacted]

PRIORITY OVERNIGHT **WED**

Deliver By: 15FEB06

TRK# 7913 7327 4612 FORM 0201

PDX AA

97339 -OR-US

86 CVOA

[redacted]

Shipping Label

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cooler received 2-16-06

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx Express

Ship Date: 14FEB06
ActWgt: 91 LB
System#: 5851986/INET2400
Account#: S *********

REF: A060151

[redacted]

Delivery Address Bar Code

SHIP TO: (541)768-3127 BILL THIRD PARTY

LIZ TEPPER
CH2M HILL
APPLIED SCIENCE LABORATORY
2300 NW WALNUT BLVD.
CORVALLIS, OR 97339

[redacted]

PRIORITY OVERNIGHT

WED
Deliver By:
15FEB06

TRK# 7913 7327 4575 FORM 0201

PDX AA

97339 -OR-US

86 CVOA

[redacted]

Shipping Label

View all labels

Place label in shipping label pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Cooler received 2-16-06

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-122	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U 4, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-96-096	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	12 SEB 2-19-06	1	20 SEB 2-19-06								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J11746	OTHER SOLID	2-19-06	1500	X	X	X 2-19-06							
				F1239-1	B1538-19								

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix *
Relinquished By/Removed From JAMES BERNHARD Date/Time 2-19-06 1800	Received By/Stored In EAS LOCKED STORAGE Date/Time 2-19-06 1800	(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422 B1538-19	S=Soil SE=Sediment SO=Solid Sl=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wi=Wipe Li=Liquid Ve=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 2-21-06 0900	Received By/Stored In RZ Stoffler Date/Time 2-21-06 0900		
Relinquished By/Removed From RZ Stoffler Date/Time 2-21-06 1600	Received By/Stored In Fed Ex Date/Time		
Relinquished By/Removed From Date/Time	Received By/Stored In Doug Wann Date/Time 2-22-06 1350		
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time		
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time		

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-123	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U 9, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-96-096	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None
Type of Container	G/P	P/G	P/G
No. of Container(s)	X2 SEB 2-19-06	1	X0 SEB 2-19-06
Volume	1000g	3000g	19000g
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11

Sample No.	Matrix *	Sample Date	Sample Time			
J11747	OTHER SOLID	2-19-06	1600	X	X	X 2-19-06 SEB
				F1239-2	B1538-20	

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix *
Relinquished By/Removed From JAMES BERNHARD Date/Time 1800 2-19-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1800 2-19-06	(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422	S=Soil SE=Sediment SO=Solid Sl=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wi=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From EAS LOCKED STORAGE 2-21-06 Date/Time 0900	Received By/Stored In RZ Stoffler R.J. Stoffler Date/Time 0900 2-21-06	B1538-20	
Relinquished By/Removed From RZ Stoffler R.J. Stoffler Date/Time 1600 WCH 2-21-06	Received By/Stored In Fed Ex Date/Time		
Relinquished By/Removed From Date/Time	Received By/Stored In Doug Nunn 2-22-06 / 1350		
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time		
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time		

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-124	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U/o, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-96-096	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	2 2-19-06	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J11748	OTHER SOLID	2-19-06	1640	X	X	X							
				F1239-3	B1538-21								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-19-06 1500	EAS LOCKED STORAGE	2-19-06 1500
EAS LOCKED STORAGE	2-21-06 0900	RZ Stoffler RZ Stoffler	2-21-06 0900
RZ Stoffler RZ Stoffler	2-21-06 1600	Fed Ex	
		Doug Winn	2-22-06 1350

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1538-21

Matrix *

SeSoil
SEsSediment
SOsSolid
SlsSludge
W = Water
OsOil
A=Air
DSsDrum Solids
DLsDrum Liquids
TsTissue
WIsWipe
LsLiquid
VsVegetation
XsOther

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-125	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U , SEDIMENT 300-1		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-96-096	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Containers(s)	+2 3PB 2-19-06	1	+0 3PB 2-19-06								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J11749	OTHER SOLID	2-19-06	1400	X	X	X 2-19-06							
				F1239-4	B1538-22								

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From JAMES BERNHARD	2-19-06 1800	Received By/Stored In EAS LOCKED STORAGE	2-19-06 1800
Relinquished By/Removed From EAS LOCKED STORAGE	2-21-06 0900	Received By/Stored In RZ Steffler	2-21-06 0900
Relinquished By/Removed From RZ Steffler	2-21-06 1600	Received By/Stored In Fed. Ex	
Relinquished By/Removed From		Received By/Stored In Doug Nunn	2-22-06 1350
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1538-22

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
Li=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx Express

Ship Date: 21FEB06
ActWgt: 61 LB
System#: 5851988/INET2400
Account#: S *********

REF: BESRA S6520

[redacted]

Delivery Address Bar Code

SHIP TO: (541)752-4271 BILL THIRD PARTY

SAMPLE RECEIVING
APPLIED SCIENCE LABORATORY
2300 NORTHWEST WALNUT BLVD.
CH2M HILL A060151
CORVALLIS, OR 97330

[redacted]

PRIORITY OVERNIGHT

WED
Deliver By:
22FEB06

TRK# 7913 8094 0144 FORM 0201

PDX AA

97330 -OR-US

86 CVOA

[redacted]

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From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx Express

Ship Date: 21FEB06
ActWgt: 52 LB
System#: 5851986/INET2400
Account#: S ********

REF: BESRAS6520

[redacted]

Delivery Address Bar Code

SHIP TO: (541)752-4271 BILL THIRD PARTY

SAMPLE RECEIVING
APPLIED SCIENCE LABORATORY
2300 NORTHWEST WALNUT BLVD.
CH2M HILL A060151
CORVALLIS, OR 97330

[redacted]

PRIORITY OVERNIGHT

WED
Deliver By:
22FEB06

TRK# 7913 8094 0155 FORM 0201

PDX AA

97330 -OR-US

86 CVOA

[redacted]

Shipping Label

View all labels

Place label in shipping label pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-23	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER / Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N / Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 1, SEDIMENT	SAF No. RC-047	Air Quality [ ]
Ice Chest No. AFS-04-008	Field Logbook No. EL-15987 AND 19106 / COA BESRAS6520	Method of Shipment GROUND TRANSPORT	
Shipped To CH2MHILL	Offsite Property No. A060151	Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	Poly Bag	Poly Bag								
No. of Container(s)	12 JBB 2-21-06	1	10 JBB 2-21-06								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J112B3	OTHER SOLID	2-21-06	1100	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-21-06 1900	EAS LOCKED STORAGE	2-21-06 1900
EAS LOCKED STORAGE	2-22-06 0830	RZ Stoffler	2-22-06 0830
RZ Stoffler	2-22-06 1600	Fed Ex	
Fed Ex		Brett Hickey	2-23-06 1050

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

D5538-23 for Hydrolyzing coc seals intact

F1242-01 for chem

6.1°C on arrival

Matrix *

S=Soil
SE=Sediment
SD=Solid
Sl=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-24	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N Air Quality ☐	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 2, SEDIMENT		SAF No. RC-047		
Ice Chest No. AFS-04-008	Field Logbook No. EL-1596-7	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	Poly Bag	Poly Bag								
No. of Container(s)	12 JRB 2-21-06	1	10 JRB 2-21-06								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J112B4	OTHER SOLID	2-21-06	1200	X	X	X							

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1900 2-21-06	EAS LOCKED STORAGE	1900 2-21-06
EAS LOCKED STORAGE	0830 2-22-06	RZ Steffler	0830 2-22-06
RZ Steffler	1600 2-22-06	Fed Ex	
Fed Ex			1450 2-22-06

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1538-24 for Hyalella cow seals intact

F1242-02 for chem

6.1°C on arrival 2-23

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-25	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 3, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-008	Field Logbook No. EL-1596 7	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS
POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage
COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	Poly Bag	Poly Bag								
No. of Container(s)	+2 2-21-06	1	+2 2-21-06								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J112B5	OTHER SOLID	2-21-06	1300	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0830 2-22-06	Received By/Stored In RZ Stoffler	Date/Time 0830 2-22-06
Relinquished By/Removed From RZ Stoffler	Date/Time 1600 2-22-06	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In Brett Murray	Date/Time 1050 2-23-06
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1539-25 for Hydrolysis COC seals intact
F1242-03 for chem

6.1°C on arrival 223

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-26	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 4, SEDIMENT		SAF No. RC-047	Air Quality []	
Ice Chest No. AFS-04-008	Field Logbook No. EL-1596-7 & 1310 C	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS
POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage
COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	Poly Bag	Poly Bag								
No. of Container(s)	+2 2-21-06	1	+0 2-21-06								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J112B6	OTHER SOLID	2-21-06	1400	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE — Date/Time 1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0830 2-22-06	Received By/Stored In RZ Stoffler R.Z. Stoffler — Date/Time 0830 2-22-06
Relinquished By/Removed From RZ Stoffler R.Z. Stoffler	Date/Time 1600 2-22-06	Received By/Stored In Fed Ex — Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In Brett Mulley — Date/Time 1-57 2-23-06
Relinquished By/Removed From	Date/Time	Received By/Stored In — Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In — Date/Time

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1539-26 for Hydrolab COC seals intact

F1242-04 for Chem

6.1°C on arrival

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHFEE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-45	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 7-SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-008	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS
POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage
COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	~~1~~ 3 SEE 2-21-06	1	~~1~~ 0 SEE 2-21-06								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J116M6	OTHER SOLID	2-21-06	1445	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0830 2-22-06	Received By/Stored In R2 Stoffler R.J. Stoffler	Date/Time 0830 2-22-06
Relinquished By/Removed From R2 Stoffler R.J. Stoffler	Date/Time 0830 2-22-06/1600	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In Brett Mulkey	Date/Time 1050 2-23-06
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1538-27 for Hydrolic air seals into A

F1242-05 for Chem

6.1°C in cooler .223

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
Vs=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-46	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr6, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. HFS-04-008	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None									
Type of Container	G/P	P/G	P/G									
No. of Container(s)	~~1~~ 2 SEB 2-21-06	1	~~1~~ 0 SEB 2-21-06									
Volume	1000g	3000g	19000g									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11									

Sample No.	Matrix *	Sample Date	Sample Time										
J116M7	OTHER SOLID	2-21-06	1530	X	X	X							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From JAMES BERNHARD	1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE	1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE	0830 2-22-06	Received By/Stored In RC Steffler R.J. Steffler	0830 2-22-06
Relinquished By/Removed From RC Steffler R.J. Steffler	1600 WCH 2-22-06	Received By/Stored In Fed Ex	
Relinquished By/Removed From Fed Ex		Received By/Stored In D.T. Mackey D.T. Mackey	1050 2-23-06
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

B1538-28 for Hyallela COC seals intact

F1242-06 for Chem

6.1°C on arrival 2-23-06

Matrix *

SoSoil
SdSediment
SOSolid
SlSludge
W = Water
OOil
AAir
DSDrum Solids
DLDrum Liquids
TTissue
WIWipe
LLiquid
VVegetation
OOther

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHFEE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-100	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location REF, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-008	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	2 JEB 2-21-06	1	3 JEB 2-21-06								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J11734	OTHER SOLID	2-21-06	1630	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06	(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In RE Stoffler Date/Time 0830 2-22-06	B1538-29 for Hydrolysis COC seals intact.
Relinquished By/Removed From RE Stoffler Date/Time 1600 2-22-06	Received By/Stored In FAD ER Date/Time	F1242-07 for Chem
Relinquished By/Removed From FAD ER Date/Time	Received By/Stored In Date/Time 1050 2-23-06	61°C on arrival
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

Matrix *: S=Soil, SE=Sediment, SO=Solid, Sl=Sludge, W=Water, O=Oil, A=Air, DS=Drum Solids, DL=Drum Liquids, T=Tissue, Wi=Wipe, Li=Liquid, V=Vegetation, X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

Ship Date: 22FEB06
ActWgt: 71 LB
System#: 5851986/INET2400
Account#: S ********

REF: BESRAS6520

Delivery Address Bar Code

SHIP TO: (541)752-4271 BILL THIRD PARTY

SAMPLE RECEIVING
APPLIED SCIENCE LABORATORY
2300 NORTHWEST WALNUT BLVD.
CH2M HILL A060151
CORVALLIS, OR 97330

PRIORITY OVERNIGHT

THU
Deliver By:
23FEB06

TRK# 7903 3116 3116 FORM 0201

PDX AA

97330 -OR-US

86 CVOA

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recieved 2-23-06 3638 23 6-29

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx Express

Ship Date: 22FEB06
ActWgt: 69 LB
System#: 5851986/INET2400
Account#: S ********

REF: BESRAS6520

[redacted]

Delivery Address Bar Code

SHIP TO: (541)752-4271 BILL THIRD PARTY

SAMPLE RECEIVING
APPLIED SCIENCE LABORATORY
2300 NORTHWEST WALNUT BLVD.
CH2M HILL A060151
CORVALLIS, OR 97330

[redacted]

PRIORITY OVERNIGHT **THU**

Deliver By: 23FEB06

TRK# 7903 3116 3127 FORM 0201

PDX AA

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, received 2-23-06 8538-23 to 24

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

Ship Date: 22FEB06
ActWgt: 48 LB
System#: 5851986/INET2400
Account#: S *********

REF: BESRAS6520

[redacted]

Delivery Address Bar Code

SHIP TO: (541)752-4271 BILL THIRD PARTY

SAMPLE RECEIVING
APPLIED SCIENCE LABORATORY
2300 NORTHWEST WALNUT BLVD.
CH2M HILL A060151
CORVALLIS, OR 97330

[redacted]

PRIORITY OVERNIGHT

THU
Deliver By:
23FEB06

TRK# 7903 3116 3105 FORM 0201

PDX AA

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86 CVOA

[redacted]

Shipping Label

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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

recieved 2-23-06 B-538-23 b29

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-80	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Sr 3 , SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-96-014	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	12	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J116X2	OTHER SOLID	2-27-06	1130	X	X	X							
				FR81-01	31538-30	31539-30							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From JAMES BERNHARD	1700 2-27-06	Received By/Stored In EAS LOCKED STORAGE	1700 2-27-06
Relinquished By/Removed From EAS LOCKED STORAGE	0715 03/01/06	Received By/Stored In RE Stoffler R.E. Stoffler	0715 3-1-06
Relinquished By/Removed From RE Stoffler R.E. Stoffler	1600 3-1-06	Received By/Stored In Fed Ex	
Relinquished By/Removed From Fed Ex		Received By/Stored In Doug Winn	3-2-06 1230
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

Temp. upon arrival @ lab = 2.7 °C

31538-30

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
Ar=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
Li=Liquid
Ve=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-77	Page 1 of 1
Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER; Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9N; Data Turnaround: 21 Days
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Sr 1, SEDIMENT; 2-27-06 FULL QC	SAF No.: RC-047; Air Quality ☐	
Ice Chest No.: ERC-96-014	Field Logbook No.: EL-1597; COA: BESRAS6520	Method of Shipment: GROUND TRANSPORT	
Shipped To: CH2MHILL	Offsite Property No.: A060151	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	12 2-27-06	1	1								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J116W9	OTHER SOLID	2-27-06	1000	X	X	X							
				F1202102	31538-31	31539-31							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: JAMES BERNHARD	1700 2-27-06	Received By/Stored In: EAS LOCKED STORAGE	1700 2-27-06
Relinquished By/Removed From: EAS LOCKED STORAGE	0715 3/01/06	Received By/Stored In: RZ Steffler	0715 3-1-06
Relinquished By/Removed From: RZ Steffler	1600 3-1-06	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: Fed Ex		Received By/Stored In: Doug Winn	3-2-06/1230
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

Temp. upon arrival @ lab = 2.6°C

31538-31

Matrix *: S=Soil; SE=Sediment; SO=Solid; Sl=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; Wi=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-78	Page 1 of 1
Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER; Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N; Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Sr 5, SEDIMENT	SAF No. RC-047	Air Quality ☐
Ice Chest No. ERC-02-002	Field Logbook No. EL-1597; COA BESRAS6520	Method of Shipment GROUND TRANSPORT	
Shipped To CH2MHILL	Offsite Property No. A060151	Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	12 DEA 2-27-06	1	20 DEA 2-27-06								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See Item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J116X0	OTHER SOLID	2-27-06	1230	X	X	X							
				F1280-03	B5538-32	N/A							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-27-06 1700	EAS LOCKED STORAGE	2-27-06 1700
EAS LOCKED STORAGE	03/01/06 0715	RZ Steffler	3-1-06 0715
RZ Steffler	3-1-06 1600	Fed Ex	
Fed Ex		Doug Winn	3-2-06 1230

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

Temp. upon arrival @ lab = 2.7°C

B5538-32

Matrix *

Soil=Soil; SE=Sediment; SO=Solid; Sl=Sludge; W = Water; O=Oil; Ar=Air; DS=Drum Solids; DL=Drum Liquids; Tu=Tissue; Wi=Wipe; Lq=Liquid; Ve=Vegetation; Xo=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-79	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Sr 4, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-002	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	12 2-27-06	1	10 2-27-06								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDF-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J116X1	OTHER SOLID	2-27-06	1200	X	X	~~X~~							
				F2230-01	30538-33	N/A							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From JAMES BERNHARD	Date/Time 2-27-06 1700	Received By/Stored In EAS LOCKED STORAGE	Date/Time 2-27-06 1700
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 03/01/06 0715	Received By/Stored In RZ Stoffler	Date/Time 3-1-06 0715
Relinquished By/Removed From RZ Stoffler	Date/Time 3-1-06 1600	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In Doug Winn	Date/Time 3-2-06 1230
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

Temp. upon arrival @ lab = 2.7°C

30538-33

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-81	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Sr 2, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-002	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	x2	1	x0								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J116X3	OTHER SOLID	2-27-06	1100	X	X	X							
				F1B0-05	3033-34	N/A							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-27-06 1700	EAS LOCKED STORAGE	2-27-06 1700
EAS LOCKED STORAGE	03/01/06 0715	RC Steffler R.J. Steffler	3-1-06 0715
RC Steffler R.J. Steffler	3-1-06 1600 wet	Fed Ex	
Fed Ex		Doug Winn	3-2-06 1230

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

Temp. upon arrival @ lab = 2.7°C

3033-34

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
Ve=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-84	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Sr 6, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-002	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	12 SEB 2-27-06	1	10 SEB 2-27-06								
Volume	1000g	3000g	19000g								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11								

Sample No.	Matrix *	Sample Date	Sample Time										
J116X6	OTHER SOLID	2-27-06	1300	X	X	X							
				F12SW-06	B1538-35	N/A							

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1700 2-27-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1700 2-27-06	(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0715 03/01/06	Received By/Stored In RZ Stoffler Date/Time 0715 3-1-06	Temp. upon arrival @ lab = 2.6 °C
Relinquished By/Removed From RZ Stoffler Date/Time 1600 3-1-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex Date/Time	Received By/Stored In Doug Winn Date/Time 3-2-06/1230	B1538-35
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

Matrix *

E=Soil
SE=Sediment
SO=Solid
SJ=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
Vs=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-75	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 21 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Sr9 , SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-002	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT		
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None									
Type of Container	G/P	P/G	P/G									
No. of Container(s)	x2 JEB 2-27-06	1	+0 JEB 2-27-06									
Volume	1000g	3000g	19000g									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11									

Sample No.	Matrix *	Sample Date	Sample Time										
J116W7	OTHER SOLID	2-27-06	1430	X	X	X							
				F2203-07	B538-36	NA							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1700 2-27-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1700 2-27-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 03/01/06 0715	Received By/Stored In RC Stoffler R.J. Stoffler	Date/Time 0715 3-1-06
Relinquished By/Removed From RC Stoffler R.J. Stoffler	Date/Time 1600 3-1-06	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In Doug Winn	Date/Time 3-2-06 / 1230
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

Temp. upon arrival @ lab = 2.7°C

B538-36

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
Li=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-76	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Price Code 9N	Data Turnaround 21 Days	Air Quality ☐	
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Sr 10, SEDIMENT		SAF No. RC-047
Ice Chest No. ERC-02-002	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment GROUND TRANSPORT
Shipped To CH2MHILL	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	None	None								
Type of Container	G/P	P/G	P/G								
No. of Container(s)	~~1~~ 2 JEB 2-27-06	1	~~1~~ 10 JEB 2-27-06								
Volume	1000g	3000g	19000g								

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	Sediment Invertebrate Toxicity ASTM E1706	Sediment Phytotoxicity EEDP-04-11							
J116W8	OTHER SOLID	2-27-06	1500	X	X	~~X~~							
				F2B4-08	B038-37	NA							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1700 2-27-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1700 2-27-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0715 03/01/06	Received By/Stored In RZ Steffler	Date/Time 0715 3-1-06
Relinquished By/Removed From RZ Steffler	Date/Time 1600 3-1-06	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In Doug Winn	Date/Time 3-2-06/1230
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0; Ammonia - 350.3; pH (Soil) - 9045; TOC - 9060; Moisture Content - D2216; Nitrogen by Kjeldahl - 351.2; Particle Size (Dry Sieve) - D422

Temp. upon arrival @ lab = 2.7°C

3038-37

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
Ve=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (08/29/2005)

From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx Express

Ship Date: 01MAR06
ActWgt: 60 LB
System#: 5851986/INET2400
Account#: S *********

REF: BESRAS6520

[redacted]

Delivery Address Bar Code

SHIP TO: (541)752-4271 BILL THIRD PARTY

SAMPLE RECEIVING
APPLIED SCIENCE LABORATORY
2300 NORTHWEST WALNUT BLVD.
CH2M HILL A060151
CORVALLIS, OR 97330

[redacted]

PRIORITY OVERNIGHT

THU
Deliver By:
02MAR06

TRK# 7920 3029 4837 FORM 0201

PDX AA

97330 -OR-US

86 CVOA

[redacted]

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From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

FedEx Express

Ship Date: 01MAR06
ActWgt: 73 LB
System#: 5851986/INET2400
Account#: S *********

REF: BESRAS6520

[redacted]

Delivery Address Bar Code

SHIP TO: (541)752-4271 BILL THIRD PARTY

SAMPLE RECEIVING
APPLIED SCIENCE LABORATORY
2300 NORTHWEST WALNUT BLVD.
CH2M HILL A060151
CORVALLIS, OR 97330

[redacted]

PRIORITY OVERNIGHT

THU
Deliver By:
02MAR06

TRK# 7920 3029 4848 FORM 0201

PDX AA

97330 -OR-US

86 CVOA

[redacted]

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From: Origin ID: (509)376-7768
SHIPPING DEPT
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

Ship Date: 01MAR06
ActWgt: 71 LB
System#: 5851986/INET2400
Account#: S *********

REF: BESRAS6520

[redacted]

Delivery Address Bar Code

SHIP TO: (541)752-4271 BILL THIRD PARTY

SAMPLE RECEIVING
APPLIED SCIENCE LABORATORY
2300 NORTHWEST WALNUT BLVD.
CH2M HILL A060151
CORVALLIS, OR 97330

[redacted]

PRIORITY OVERNIGHT

THU
Deliver By:
02MAR06

TRK# 7920 3029 4826 FORM 0201

PDX AA

97330 -OR-US

86 CVOA

[redacted]

Shipping Label

View all labels

Place label in shipping label pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.