

**LABORATORY DATA CONSULTANTS, INC.**

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Anchor Environmental, LLC  
1423 3<sup>rd</sup> Avenue, Suite 300  
Seattle, WA 98101-2226  
ATTN: Ms. Sue Snyder

October 6, 2006

SUBJECT: Terminal 4 Early Action, Data Validation

Dear Ms. Snyder,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on September 19, 2006. Attachment 1 is a summary of the samples that were reviewed for each analysis.

**LDC Project # 15501:**

<b><u>SDG #</u></b>	<b><u>Fraction</u></b>
JT82, JU43, JU53	Phthalates, Polynuclear Aromatic Hydrocarbons, Lead & Zinc, Wet Chemistry, Diesel Range Organics & Motor Oil Range Organics

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

  
Stella S. Cuenco  
Project Manager/Senior Chemist



**Terminal 4 Early Action  
Data Validation Reports  
LDC# 15501**

Phthalates

LDC

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** Terminal 4 Early Action  
**Collection Date:** July 18, 2006  
**LDC Report Date:** September 29, 2006  
**Matrix:** Sediment  
**Parameters:** Phthalates  
**Validation Level:** EPA Level III  
**Laboratory:** Analytical Resources, Inc.  
**Sample Delivery Group (SDG):** JT82

**Sample Identification**

T4-S3-01-J  
T4-S3-01-K  
T4-S3-02-G  
T4-S3-02-J  
T4-S3-02-K-DUP  
T4-S3-02-H  
T4-S3-02-K-DUPMS  
T4-S3-02-K-DUPMSD

## Introduction

This data review covers 8 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Phthalates.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were greater than or equal to 0.05 as required.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 25.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were greater than or equal to 0.05 .

## V. Blanks

Method blanks were reviewed for each matrix as applicable. No phthalate contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB-090406	9/04/06	Di-n-butylphthalate Bis(2-ethylhexyl)phthalate	13 ug/Kg 17 ug/Kg	All samples in SDG JT82

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
T4-S3-02-G	Bis(2-ethylhexyl)phthalate	110 ug/Kg	110U ug/Kg
T4-S3-02-H	Bis(2-ethylhexyl)phthalate	32 ug/Kg	32U ug/Kg

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

## IX. Regional Quality Assurance and Quality Control

Not applicable.

## X. Internal Standards

All internal standard areas and retention times were within QC limits.

## XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

## XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

## XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

#### **XIV. System Performance**

Raw data were not reviewed for this SDG.

#### **XV. Overall Assessment**

Data flags have been summarized at the end of the report if data has been qualified.

#### **XVI. Field Duplicates**

Samples T4-S3-02-K-DUP and T4-S3-02-K (from SDG JU43) were identified as field duplicates. No phthalates were detected in any of the samples.

#### **XVII. Field Blanks**

No field blanks were identified in this SDG.

**Terminal 4 Early Action  
Phthalates - Data Qualification Summary - SDG JT82**

No Sample Data Qualified in this SDG

**Terminal 4 Early Action  
Phthalates - Laboratory Blank Data Qualification Summary - SDG JT82**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
JT82	T4-S3-02-G	Bis(2-ethylhexyl)phthalate	110U ug/Kg	A
JT82	T4-S3-02-H	Bis(2-ethylhexyl)phthalate	32U ug/Kg	A

ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by SW8270D GC/MS  
Page 1 of 1

Sample ID: T4-S3-01-J  
SAMPLE

Lab Sample ID: JT82A

LIMS ID: 06-15215

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 09/07/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

050332-01

Date Sampled: 07/18/06

Date Received: 07/21/06

Date Extracted: 09/04/06

Date Analyzed: 09/05/06 20:20

Instrument/Analyst: NT4/LJR

GPC Cleanup: Yes

Sample Amount: 50.6 g-dry-wt

Final Extract Volume: 1.0 mL

Dilution Factor: 5.00

Percent Moisture: 33.1%

pH: 6.4

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	99	< 99 U
84-66-2	Diethylphthalate	99	< 99 U
84-74-2	Di-n-Butylphthalate	99	< 99 U
85-68-7	Butylbenzylphthalate	99	< 99 U
117-81-7	bis(2-Ethylhexyl)phthalate	99	< 99 U
117-84-0	Di-n-Octyl phthalate	99	< 99 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl 45.8%

*2/00504*

**ORGANICS ANALYSIS DATA SHEET**  
**PSDDA Semivolatiles by SW8270D GC/MS**  
 Page 1 of 1

Sample ID: T4-S3-01-K  
**SAMPLE**

Lab Sample ID: JT82B  
 LIMS ID: 06-15216  
 Matrix: Sediment  
 Data Release Authorized:  
 Reported: 09/07/06

QC Report No: JT82-Anchor Environmental  
 Project: T-4 EARLY ACTION  
 050332-01  
 Date Sampled: 07/18/06  
 Date Received: 07/21/06

Date Extracted: 09/04/06  
 Date Analyzed: 09/05/06 20:54  
 Instrument/Analyst: NT4/LJR  
 GPC Cleanup: Yes

Sample Amount: 50.8 g-dry-wt  
 Final Extract Volume: 1.0 mL  
 Dilution Factor: 1.00  
 Percent Moisture: 31.3%  
 pH: 6.2

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	< 20 U
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**Semivolatile Surrogate Recovery**

d14-p-Terphenyl 57.2%

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ORGANICS ANALYSIS DATA SHEET  
 PSDDA Semivolatiles by SW8270D GC/MS  
 Page 1 of 1

Sample ID: T4-S3-02-G  
 SAMPLE

Lab Sample ID: JT82C  
 LIMS ID: 06-15217  
 Matrix: Sediment  
 Data Release Authorized:  
 Reported: 09/07/06

QC Report No: JT82-Anchor Environmental  
 Project: T-4 EARLY ACTION  
 050332-01  
 Date Sampled: 07/18/06  
 Date Received: 07/21/06

Date Extracted: 09/04/06  
 Date Analyzed: 09/05/06 21:26  
 Instrument/Analyst: NT4/LJR  
 GPC Cleanup: Yes

Sample Amount: 50.2 g-dry-wt  
 Final Extract Volume: 1.0 mL  
 Dilution Factor: 1.00  
 Percent Moisture: 37.3%  
 pH: 6.8

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	110 B U
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	42.4%
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*Handwritten note: 100504*



ORGANICS ANALYSIS DATA SHEET  
 PSDDA Semivolatiles by SW8270D GC/MS  
 Page 1 of 1

Sample ID: T4-S3-02-J  
 SAMPLE

Lab Sample ID: JT82D  
 LIMS ID: 06-15218  
 Matrix: Sediment  
 Data Release Authorized:  
 Reported: 09/07/06

QC Report No: JT82-Anchor Environmental  
 Project: T-4 EARLY ACTION  
 050332-01  
 Date Sampled: 07/18/06  
 Date Received: 07/21/06

Date Extracted: 09/04/06  
 Date Analyzed: 09/05/06 21:59  
 Instrument/Analyst: NT4/LJR  
 GPC Cleanup: Yes

Sample Amount: 50.9 g-dry-wt  
 Final Extract Volume: 1.0 mL  
 Dilution Factor: 1.00  
 Percent Moisture: 25.4%  
 pH: 6.5

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	< 20 U
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	56.0%
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*NT4*

**ORGANICS ANALYSIS DATA SHEET**  
 PSDDA Semivolatiles by SW8270D GC/MS  
 Page 1 of 1

Sample ID: T4-S3-02-K-DUP  
 SAMPLE

Lab Sample ID: JT82E  
 LIMS ID: 06-15219  
 Matrix: Sediment  
 Data Release Authorized:  
 Reported: 09/07/06

QC Report No: JT82-Anchor Environmental  
 Project: T-4 EARLY ACTION  
 050332-01  
 Date Sampled: 07/18/06  
 Date Received: 07/21/06

Date Extracted: 09/04/06  
 Date Analyzed: 09/05/06 22:32  
 Instrument/Analyst: NT4/LJR  
 GPC Cleanup: Yes

Sample Amount: 51.0 g-dry-wt  
 Final Extract Volume: 1.0 mL  
 Dilution Factor: 1.00  
 Percent Moisture: 22.1%  
 pH: 6.7

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	< 20 U
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**Semivolatile Surrogate Recovery**

d14-p-Terphenyl 62.4%

*Handwritten signature/initials*

**ORGANICS ANALYSIS DATA SHEET**

PSDDA Semivolatiles by SW8270D GC/MS

Page 1 of 1

Sample ID: T4-S3-02-H

SAMPLE

Lab Sample ID: JT82I

LIMS ID: 06-15223

Matrix: Sediment

Data Release Authorized: 

Reported: 09/07/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

050332-01

Date Sampled: 07/18/06

Date Received: 07/21/06

Date Extracted: 09/04/06

Date Analyzed: 09/06/06 00:11

Instrument/Analyst: NT4/LJR

GPC Cleanup: Yes

Sample Amount: 34.8 g-dry-wt

Final Extract Volume: 1.0 mL

Dilution Factor: 1.00

Percent Moisture: 32.0%

pH: 6.9

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	29	< 29 U
84-66-2	Diethylphthalate	29	< 29 U
84-74-2	Di-n-Butylphthalate	29	< 29 U
85-68-7	Butylbenzylphthalate	29	< 29 U
117-81-7	bis(2-Ethylhexyl)phthalate	29	32 B U
117-84-0	Di-n-Octyl phthalate	29	< 29 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**Semivolatile Surrogate Recovery**

d14-p-Terphenyl 55.6%

*Handwritten:* 7/05/06

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C) *phthalates*

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/18/06</u>
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	<u>NO SPCC</u>
IV.	Continuing calibration <u>REV</u>	A	<u>✓</u>
V.	Blanks	<u>W</u>	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	<u>CCS</u>
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	<u>✓</u>
XVI.	Field duplicates	ND	<u>D=5+ T4-S3-02-K (JU43)</u>
XVII.	Field blanks	N	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

Validated Samples:

Used

1	T4-S3-01-J	11	<u>MB-090406</u>	21		31	
2	T4-S3-01-K	12		22		32	
3	T4-S3-02-G	13		23		33	
4	T4-S3-02-J	14		24		34	
5	T4-S3-02-K-DUP	15		25		35	
6	T4-S3-02-H	16		26		36	
7	T4-S3-02-K-DUPMS	17		27		37	
8	T4-S3-02-K-DUPMSD	18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU.
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.



**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** Terminal 4 Early Action  
**Collection Date:** July 18, 2006  
**LDC Report Date:** October 6, 2006  
**Matrix:** Sediment  
**Parameters:** Phthalates  
**Validation Level:** EPA Level III  
**Laboratory:** Analytical Resources, Inc.

**Sample Delivery Group (SDG):** JU43

**Sample Identification**

T4-B414-01-D  
T4-B414-01-F  
T4-B414-01-E  
T4-B414-02-D  
T4-B414-02-E  
T4-B414-02-F  
T4-B414-04-D  
T4-B414-04-E  
T4-B414-04-F  
T4-S3-02-K  
T4-S3-08-D  
T4-S3-05-K  
T4-S3-07-F  
T4-S3-04-E  
T4-S3-04-F  
T4-S3-03-E  
T4-S3-03-F  
T4-S3-03-G  
T4-S3-03-FMS  
T4-S3-03-FMSD

## Introduction

This data review covers 20 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Phthalates.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. GC/MS Instrument Performance Check**

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

## **III. Initial Calibration**

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were greater than or equal to 0.05 as required.

## **IV. Continuing Calibration**

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 25.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were greater than or equal to 0.05 .

## **V. Blanks**

Method blanks were reviewed for each matrix as applicable. No phthalate contaminants were found in the method blanks.

## **VI. Surrogate Spikes**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## **VII. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## **VIII. Laboratory Control Samples (LCS)**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

## **IX. Regional Quality Assurance and Quality Control**

Not applicable.

## **X. Internal Standards**

All internal standard areas and retention times were within QC limits.

## **XI. Target Compound Identifications**

Raw data were not reviewed for this SDG.

## **XII. Compound Quantitation and CRQLs**

Raw data were not reviewed for this SDG.

## **XIII. Tentatively Identified Compounds (TICs)**

Raw data were not reviewed for this SDG.

## **XIV. System Performance**

Raw data were not reviewed for this SDG.

## **XV. Overall Assessment**

Data flags have been summarized at the end of the report if data has been qualified.

## **XVI. Field Duplicates**

Samples T4-S3-02-K-DUP (from SDG JT82) and T4-S3-02-K were identified as field duplicates. No phthalates were detected in any of the samples.

## **XVII. Field Blanks**

No field blanks were identified in this SDG.

**Terminal 4 Early Action  
Phthalates - Data Qualification Summary - SDG JU43**

No Sample Data Qualified in this SDG

**Terminal 4 Early Action  
Phthalates - Laboratory Blank Data Qualification Summary - SDG JU43**

No Sample Data Qualified in this SDG

**ORGANICS ANALYSIS DATA SHEET**  
 PSDDA Semivolatiles by SW8270D GC/MS  
 Page 1 of 1

Sample ID: T4-B414-01-D  
 SAMPLE

Lab Sample ID: JU43A  
 LIMS ID: 06-15845  
 Matrix: Sediment  
 Data Release Authorized: *AB*  
 Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
 Project: T4 EARLY ACTION  
 050332-01  
 Date Sampled: 07/20/06  
 Date Received: 07/24/06

Date Extracted: 09/07/06  
 Date Analyzed: 09/13/06 17:37  
 Instrument/Analyst: NT6/LJR  
 GPC Cleanup: Yes

Sample Amount: 18.7 g-dry-wt  
 Final Extract Volume: 1.0 mL  
 Dilution Factor: 1.00  
 Percent Moisture: 45.1%  
 pH: 6.8

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	53	< 53 U
84-66-2	Diethylphthalate	53	< 53 U
84-74-2	Di-n-Butylphthalate	53	< 53 U
85-68-7	Butylbenzylphthalate	53	< 53 U
117-81-7	bis(2-Ethylhexyl)phthalate	53	95
117-84-0	Di-n-Octyl phthalate	53	< 53 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl 62.8%

*2/10/06*

**ORGANICS ANALYSIS DATA SHEET**  
**PSDDA Semivolatiles by SW8270D GC/MS**  
 Page 1 of 1

Sample ID: T4-B414-01-F  
 SAMPLE

Lab Sample ID: JU43B  
 LIMS ID: 06-15846  
 Matrix: Sediment  
 Data Release Authorized: *AB*  
 Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
 Project: T4 EARLY ACTION  
 050332-01  
 Date Sampled: 07/20/06  
 Date Received: 07/24/06

Date Extracted: 09/07/06  
 Date Analyzed: 09/13/06 18:09  
 Instrument/Analyst: NT6/LJR  
 GPC Cleanup: Yes

Sample Amount: 21.4 g-dry-wt  
 Final Extract Volume: 1.0 mL  
 Dilution Factor: 1.00  
 Percent Moisture: 42.2%  
 pH: 6.4

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	47	< 47 U
84-66-2	Diethylphthalate	47	< 47 U
84-74-2	Di-n-Butylphthalate	47	< 47 U
85-68-7	Butylbenzylphthalate	47	< 47 U
117-81-7	bis(2-Ethylhexyl)phthalate	47	< 47 U
117-84-0	Di-n-Octyl phthalate	47	< 47 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl 52.8%

*10/5/04*



ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by SW8270D GC/MS  
Page 1 of 1

Sample ID: T4-B414-01-E  
SAMPLE

Lab Sample ID: JU43C  
LIMS ID: 06-15847  
Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
Project: T4 EARLY ACTION  
050332-01  
Date Sampled: 07/20/06  
Date Received: 07/24/06

Date Extracted: 09/07/06  
Date Analyzed: 09/13/06 18:40  
Instrument/Analyst: NT6/LJR  
GPC Cleanup: Yes

Sample Amount: 50.4 g-dry-wt  
Final Extract Volume: 1.0 mL  
Dilution Factor: 1.00  
Percent Moisture: 43.7%  
pH: 6.7

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	21
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	47
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl 50.0%

*re 100-06*

**ORGANICS ANALYSIS DATA SHEET**  
 PSDDA Semivolatiles by SW8270D GC/MS  
 Page 1 of 1

Sample ID: T4-B414-02-D  
 SAMPLE

Lab Sample ID: JU43D  
 LIMS ID: 06-15848  
 Matrix: Sediment  
 Data Release Authorized: *[Signature]*  
 Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
 Project: T4 EARLY ACTION  
 050332-01  
 Date Sampled: 07/19/06  
 Date Received: 07/24/06

Date Extracted: 09/07/06  
 Date Analyzed: 09/13/06 19:12  
 Instrument/Analyst: NT6/LJR  
 GPC Cleanup: Yes

Sample Amount: 50.7 g-dry-wt  
 Final Extract Volume: 1.0 mL  
 Dilution Factor: 1.00  
 Percent Moisture: 45.3%  
 pH: 6.7

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	100
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**Semivolatile Surrogate Recovery**

d14-p-Terphenyl 45.2%

*L 1005706*

ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by SW8270D GC/MS  
Page 1 of 1

Sample ID: T4-B414-02-E  
SAMPLE

Lab Sample ID: JU43E  
LIMS ID: 06-15849  
Matrix: Sediment  
Data Release Authorized:   
Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
Project: T4 EARLY ACTION  
050332-01  
Date Sampled: 07/19/06  
Date Received: 07/24/06

Date Extracted: 09/07/06  
Date Analyzed: 09/13/06 19:44  
Instrument/Analyst: NT6/LJR  
GPC Cleanup: Yes

Sample Amount: 50.4 g-dry-wt  
Final Extract Volume: 1.0 mL  
Dilution Factor: 1.00  
Percent Moisture: 44.0%  
pH: 6.6

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	61
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl 43.6%

C/08504

**ORGANICS ANALYSIS DATA SHEET**  
**PSDDA Semivolatiles by SW8270D GC/MS**  
 Page 1 of 1

Sample ID: T4-B414-02-F  
 SAMPLE

Lab Sample ID: JU43F  
 LIMS ID: 06-15850  
 Matrix: Sediment  
 Data Release Authorized:   
 Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
 Project: T4 EARLY ACTION  
 050332-01  
 Date Sampled: 07/19/06  
 Date Received: 07/24/06

Date Extracted: 09/07/06  
 Date Analyzed: 09/13/06 20:16  
 Instrument/Analyst: NT6/LJR  
 GPC Cleanup: Yes

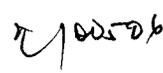
Sample Amount: 50.2 g-dry-wt  
 Final Extract Volume: 1.0 mL  
 Dilution Factor: 1.00  
 Percent Moisture: 42.5%  
 pH: 6.2

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	56
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl 47.2%



**ORGANICS ANALYSIS DATA SHEET**  
 PSDDA Semivolatiles by SW8270D GC/MS  
 Page 1 of 1

Sample ID: T4-B414-04-D  
 SAMPLE

Lab Sample ID: JU43G  
 LIMS ID: 06-15851  
 Matrix: Sediment  
 Data Release Authorized:  
 Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
 Project: T4 EARLY ACTION  
 050332-01  
 Date Sampled: 07/20/06  
 Date Received: 07/24/06

Date Extracted: 09/07/06  
 Date Analyzed: 09/13/06 20:49  
 Instrument/Analyst: NT6/LJR  
 GPC Cleanup: Yes

Sample Amount: 50.6 g-dry-wt  
 Final Extract Volume: 1.0 mL  
 Dilution Factor: 1.00  
 Percent Moisture: 50.5%  
 pH: 6.7

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	45
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**Semivolatile Surrogate Recovery**

d14-p-Terphenyl	46.4%
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*C / 09/10/06*

0033



ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by SW8270D GC/MS  
Page 1 of 1

Sample ID: T4-B414-04-E  
SAMPLE

Lab Sample ID: JU43H  
LIMS ID: 06-15852  
Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
Project: T4 EARLY ACTION  
050332-01  
Date Sampled: 07/20/06  
Date Received: 07/24/06

Date Extracted: 09/07/06  
Date Analyzed: 09/13/06 21:21  
Instrument/Analyst: NT6/LJR  
GPC Cleanup: Yes

Sample Amount: 50.2 g-dry-wt  
Final Extract Volume: 1.0 mL  
Dilution Factor: 1.00  
Percent Moisture: 45.5%  
pH: 6.7

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	120
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl 40.4%

*10/20/06*

0034

ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by SW8270D GC/MS  
Page 1 of 1



Sample ID: T4-B414-04-F  
SAMPLE

Lab Sample ID: JU43I  
LIMS ID: 06-15853  
Matrix: Sediment  
Data Release Authorized: *AB*  
Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
Project: T4 EARLY ACTION  
050332-01  
Date Sampled: 07/20/06  
Date Received: 07/24/06

Date Extracted: 09/07/06  
Date Analyzed: 09/13/06 21:53  
Instrument/Analyst: NT6/LJR  
GPC Cleanup: Yes

Sample Amount: 50.5 g-dry-wt  
Final Extract Volume: 1.0 mL  
Dilution Factor: 1.00  
Percent Moisture: 44.1%  
pH: 6.8

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	76
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl 41.2%

*2/10/06*

0035



ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by SW8270D GC/MS  
Page 1 of 1

Sample ID: T4-S3-02-K  
SAMPLE

Lab Sample ID: JU43J  
LIMS ID: 06-15854  
Matrix: Sediment  
Data Release Authorized: *MB*  
Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
Project: T4 EARLY ACTION  
050332-01  
Date Sampled: 07/18/06  
Date Received: 07/24/06

Date Extracted: 09/07/06  
Date Analyzed: 09/13/06 22:25  
Instrument/Analyst: NT6/LJR  
GPC Cleanup: Yes

Sample Amount: 50.9 g-dry-wt  
Final Extract Volume: 1.0 mL  
Dilution Factor: 1.00  
Percent Moisture: 25.8%  
pH: 6.2

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	< 20 U
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl 64.0%

*12/05/06*

**ORGANICS ANALYSIS DATA SHEET**  
 PSDDA Semivolatiles by SW8270D GC/MS  
 Page 1 of 1

Sample ID: T4-S3-08-D  
 SAMPLE

Lab Sample ID: JU43K  
 LIMS ID: 06-15855  
 Matrix: Sediment  
 Data Release Authorized:  
 Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
 Project: T4 EARLY ACTION  
 050332-01  
 Date Sampled: 07/19/06  
 Date Received: 07/24/06

Date Extracted: 09/07/06  
 Date Analyzed: 09/13/06 22:57  
 Instrument/Analyst: NT6/LJR  
 GPC Cleanup: Yes

Sample Amount: 50.7 g-dry-wt  
 Final Extract Volume: 1.0 mL  
 Dilution Factor: 1.00  
 Percent Moisture: 24.7%  
 pH: 6.3

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	< 20 U
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl 65.6%

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ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by SW8270D GC/MS  
Page 1 of 1

Sample ID: T4-S3-05-K  
SAMPLE

Lab Sample ID: JU43L  
LIMS ID: 06-15856  
Matrix: Sediment  
Data Release Authorized: *AB*  
Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
Project: T4 EARLY ACTION  
050332-01  
Date Sampled: 07/19/06  
Date Received: 07/24/06

Date Extracted: 09/07/06  
Date Analyzed: 09/13/06 23:29  
Instrument/Analyst: NT6/LJR  
GPC Cleanup: Yes

Sample Amount: 50.6 g-dry-wt  
Final Extract Volume: 1.0 mL  
Dilution Factor: 1.00  
Percent Moisture: 28.0%  
pH: 6.3

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	< 20 U
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	56.0%
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*JL 10/15/06*

**ORGANICS ANALYSIS DATA SHEET**

PSDDA Semivolatiles by SW8270D GC/MS  
Page 1 of 1

Sample ID: T4-S3-07-F  
SAMPLE

Lab Sample ID: JU43M

LIMS ID: 06-15857

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Date Extracted: 09/07/06

Date Analyzed: 09/14/06 00:00

Instrument/Analyst: NT6/LJR

GPC Cleanup: Yes

Sample Amount: 50.6 g-dry-wt

Final Extract Volume: 1.0 mL

Dilution Factor: 1.00

Percent Moisture: 26.8%

pH: 6.7

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	< 20 U
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**Semivolatile Surrogate Recovery**

d14-p-Terphenyl 62.8%

*↑ 100506*



ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by SW8270D GC/MS  
Page 1 of 1

Sample ID: T4-S3-04-E  
SAMPLE

Lab Sample ID: JU43N  
LIMS ID: 06-15858  
Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
Project: T4 EARLY ACTION  
050332-01  
Date Sampled: 07/20/06  
Date Received: 07/24/06

Date Extracted: 09/07/06  
Date Analyzed: 09/14/06 00:32  
Instrument/Analyst: NT6/LJR  
GPC Cleanup: Yes

Sample Amount: 50.4 g-dry-wt  
Final Extract Volume: 1.0 mL  
Dilution Factor: 1.00  
Percent Moisture: 23.9%  
pH: 6.3

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	< 20 U
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl 69.6%

*E/10/06*

0040

**ORGANICS ANALYSIS DATA SHEET**

PSDDA Semivolatiles by SW8270D GC/MS  
Page 1 of 1

Sample ID: T4-S3-04-F  
SAMPLE

Lab Sample ID: JU430

LIMS ID: 06-15859

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Date Extracted: 09/07/06

Date Analyzed: 09/14/06 01:04

Instrument/Analyst: NT6/LJR

GPC Cleanup: Yes

Sample Amount: 51.1 g-dry-wt

Final Extract Volume: 1.0 mL

Dilution Factor: 1.00

Percent Moisture: 24.6%

pH: 6.7

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	< 20 U
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**Semivolatile Surrogate Recovery**

d14-p-Terphenyl 63.2%

*r / awsp*

0041

**ORGANICS ANALYSIS DATA SHEET**  
 PSDDA Semivolatiles by SW8270D GC/MS  
 Page 1 of 1

Sample ID: T4-S3-03-E  
 SAMPLE

Lab Sample ID: JU43P  
 LIMS ID: 06-15860  
 Matrix: Sediment  
 Data Release Authorized: *[Signature]*  
 Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
 Project: T4 EARLY ACTION  
 050332-01  
 Date Sampled: 07/19/06  
 Date Received: 07/24/06

Date Extracted: 09/07/06  
 Date Analyzed: 09/14/06 01:36  
 Instrument/Analyst: NT6/LJR  
 GPC Cleanup: Yes

Sample Amount: 50.7 g-dry-wt  
 Final Extract Volume: 1.0 mL  
 Dilution Factor: 1.00  
 Percent Moisture: 22.8%  
 pH: 6.0

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	22
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl 56.0%

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ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by SW8270D GC/MS  
Page 1 of 1

Sample ID: T4-S3-03-F  
SAMPLE

Lab Sample ID: JU43Q  
LIMS ID: 06-15861  
Matrix: Sediment  
Data Release Authorized:  
Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
Project: T4 EARLY ACTION  
050332-01  
Date Sampled: 07/19/06  
Date Received: 07/24/06

Date Extracted: 09/07/06  
Date Analyzed: 09/14/06 02:07  
Instrument/Analyst: NT6/LJR  
GPC Cleanup: Yes

Sample Amount: 51.2 g-dry-wt  
Final Extract Volume: 1.0 mL  
Dilution Factor: 1.00  
Percent Moisture: 19.5%  
pH: 5.7

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	< 20 U
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl 55.2%

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0043

**ORGANICS ANALYSIS DATA SHEET**  
 PSDDA Semivolatiles by SW8270D GC/MS  
 Page 1 of 1

Sample ID: T4-S3-03-G  
 SAMPLE

Lab Sample ID: JU43R  
 LIMS ID: 06-15862  
 Matrix: Sediment  
 Data Release Authorized: *[Signature]*  
 Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
 Project: T4 EARLY ACTION  
 050332-01  
 Date Sampled: 07/19/06  
 Date Received: 07/24/06

Date Extracted: 09/07/06  
 Date Analyzed: 09/14/06 10:56  
 Instrument/Analyst: NT6/LJR  
 GPC Cleanup: Yes

Sample Amount: 50.5 g-dry-wt  
 Final Extract Volume: 1.0 mL  
 Dilution Factor: 1.00  
 Percent Moisture: 29.3%  
 pH: 5.8

CAS Number	Analyte	RL	Result
131-11-3	Dimethylphthalate	20	< 20 U
84-66-2	Diethylphthalate	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
117-81-7	bis(2-Ethylhexyl)phthalate	20	< 20 U
117-84-0	Di-n-Octyl phthalate	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl 46.4%

*E 10504*

**METHOD:** GC/MS Semivolatiles (EPA SW 846 Method 8270C) *phthalates*

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

Validation Area		Comments	
I.	Technical holding times	A	Sampling dates: 7/18-20/06
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no SPCC
IV.	Continuing calibration <i>rev</i>	A	↓
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	
XVI.	Field duplicates	ND	D = 10 + T4-S3-02-K-DUP (JT82)
XVII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate  
 N = Not provided/applicable R = Rinsate TB = Trip blank  
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:  
*All sed*

1	T4-B414-01-D	11	T4-S3-08-D	21	<i>MB-090706</i>	31
2	T4-B414-01-F	12	T4-S3-05-K	22		32
3	T4-B414-01-E	13	T4-S3-07-F	23		33
4	T4-B414-02-D	14	T4-S3-04-E	24		34
5	T4-B414-02-E	15	T4-S3-04-F	25		35
6	T4-B414-02-F	16	T4-S3-03-E	26		36
7	T4-B414-04-D	17	T4-S3-03-F	27		37
8	T4-B414-04-E	18	T4-S3-03-G	28		38
9	T4-B414-04-F	19	T4-S3-03-FMS	29		39
10	T4-S3-02-K	20	T4-S3-03-FMSD	30		40

**Terminal 4 Early Action  
Data Validation Reports  
LDC# 15501**

**Polynuclear Aromatic Hydrocarbons**

**LDC**

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** Terminal 4 Early Action  
**Collection Date:** July 18, 2006  
**LDC Report Date:** September 29, 2006  
**Matrix:** Sediment  
**Parameters:** Polynuclear Aromatic Hydrocarbons  
**Validation Level:** EPA Level III  
**Laboratory:** Analytical Resources, Inc.  
**Sample Delivery Group (SDG):** JT82

**Sample Identification**

T4-S3-01-J  
T4-S3-01-JDL  
T4-S3-01-K  
T4-S3-02-G  
T4-S3-02-GDL  
T4-S3-02-J  
T4-S3-02-K-DUP  
T4-S3-02-H

## Introduction

This data review covers 8 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270C using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. GC/MS Instrument Performance Check**

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

## **III. Initial Calibration**

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

## **IV. Continuing Calibration**

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

All of the continuing calibration RRF values were within validation criteria.

## **V. Blanks**

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

## **VI. Surrogate Spikes**

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for sample T4-S3-01-JDL. Since the sample was diluted out, no data were qualified.

## **VII. Matrix Spike/Matrix Spike Duplicates**

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

### VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

### IX. Regional Quality Assurance and Quality Control

Not applicable.

### X. Internal Standards

All internal standard areas and retention times were within QC limits.

### XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

### XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
T4-S3-01-J	Phenanthrene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Benzo(g,h,i)perylene Perylene Benzo(e)pyrene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects)	A
T4-S3-02-G	Fluoranthene Pyrene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects)	A

Raw data were not reviewed for this SDG.

### XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

### XIV. System Performance

Raw data were not reviewed for this SDG.

## XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

## XVI. Field Duplicates

Samples T4-S3-02-K (from SDG JU43) and T4-S3-02-K-DUP were identified as field duplicates. No polynuclear aromatic hydrocarbons were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)
	T4-S3-02-K-DUP	T4-S3-02-K	
Naphthalene	4.9	10	68 ( $\leq 75$ )
2-Methylnaphthalene	4.9U	6.0	200 ( $\leq 75$ )
1-Methylnaphthalene	4.9U	4.5	200 ( $\leq 75$ )
Acenaphthylene	4.9U	3.5	200 ( $\leq 75$ )
Acenaphthene	9.3	16	53 ( $\leq 75$ )
Fluorene	4.9U	6.5	200 ( $\leq 75$ )
Phenanthrene	30	66	75 ( $\leq 75$ )
Anthracene	4.9	11	77 ( $\leq 75$ )
Fluoranthene	39	92	81 ( $\leq 75$ )
Pyrene	65	110	51 ( $\leq 75$ )
Benzo(a)anthracene	19	38	67 ( $\leq 75$ )
Chrysene	30	56	60 ( $\leq 75$ )
Benzo(b)fluoranthene	26	37	35 ( $\leq 75$ )
Benzo(k)fluoranthene	29	38	27 ( $\leq 75$ )
Benzo(a)pyrene	29	44	41 ( $\leq 75$ )
Indeno(1,2,3-cd)pyrene	9.3	22	81 ( $\leq 75$ )
Dibenz(a,h)anthracene	4.9U	6.0	200 ( $\leq 75$ )

Compound	Concentration (ug/Kg)		RPD (Limits)
	T4-S3-02-K-DUP	T4-S3-02-K	
Benzo(g,h,i)perylene	13	24	59 ( $\leq 75$ )
Perylene	46	90	65 ( $\leq 75$ )
2,6-Dimethylnaphthalene	4.9U	10	200 ( $\leq 75$ )
1-Methylphenanthrene	4.9U	20	200 ( $\leq 75$ )
Benzo(e)pyrene	19	30	45 ( $\leq 75$ )
2,3,5-Trimethylnaphthalene	8.8	18	69 ( $\leq 75$ )

## XVII. Field Blanks

No field blanks were identified in this SDG.

**Terminal 4 Early Action  
 Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG JT82**

SDG	Sample	Compound	Flag	A or P	Reason
JT82	T4-S3-01-J	Phenanthrene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Benzo(g,h,i)perylene Perylene Benzo(e)pyrene	J (all detects) J (all detects)	A	Compound quantitation and CRQLs
JT82	T4-S3-02-G	Fluoranthene Pyrene	J (all detects) J (all detects)	A	Compound quantitation and CRQLs

**Terminal 4 Early Action  
 Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary  
 - SDG JT82**

No Sample Data Qualified in this SDG

**ORGANICS ANALYSIS DATA SHEET**

PNA's by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-S3-01-J

SAMPLE

Lab Sample ID: JT82A

LIMS ID: 06-15215

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 09/04/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/18/06

Date Received: 07/21/06

Date Extracted: 08/25/06

Date Analyzed: 08/31/06 21:52

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.0 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 5.00

Percent Moisture: 33.1%

pH: 6.4

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	25	280
91-57-6	2-Methylnaphthalene	25	160
90-12-0	1-Methylnaphthalene	25	70
208-96-8	Acenaphthylene	25	25
83-32-9	Acenaphthene	25	2,100
86-73-7	Fluorene	25	810
85-01-8	Phenanthrene	25	6,400 E J
120-12-7	Anthracene	25	1,900
206-44-0	Fluoranthene	25	10,000 E J
129-00-0	Pyrene	25	11,000 E
56-55-3	Benzo (a) anthracene	25	8,600 E
218-01-9	Chrysene	25	10,000 E
205-99-2	Benzo (b) fluoranthene	25	14,000 E
207-08-9	Benzo (k) fluoranthene	25	11,000 E
50-32-8	Benzo (a) pyrene	25	12,000 E
193-39-5	Indeno (1,2,3-cd) pyrene	25	3,600 E ↓
53-70-3	Dibenz (a, h) anthracene	25	1,400
191-24-2	Benzo (g, h, i) perylene	25	3,600 E J
198-55-0	Perylene	25	3,600 E ↓
92-52-4	Biphenyl	25	35
581-42-0	2,6-Dimethylnaphthalene	25	58
832-69-9	1-Methylphenanthrene	25	520
192-97-2	Benzo (e) pyrene	25	7,500 E J
2245-38-7	2,3,5-Trimethylnaphthalene	25	52

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 57.2%  
d14-Dibenzo (a, h) anthracen 52.8%

*1/00504*



ORGANICS ANALYSIS DATA SHEET  
PNAs by SW8270D-SIM GC/MS  
Page 1 of 1

Sample ID: T4-S3-01-J  
DILUTION

Lab Sample ID: JT82A  
LIMS ID: 06-15215  
Matrix: Sediment  
Data Release Authorized:  
Reported: 09/04/06

QC Report No: JT82-Anchor Environmental  
Project: T-4 EARLY ACTION  
Event: 050332-01  
Date Sampled: 07/18/06  
Date Received: 07/21/06

Date Extracted: 08/25/06  
Date Analyzed: 09/01/06 11:54  
Instrument/Analyst: NT1/VTS  
GPC Cleanup: No  
Silica Gel Cleanup: Yes

Sample Amount: 10.0 g-dry-wt  
Final Extract Volume: 0.5 mL  
Dilution Factor: 50.0  
Percent Moisture: 33.1%  
pH: 6.4

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	250	280
91-57-6	2-Methylnaphthalene	250	< 250 U
90-12-0	1-Methylnaphthalene	250	< 250 U
208-96-8	Acenaphthylene	250	< 250 U
83-32-9	Acenaphthene	250	2,200
86-73-7	Fluorene	250	820
85-01-8	Phenanthrene	250	7,700
120-12-7	Anthracene	250	1,900
206-44-0	Fluoranthene	250	15,000
129-00-0	Pyrene	250	14,000
56-55-3	Benzo (a) anthracene	250	9,400
218-01-9	Chrysene	250	11,000
205-99-2	Benzo (b) fluoranthene	250	11,000
207-08-9	Benzo (k) fluoranthene	250	10,000
50-32-8	Benzo (a) pyrene	250	12,000
193-39-5	Indeno (1,2,3-cd) pyrene	250	6,800
53-70-3	Dibenz (a,h) anthracene	250	2,400
191-24-2	Benzo (g,h,i) perylene	250	8,000
198-55-0	Perylene	250	3,600
92-52-4	Biphenyl	250	< 250 U
581-42-0	2,6-Dimethylnaphthalene	250	< 250 U
832-69-9	1-Methylphenanthrene	250	520
192-97-2	Benzo (e) pyrene	250	6,800
2245-38-7	2,3,5-Trimethylnaphthalene	250	< 250 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene D  
d14-Dibenzo (a,h) anthracen D

*t / 02506*

0041



ORGANICS ANALYSIS DATA SHEET  
PNAs by SW8270D-SIM GC/MS  
Page 1 of 1

Sample ID: T4-S3-01-K  
SAMPLE

Lab Sample ID: JT82B  
LIMS ID: 06-15216  
Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 09/04/06

QC Report No: JT82-Anchor Environmental  
Project: T-4 EARLY ACTION  
Event: 050332-01  
Date Sampled: 07/18/06  
Date Received: 07/21/06

Date Extracted: 08/25/06  
Date Analyzed: 08/31/06 13:02  
Instrument/Analyst: NT1/VTS  
GPC Cleanup: No  
Silica Gel Cleanup: Yes

Sample Amount: 10.3 g-dry-wt  
Final Extract Volume: 0.5 mL  
Dilution Factor: 1.00  
Percent Moisture: 31.3%  
pH: 6.2

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	4.8	< 4.8 U
91-57-6	2-Methylnaphthalene	4.8	< 4.8 U
90-12-0	1-Methylnaphthalene	4.8	< 4.8 U
208-96-8	Acenaphthylene	4.8	< 4.8 U
83-32-9	Acenaphthene	4.8	13
86-73-7	Fluorene	4.8	6.8
85-01-8	Phenanthrene	4.8	49
120-12-7	Anthracene	4.8	9.2
206-44-0	Fluoranthene	4.8	76
129-00-0	Pyrene	4.8	77
56-55-3	Benzo (a) anthracene	4.8	51
218-01-9	Chrysene	4.8	63
205-99-2	Benzo (b) fluoranthene	4.8	62
207-08-9	Benzo (k) fluoranthene	4.8	53
50-32-8	Benzo (a) pyrene	4.8	61
193-39-5	Indeno (1,2,3-cd) pyrene	4.8	36
53-70-3	Dibenz (a,h) anthracene	4.8	13
191-24-2	Benzo (g,h,i) perylene	4.8	43
198-55-0	Perylene	4.9	370
92-52-4	Biphenyl	4.9	< 4.9 U
581-42-0	2,6-Dimethylnaphthalene	4.8	< 4.8 U
832-69-9	1-Methylphenanthrene	4.8	4.8
192-97-2	Benzo (e) pyrene	4.8	38
2245-38-7	2,3,5-Trimethylnaphthalene	4.8	< 4.8 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 62.3%  
d14-Dibenzo(a,h)anthracene 76.7%

C 10/20/06

0042

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-S3-02-G

SAMPLE

Lab Sample ID: JT82C

LIMS ID: 06-15217

Matrix: Sediment

Data Release Authorized: *AP*

Reported: 09/04/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/18/06

Date Received: 07/21/06

Date Extracted: 08/25/06

Date Analyzed: 08/31/06 13:27

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 2.00

Percent Moisture: 37.3%

pH: 6.8

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	9.9	48
91-57-6	2-Methylnaphthalene	9.9	25
90-12-0	1-Methylnaphthalene	9.9	15
208-96-8	Acenaphthylene	9.9	36
83-32-9	Acenaphthene	9.9	150
86-73-7	Fluorene	9.9	76
85-01-8	Phenanthrene	9.9	660
120-12-7	Anthracene	9.9	120
206-44-0	Fluoranthene	9.9	1,000 E J
129-00-0	Pyrene	9.9	1,200 E ↓
56-55-3	Benzo (a) anthracene	9.9	500
218-01-9	Chrysene	9.9	680
205-99-2	Benzo (b) fluoranthene	9.9	560
207-08-9	Benzo (k) fluoranthene	9.9	520
50-32-8	Benzo (a) pyrene	9.9	590
193-39-5	Indeno (1,2,3-cd) pyrene	9.9	340
53-70-3	Dibenz (a, h) anthracene	9.9	98
191-24-2	Benzo (g, h, i) perylene	9.9	410
198-55-0	Perylene	9.9	340
92-52-4	Biphenyl	9.9	< 9.9 Y
581-42-0	2,6-Dimethylnaphthalene	9.9	52
832-69-9	1-Methylphenanthrene	50	< 50 Y
192-97-2	Benzo (e) pyrene	9.9	390
2245-38-7	2,3,5-Trimethylnaphthalene	9.9	140

Reported in µg/kg (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 62.1%  
d14-Dibenzo (a, h) anthracen 67.3%

*2/00504*

0043



ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-S3-02-G

DILUTION

Lab Sample ID: JT82C

LIMS ID: 06-15217

Matrix: Sediment

Data Release Authorized:

Reported: 09/04/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/18/06

Date Received: 07/21/06

Date Extracted: 08/25/06

Date Analyzed: 09/01/06 12:19

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 10.0

Percent Moisture: 37.3%

pH: 6.8

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	50	50
91-57-6	2-Methylnaphthalene	50	< 50 U
90-12-0	1-Methylnaphthalene	50	< 50 U
208-96-8	Acenaphthylene	50	< 50 U
83-32-9	Acenaphthene	50	170
86-73-7	Fluorene	50	74
85-01-8	Phenanthrene	50	710
120-12-7	Anthracene	50	130
206-44-0	Fluoranthene	50	1,100
129-00-0	Pyrene	50	1,400
56-55-3	Benzo (a) anthracene	50	550
218-01-9	Chrysene	50	730
205-99-2	Benzo (b) fluoranthene	50	550
207-08-9	Benzo (k) fluoranthene	50	500
50-32-8	Benzo (a) pyrene	50	590
193-39-5	Indeno (1,2,3-cd) pyrene	50	370
53-70-3	Dibenz (a,h) anthracene	50	100
191-24-2	Benzo (g,h,i) perylene	50	470
198-55-0	Perylene	50	330
92-52-4	Biphenyl	50	< 50 U
581-42-0	2,6-Dimethylnaphthalene	50	54
832-69-9	1-Methylphenanthrene	99	< 99 Y
192-97-2	Benzo (e) pyrene	50	390
2245-38-7	2,3,5-Trimethylnaphthalene	50	120

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 58.3%  
d14-Dibenzo (a,h) anthracen 65.7%

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0044

**ORGANICS ANALYSIS DATA SHEET**

PNA's by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-S3-02-J

SAMPLE

Lab Sample ID: JT82D

LIMS ID: 06-15218

Matrix: Sediment

Data Release Authorized:

Reported: 09/04/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/18/06

Date Received: 07/21/06

Date Extracted: 08/25/06

Date Analyzed: 08/31/06 19:49

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 25.4%

pH: 6.5

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	5.0	24
91-57-6	2-Methylnaphthalene	5.0	9.9
90-12-0	1-Methylnaphthalene	5.0	6.9
208-96-8	Acenaphthylene	5.0	17
83-32-9	Acenaphthene	5.0	45
86-73-7	Fluorene	5.0	19
85-01-8	Phenanthrene	5.0	210
120-12-7	Anthracene	5.0	40
206-44-0	Fluoranthene	5.0	270
129-00-0	Pyrene	5.0	410
56-55-3	Benzo(a)anthracene	5.0	110
218-01-9	Chrysene	5.0	160
205-99-2	Benzo(b)fluoranthene	5.0	120
207-08-9	Benzo(k)fluoranthene	5.0	130
50-32-8	Benzo(a)pyrene	5.0	140
193-39-5	Indeno(1,2,3-cd)pyrene	5.0	42
53-70-3	Dibenz(a,h)anthracene	5.0	11
191-24-2	Benzo(g,h,i)perylene	5.0	46
198-55-0	Perylene	5.0	97
92-52-4	Biphenyl	5.0	< 5.0 U
581-42-0	2,6-Dimethylnaphthalene	5.0	21
832-69-9	1-Methylphenanthrene	33	< 33 Y
192-97-2	Benzo(e)pyrene	5.0	88
2245-38-7	2,3,5-Trimethylnaphthalene	5.0	54

Reported in µg/kg (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 70.7%  
d14-Dibenzo(a,h)anthracen 38.3%

↑ 10/20/06

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-S3-02-K-DUP

SAMPLE

Lab Sample ID: JT82E

LIMS ID: 06-15219

Matrix: Sediment

Data Release Authorized:

Reported: 09/04/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/18/06

Date Received: 07/21/06

Date Extracted: 08/25/06

Date Analyzed: 08/31/06 20:13

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.2 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 22.1%

pH: 6.7

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	4.9	4.9
91-57-6	2-Methylnaphthalene	4.9	< 4.9 U
90-12-0	1-Methylnaphthalene	4.9	< 4.9 U
208-96-8	Acenaphthylene	4.9	< 4.9 U
83-32-9	Acenaphthene	4.9	9.3
86-73-7	Fluorene	4.9	< 4.9 U
85-01-8	Phenanthrene	4.9	30
120-12-7	Anthracene	4.9	4.9
206-44-0	Fluoranthene	4.9	39
129-00-0	Pyrene	4.9	65
56-55-3	Benzo(a)anthracene	4.9	19
218-01-9	Chrysene	4.9	30
205-99-2	Benzo(b)fluoranthene	4.9	26
207-08-9	Benzo(k)fluoranthene	4.9	29
50-32-8	Benzo(a)pyrene	4.9	29
193-39-5	Indeno(1,2,3-cd)pyrene	4.9	9.3
53-70-3	Dibenz(a,h)anthracene	4.9	< 4.9 U
191-24-2	Benzo(g,h,i)perylene	4.9	13
198-55-0	Perylene	4.9	46
92-52-4	Biphenyl	4.9	< 4.9 U
581-42-0	2,6-Dimethylnaphthalene	4.9	< 4.9 U
832-69-9	1-Methylphenanthrene	4.9	< 4.9 Y
192-97-2	Benzo(e)pyrene	4.9	19
2245-38-7	2,3,5-Trimethylnaphthalene	4.9	8.8

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 70.0%  
d14-Dibenzo(a,h)anthracen 45.3%

*7/10/06*

0046

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-S3-02-H

SAMPLE

Lab Sample ID: JT82I

LIMS ID: 06-15223

Matrix: Sediment

Data Release Authorized:

Reported: 09/04/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/18/06

Date Received: 07/21/06

Date Extracted: 08/25/06

Date Analyzed: 08/31/06 21:27

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 1.36 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 32.0%

pH: 6.9

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	37	55
91-57-6	2-Methylnaphthalene	37	37
90-12-0	1-Methylnaphthalene	37	< 37 U
208-96-8	Acenaphthylene	37	< 37 U
83-32-9	Acenaphthene	37	96
86-73-7	Fluorene	37	59
85-01-8	Phenanthrene	37	560
120-12-7	Anthracene	37	110
206-44-0	Fluoranthene	37	930
129-00-0	Pyrene	37	1,200
56-55-3	Benzo (a) anthracene	37	460
218-01-9	Chrysene	37	650
205-99-2	Benzo (b) fluoranthene	37	590
207-08-9	Benzo (k) fluoranthene	37	610
50-32-8	Benzo (a) pyrene	37	550
193-39-5	Indeno (1,2,3-cd) pyrene	37	180
53-70-3	Dibenz (a,h) anthracene	37	77
191-24-2	Benzo (g,h,i) perylene	37	210
198-55-0	Perylene	37	260
92-52-4	Biphenyl	37	< 37 U
581-42-0	2,6-Dimethylnaphthalene	37	48
832-69-9	1-Methylphenanthrene	81	< 81 Y
192-97-2	Benzo (e) pyrene	37	380
2245-38-7	2,3,5-Trimethylnaphthalene	37	92

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatiles Surrogate Recovery**

d10-2-Methylnaphthalene 75.7%  
d14-Dibenzo (a,h) anthracen 50.0%

*2/10/06*

0047

LDC #: 15501A2b

**VALIDATION COMPLETENESS WORKSHEET**

SDG #: JT82

Level III

Laboratory: Analytical Resources, Inc.

Date: 7/13/06

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

**METHOD:** GC/MS Semivolatiles (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/13/06
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	NO SPCC
IV.	Continuing calibration	A	↓
V.	Blanks	A	
VI.	Surrogate spikes	W	
VII.	Matrix spike/Matrix spike duplicates	N	client purified
VIII.	Laboratory control samples	A	LC 9
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	W	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	W	D = T4-S3-02-K (J u 13)
XVII.	Field blanks	N	

Note: A = Acceptable  
N = Not provided/applicable  
SW = See worksheet

ND = No compounds detected  
R = Rinsate  
FB = Field blank

D = Duplicate  
TB = Trip blank  
EB = Equipment blank

Validated Samples:

M sed

1	T4-S3-01-J	11	MB-082506	21		31	
2	T4-S3-01-JDL	12		22		32	
3	T4-S3-01-K	13		23		33	
4	T4-S3-02-G	14		24		34	
5	T4-S3-02-GDL	15		25		35	
6	T4-S3-02-J	16		26		36	
7	T4-S3-02-K-DUP	17		27		37	
8	T4-S3-02-H	18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis(2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. <i>perylene</i>
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU. <i>Benzo(e) Pyrene</i>
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV. <i>1-Methylnaphthalene</i>
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW. <i>2,6-Dimethylnaphthalene</i>

XXX. 1-Methylphenanthrene  
 XXX. 2,3,5-Trimethylnaphthalene





LDC#: 15501A2b  
 SDG#: JT82

**VALIDATION FINDINGS WORKSHEET**  
**Field Duplicates**

Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

**METHOD:** GC/MS SVOA (EPA SW 846 Method 8270C-SIM)

Y N NA Were field duplicate pairs identified in this SDG?  
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/Kg)		RPD	(1595)
	7	T4-S3-02-K		
S	4.9	10	68	
W	4.9U	6.0	200	
VVV	4.9U	4.5	200	
DD	4.9U	3.5	200	
GG	9.3	16	53	
NN	4.9U	6.5	200	
UU	30	66	75	
VV	4.9	11	77	
YY	39	92	81	
ZZ	65	110	51	
CCC	19	38	67	
DDD	30	56	60	
GGG	26	37	35	
HHH	29	38	27	
III	29	44	41	
JJJ	9.3	22	81	
KKK	4.9U	6.0	200	
LLL	13	24	59	
TTT	46	90	65	
WWW	4.9U	10	200	
XXX	4.9U	20	200	
UUU	19	30	45	
YYY	8.8	18	69	

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Terminal 4 Early Action  
**Collection Date:** July 18 through July 20, 2006  
**LDC Report Date:** September 29, 2006  
**Matrix:** Sediment  
**Parameters:** Polynuclear Aromatic Hydrocarbons  
**Validation Level:** EPA Level III  
**Laboratory:** Analytical Resources, Inc.  
**Sample Delivery Group (SDG):** JU43

### Sample Identification

T4-B414-01-D	T4-S3-03-E
T4-B414-01-F	T4-S3-03-EDL
T4-B414-01-FDL	T4-S3-03-F
T4-B414-01-E	T4-S3-03-G
T4-B414-01-EDL	T4-S3-02-KMS
T4-B414-02-D	T4-S3-02-KMSD
T4-B414-02-E	T4-S3-08-DMS
T4-B414-02-F	T4-S3-08-DMSD
T4-B414-02-FDL	
T4-B414-04-D	
T4-B414-04-E	
T4-B414-04-EDL	
T4-B414-04-F	
T4-B414-04-FDL	
T4-S3-02-K	
T4-S3-08-D	
T4-S3-05-K	
T4-S3-07-F	
T4-S3-04-E	
T4-S3-04-F	

## Introduction

This data review covers 28 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270C using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. GC/MS Instrument Performance Check**

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

## **III. Initial Calibration**

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

## **IV. Continuing Calibration**

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

All of the continuing calibration RRF values were within validation criteria.

## **V. Blanks**

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

## **VI. Surrogate Spikes**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## **VII. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
T4-S3-02-KMS/MSD (T4-S3-02-K)	Benzo(k)fluoranthene	117 (26-110)	123 (26-110)	-	J (all detects)	A
T4-S3-08-DMS/MSD (T4-S3-08-D)	Phenanthrene	-	144 (17-136)	-	J (all detects)	A
T4-S3-08-DMS/MSD (T4-S3-08-D)	Chrysene	-	249 (36-111)	50.1 ( $\leq 30$ )	J (all detects) UJ (all non-detects)	A
	Benzo(k)fluoranthene	-	211 (26-110)	40.4 ( $\leq 30$ )	J (all detects) UJ (all non-detects)	

### VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

### IX. Regional Quality Assurance and Quality Control

Not applicable.

### X. Internal Standards

All internal standard areas and retention times were within QC limits.

### XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

### XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
T4-B414-01-F T4-S3-03-E	Phenanthrene Fluoranthene Pyrene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects) J (all detects)	A
T4-B414-01-E	Phenanthrene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Benzo(g,h,i)perylene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects)	A
T4-B414-02-F T4-B414-04-F	Fluoranthene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A
T4-B414-04-E	Phenanthrene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Benzo(g,h,i)perylene Perylene Benzo(e)pyrene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects)	A

Raw data were not reviewed for this SDG.

### XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

### XIV. System Performance

Raw data were not reviewed for this SDG.

### XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

### XVI. Field Duplicates

Samples T4-S3-02-K and T4-S3-02-K-DUP (from SDG JT82) were identified as field duplicates. No polynuclear aromatic hydrocarbons were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)
	T4-S3-02-K-DUP	T4-S3-02-K	
Naphthalene	4.9	10	68 ( $\leq 75$ )
2-Methylnaphthalene	4.9U	6.0	200 ( $\leq 75$ )
1-Methylnaphthalene	4.9U	4.5	200 ( $\leq 75$ )
Acenaphthylene	4.9U	3.5	200 ( $\leq 75$ )
Acenaphthene	9.3	16	53 ( $\leq 75$ )
Fluorene	4.9U	6.5	200 ( $\leq 75$ )
Phenanthrene	30	66	75 ( $\leq 75$ )
Anthracene	4.9	11	77 ( $\leq 75$ )
Fluoranthene	39	92	81 ( $\leq 75$ )
Pyrene	65	110	51 ( $\leq 75$ )
Benzo(a)anthracene	19	38	67 ( $\leq 75$ )
Chrysene	30	56	60 ( $\leq 75$ )
Benzo(b)fluoranthene	26	37	35 ( $\leq 75$ )
Benzo(k)fluoranthene	29	38	27 ( $\leq 75$ )
Benzo(a)pyrene	29	44	41 ( $\leq 75$ )
Indeno(1,2,3-cd)pyrene	9.3	22	81 ( $\leq 75$ )
Dibenz(a,h)anthracene	4.9U	6.0	200 ( $\leq 75$ )
Benzo(g,h,i)perylene	13	24	59 ( $\leq 75$ )
Perylene	46	90	65 ( $\leq 75$ )
2,6-Dimethylnaphthalene	4.9U	10	200 ( $\leq 75$ )
1-Methylphenanthrene	4.9U	20	200 ( $\leq 75$ )
Benzo(e)pyrene	19	30	45 ( $\leq 75$ )

Compound	Concentration (ug/Kg)		RPD (Limits)
	T4-S3-02-K-DUP	T4-S3-02-K	
2,3,5-Trimethylnaphthalene	8.8	18	69 ( $\leq 75$ )

### XVII. Field Blanks

No field blanks were identified in this SDG.

**Terminal 4 Early Action  
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG JU43**

SDG	Sample	Compound	Flag	A or P	Reason
JU43	T4-S3-02-K	Benzo(k)fluoranthene	J (all detects)	A	Matrix spike/Matrix spike duplicates (%R)
JU43	T4-S3-08-D	Phenanthrene	J (all detects)	A	Matrix spike/Matrix spike duplicates (%R)
JU43	T4-S3-08-D	Chrysene Benzo(k)fluoranthene	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R)(RPD)
JU43	T4-B414-01-F T4-S3-03-E	Phenanthrene Fluoranthene Pyrene	J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs
JU43	T4-B414-01-E	Phenanthrene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Benzo(g,h,i)perylene	J (all detects) J (all detects)	A	Compound quantitation and CRQLs
JU43	T4-B414-02-F T4-B414-04-F	Fluoranthene	J (all detects)	A	Compound quantitation and CRQLs
JU43	T4-B414-04-E	Phenanthrene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Benzo(g,h,i)perylene Perylene Benzo(e)pyrene	J (all detects) J (all detects)	A	Compound quantitation and CRQLs

**Terminal 4 Early Action  
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary  
- SDG JU43**

No Sample Data Qualified in this SDG

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-B414-01-D

SAMPLE

Lab Sample ID: JU43A

LIMS ID: 06-15845

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/12/06 12:53

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 1.20 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 45.1%

pH: 6.8

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	42	130
91-57-6	2-Methylnaphthalene	42	75
90-12-0	1-Methylnaphthalene	42	29 J
208-96-8	Acenaphthylene	42	29 J
83-32-9	Acenaphthene	42	150
86-73-7	Fluorene	42	120
85-01-8	Phenanthrene	42	330
120-12-7	Anthracene	42	100
206-44-0	Fluoranthene	42	730
129-00-0	Pyrene	42	710
56-55-3	Benzo (a) anthracene	42	240
218-01-9	Chrysene	42	370
205-99-2	Benzo (b) fluoranthene	42	280
207-08-9	Benzo (k) fluoranthene	42	250
50-32-8	Benzo (a) pyrene	42	280
193-39-5	Indeno (1,2,3-cd) pyrene	42	200
53-70-3	Dibenz (a,h) anthracene	42	46
191-24-2	Benzo (g,h,i) perylene	42	280
198-55-0	Perylene	42	370
92-52-4	Biphenyl	42	< 42 U
581-42-0	2,6-Dimethylnaphthalene	42	< 42 U
832-69-9	1-Methylphenanthrene	42	< 42 U
192-97-2	Benzo (e) pyrene	42	240
2245-38-7	2,3,5-Trimethylnaphthalene	42	< 42 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 82.7%  
d14-Dibenzo (a,h) anthracen 89.3%

*6/10/06*

0053

ORGANICS ANALYSIS DATA SHEET  
PNAs by SW8270D-SIM GC/MS  
Page 1 of 1

Sample ID: T4-B414-01-F  
SAMPLE

Lab Sample ID: JU43B  
LIMS ID: 06-15846  
Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
Project: T4 EARLY ACTION  
Event: 050332-01  
Date Sampled: 07/20/06  
Date Received: 07/24/06

Date Extracted: 09/06/06  
Date Analyzed: 09/12/06 13:17  
Instrument/Analyst: NT1/VTS  
GPC Cleanup: No  
Silica Gel Cleanup: Yes

Sample Amount: 1.23 g-dry-wt  
Final Extract Volume: 0.5 mL  
Dilution Factor: 1.00  
Percent Moisture: 42.2%  
pH: 6.4

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	41	750
91-57-6	2-Methylnaphthalene	41	810
90-12-0	1-Methylnaphthalene	41	890
208-96-8	Acenaphthylene	41	170
83-32-9	Acenaphthene	41	3,300
86-73-7	Fluorene	41	2,800
85-01-8	Phenanthrene	41	10,000 E J
120-12-7	Anthracene	41	1,900
206-44-0	Fluoranthene	41	7,000 E J
129-00-0	Pyrene	41	6,000 E J
56-55-3	Benzo (a) anthracene	41	1,800
218-01-9	Chrysene	41	2,400
205-99-2	Benzo (b) fluoranthene	41	980
207-08-9	Benzo (k) fluoranthene	41	1,200
50-32-8	Benzo (a) pyrene	41	1,600
193-39-5	Indeno (1,2,3-cd) pyrene	41	870
53-70-3	Dibenz (a,h) anthracene	41	220
191-24-2	Benzo (g,h,i) perylene	41	1,200
198-55-0	Perylene	41	520
92-52-4	Biphenyl	41	77
581-42-0	2,6-Dimethylnaphthalene	41	1,300
832-69-9	1-Methylphenanthrene	41	920
192-97-2	Benzo (e) pyrene	41	990
2245-38-7	2,3,5-Trimethylnaphthalene	41	620

Reported in µg/kg (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 89.3%  
d14-Dibenzo (a,h) anthracen 107%

*2/00576*

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-B414-01-F  
DILUTION

Lab Sample ID: JU43B

LIMS ID: 06-15846

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/13/06 15:08

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 1.23 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 5.00

Percent Moisture: 42.2%

pH: 6.4

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	200	790
91-57-6	2-Methylnaphthalene	200	810
90-12-0	1-Methylnaphthalene	200	890
208-96-8	Acenaphthylene	200	180 J
83-32-9	Acenaphthene	200	3,200
86-73-7	Fluorene	200	2,700
85-01-8	Phenanthrene	200	11,000
120-12-7	Anthracene	200	1,800
206-44-0	Fluoranthene	200	7,200
129-00-0	Pyrene	200	6,400
56-55-3	Benzo (a) anthracene	200	1,700
218-01-9	Chrysene	200	2,200
205-99-2	Benzo (b) fluoranthene	200	1,000
207-08-9	Benzo (k) fluoranthene	200	1,100
50-32-8	Benzo (a) pyrene	200	1,400
193-39-5	Indeno (1,2,3-cd) pyrene	200	710
53-70-3	Dibenz (a,h) anthracene	200	240
191-24-2	Benzo (g,h,i) perylene	200	920
198-55-0	Perylene	200	510
92-52-4	Biphenyl	200	< 200 U
581-42-0	2,6-Dimethylnaphthalene	200	1,200
832-69-9	1-Methylphenanthrene	200	980
192-97-2	Benzo (e) pyrene	200	920
2245-38-7	2,3,5-Trimethylnaphthalene	200	670

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 88.7%  
d14-Dibenzo (a,h) anthracen 84.2%

*Cloud*

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-B414-01-E  
SAMPLE

Lab Sample ID: JU43C  
LIMS ID: 06-15847  
Matrix: Sediment  
Data Release Authorized:  
Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
Project: T4 EARLY ACTION  
Event: 050332-01  
Date Sampled: 07/20/06  
Date Received: 07/24/06

Date Extracted: 09/06/06  
Date Analyzed: 09/12/06 14:17  
Instrument/Analyst: NT1/VTS  
GPC Cleanup: No  
Silica Gel Cleanup: Yes

Sample Amount: 10.2 g-dry-wt  
Final Extract Volume: 0.5 mL  
Dilution Factor: 3.00  
Percent Moisture: 43.7%  
pH: 6.7

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	15	590
91-57-6	2-Methylnaphthalene	15	430
90-12-0	1-Methylnaphthalene	15	180
208-96-8	Acenaphthylene	15	160
83-32-9	Acenaphthene	15	1,100
86-73-7	Fluorene	15	790
85-01-8	Phenanthrene	15	3,000 E J
120-12-7	Anthracene	15	510
206-44-0	Fluoranthene	15	4,200 E J
129-00-0	Pyrene	15	3,800 E
56-55-3	Benzo (a) anthracene	15	1,700 E
218-01-9	Chrysene	15	2,300 E
205-99-2	Benzo (b) fluoranthene	15	1,700 E
207-08-9	Benzo (k) fluoranthene	15	1,500 E
50-32-8	Benzo (a) pyrene	15	2,300 E
193-39-5	Indeno (1,2,3-cd) pyrene	15	1,300
53-70-3	Dibenz (a, h) anthracene	15	330
191-24-2	Benzo (g, h, i) perylene	15	1,700 E J
198-55-0	Perylene	15	750
92-52-4	Biphenyl	15	79
581-42-0	2,6-Dimethylnaphthalene	15	190
832-69-9	1-Methylphenanthrene	15	260
192-97-2	Benzo (e) pyrene	15	1,400
2245-38-7	2,3,5-Trimethylnaphthalene	15	170

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 93.3%  
d14-Dibenzo (a, h) anthracen 88.8%

8/10/06

ORGANICS ANALYSIS DATA SHEET  
PNAs by SW8270D-SIM GC/MS  
Page 1 of 1

Sample ID: T4-B414-01-E  
DILUTION

Lab Sample ID: JU43C  
LIMS ID: 06-15847  
Matrix: Sediment  
Data Release Authorized:  
Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
Project: T4 EARLY ACTION  
Event: 050332-01  
Date Sampled: 07/20/06  
Date Received: 07/24/06

Date Extracted: 09/06/06  
Date Analyzed: 09/13/06 15:33  
Instrument/Analyst: NT1/VTS  
GPC Cleanup: No  
Silica Gel Cleanup: Yes

Sample Amount: 10.2 g-dry-wt  
Final Extract Volume: 0.5 mL  
Dilution Factor: 20.0  
Percent Moisture: 43.7%  
pH: 6.7

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	98	550
91-57-6	2-Methylnaphthalene	98	390
90-12-0	1-Methylnaphthalene	98	170
208-96-8	Acenaphthylene	98	150
83-32-9	Acenaphthene	98	1,100
86-73-7	Fluorene	98	740
85-01-8	Phenanthrene	98	3,000
120-12-7	Anthracene	98	460
206-44-0	Fluoranthene	98	4,400
129-00-0	Pyrene	98	4,300
56-55-3	Benzo (a) anthracene	98	1,700
218-01-9	Chrysene	98	2,200
205-99-2	Benzo (b) fluoranthene	98	1,300
207-08-9	Benzo (k) fluoranthene	98	1,800
50-32-8	Benzo (a) pyrene	98	2,300
193-39-5	Indeno (1,2,3-cd) pyrene	98	1,200
53-70-3	Dibenz (a,h) anthracene	98	260
191-24-2	Benzo (g,h,i) perylene	98	1,500
198-55-0	Perylene	98	750
92-52-4	Biphenyl	98	< 98 U
581-42-0	2,6-Dimethylnaphthalene	98	190
832-69-9	1-Methylphenanthrene	98	280
192-97-2	Benzo (e) pyrene	98	1,400
2245-38-7	2,3,5-Trimethylnaphthalene	98	150

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 88.0%  
d14-Dibenzo (a,h) anthracen 105%

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ORGANICS ANALYSIS DATA SHEET  
PNAs by SW8270D-SIM GC/MS  
Page 1 of 1

Sample ID: T4-B414-02-D  
SAMPLE

Lab Sample ID: JU43D  
LIMS ID: 06-15848  
Matrix: Sediment  
Data Release Authorized:  
Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
Project: T4 EARLY ACTION  
Event: 050332-01  
Date Sampled: 07/19/06  
Date Received: 07/24/06

Date Extracted: 09/06/06  
Date Analyzed: 09/12/06 14:42  
Instrument/Analyst: NT1/VTS  
GPC Cleanup: No  
Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt  
Final Extract Volume: 0.5 mL  
Dilution Factor: 1.00  
Percent Moisture: 45.3%  
pH: 6.7

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	5.0	96
91-57-6	2-Methylnaphthalene	5.0	46
90-12-0	1-Methylnaphthalene	5.0	17
208-96-8	Acenaphthylene	5.0	19
83-32-9	Acenaphthene	5.0	61
86-73-7	Fluorene	5.0	59
85-01-8	Phenanthrene	5.0	280
120-12-7	Anthracene	5.0	77
206-44-0	Fluoranthene	5.0	470
129-00-0	Pyrene	5.0	480
56-55-3	Benzo (a) anthracene	5.0	190
218-01-9	Chrysene	5.0	270
205-99-2	Benzo (b) fluoranthene	5.0	220
207-08-9	Benzo (k) fluoranthene	5.0	170
50-32-8	Benzo (a) pyrene	5.0	200
193-39-5	Indeno (1,2,3-cd) pyrene	5.0	110
53-70-3	Dibenz (a,h) anthracene	5.0	33
191-24-2	Benzo (g,h,i) perylene	5.0	120
198-55-0	Perylene	5.0	300
92-52-4	Biphenyl	5.0	12
581-42-0	2,6-Dimethylnaphthalene	5.0	32
832-69-9	1-Methylphenanthrene	5.0	30
192-97-2	Benzo (e) pyrene	5.0	150
2245-38-7	2,3,5-Trimethylnaphthalene	5.0	17

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 77.3%  
d14-Dibenzo (a,h) anthracen 64.3%

↑ 10/25/06



ORGANICS ANALYSIS DATA SHEET  
 PNAs by SW8270D-SIM GC/MS  
 Page 1 of 1

Sample ID: T4-B414-02-E  
 SAMPLE

Lab Sample ID: JU43E  
 LIMS ID: 06-15849  
 Matrix: Sediment  
 Data Release Authorized:  
 Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
 Project: T4 EARLY ACTION  
 Event: 050332-01  
 Date Sampled: 07/19/06  
 Date Received: 07/24/06

Date Extracted: 09/06/06  
 Date Analyzed: 09/12/06 15:07  
 Instrument/Analyst: NT1/VTS  
 GPC Cleanup: No  
 Silica Gel Cleanup: Yes

Sample Amount: 10.2 g-dry-wt  
 Final Extract Volume: 0.5 mL  
 Dilution Factor: 1.00  
 Percent Moisture: 44.0%  
 pH: 6.6

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	4.9	70
91-57-6	2-Methylnaphthalene	4.9	48
90-12-0	1-Methylnaphthalene	4.9	17
208-96-8	Acenaphthylene	4.9	22
83-32-9	Acenaphthene	4.9	74
86-73-7	Fluorene	4.9	63
85-01-8	Phenanthrene	4.9	260
120-12-7	Anthracene	4.9	62
206-44-0	Fluoranthene	4.9	370
129-00-0	Pyrene	4.9	400
56-55-3	Benzo (a) anthracene	4.9	140
218-01-9	Chrysene	4.9	230
205-99-2	Benzo (b) fluoranthene	4.9	180
207-08-9	Benzo (k) fluoranthene	4.9	140
50-32-8	Benzo (a) pyrene	4.9	190
193-39-5	Indeno (1,2,3-cd) pyrene	4.9	95
53-70-3	Dibenz (a,h) anthracene	4.9	29
191-24-2	Benzo (g,h,i) perylene	4.9	120
198-55-0	Perylene	4.9	240
92-52-4	Biphenyl	4.9	10
581-42-0	2,6-Dimethylnaphthalene	4.9	33
832-69-9	1-Methylphenanthrene	4.9	33
192-97-2	Benzo (e) pyrene	4.9	130
2245-38-7	2,3,5-Trimethylnaphthalene	4.9	29

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 82.3%  
 d14-Dibenzo (a,h) anthracen 80.7%

0100506

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-B414-02-F

SAMPLE

Lab Sample ID: JU43F

LIMS ID: 06-15850

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/19/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/12/06 15:31

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

Percent Moisture: 42.5%

pH: 6.2

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	15	400
91-57-6	2-Methylnaphthalene	15	230
90-12-0	1-Methylnaphthalene	15	120
208-96-8	Acenaphthylene	15	49
83-32-9	Acenaphthene	15	580
86-73-7	Fluorene	15	430
85-01-8	Phenanthrene	15	1,400
120-12-7	Anthracene	15	240
206-44-0	Fluoranthene	15	1,600 E J
129-00-0	Pyrene	15	1,400
56-55-3	Benzo (a) anthracene	15	500
218-01-9	Chrysene	15	710
205-99-2	Benzo (b) fluoranthene	15	460
207-08-9	Benzo (k) fluoranthene	15	390
50-32-8	Benzo (a) pyrene	15	430
193-39-5	Indeno (1,2,3-cd) pyrene	15	200
53-70-3	Dibenz (a,h) anthracene	15	48
191-24-2	Benzo (g,h,i) perylene	15	230
198-55-0	Perylene	15	270
92-52-4	Biphenyl	15	36
581-42-0	2,6-Dimethylnaphthalene	15	160
832-69-9	1-Methylphenanthrene	15	150
192-97-2	Benzo (e) pyrene	15	310
2245-38-7	2,3,5-Trimethylnaphthalene	15	110

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 88.7%  
d14-Dibenzo (a,h) anthracen 69.7%

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ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-B414-02-F

DILUTION

Lab Sample ID: JU43F

LIMS ID: 06-15850

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/19/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/13/06 15:59

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 10.0

Percent Moisture: 42.5%

pH: 6.2

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	50	390
91-57-6	2-Methylnaphthalene	50	220
90-12-0	1-Methylnaphthalene	50	110
208-96-8	Acenaphthylene	50	40 J
83-32-9	Acenaphthene	50	540
86-73-7	Fluorene	50	400
85-01-8	Phenanthrene	50	1,300
120-12-7	Anthracene	50	220
206-44-0	Fluoranthene	50	1,500
129-00-0	Pyrene	50	1,400
56-55-3	Benzo (a) anthracene	50	460
218-01-9	Chrysene	50	650
205-99-2	Benzo (b) fluoranthene	50	440
207-08-9	Benzo (k) fluoranthene	50	350
50-32-8	Benzo (a) pyrene	50	380
193-39-5	Indeno (1,2,3-cd) pyrene	50	180
53-70-3	Dibenz (a,h) anthracene	50	40 J
191-24-2	Benzo (g,h,i) perylene	50	230
198-55-0	Perylene	50	250
92-52-4	Biphenyl	50	< 50 U
581-42-0	2,6-Dimethylnaphthalene	50	150
832-69-9	1-Methylphenanthrene	50	130
192-97-2	Benzo (e) pyrene	50	280
2245-38-7	2,3,5-Trimethylnaphthalene	50	110

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 82.3%  
d14-Dibenzo(a,h) anthracen 62.0%

C 100506

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-B414-04-D

SAMPLE

Lab Sample ID: JU43G

LIMS ID: 06-15851

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/12/06 15:56

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.2 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 50.5%

pH: 6.7

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	4.9	28
91-57-6	2-Methylnaphthalene	4.9	15
90-12-0	1-Methylnaphthalene	4.9	12
208-96-8	Acenaphthylene	4.9	6.4
83-32-9	Acenaphthene	4.9	51
86-73-7	Fluorene	4.9	30
85-01-8	Phenanthrene	4.9	190
120-12-7	Anthracene	4.9	39
206-44-0	Fluoranthene	4.9	310
129-00-0	Pyrene	4.9	280
56-55-3	Benzo (a) anthracene	4.9	130
218-01-9	Chrysene	4.9	180
205-99-2	Benzo (b) fluoranthene	4.9	190
207-08-9	Benzo (k) fluoranthene	4.9	150
50-32-8	Benzo (a) pyrene	4.9	180
193-39-5	Indeno (1,2,3-cd) pyrene	4.9	97
53-70-3	Dibenz (a,h) anthracene	4.9	33
191-24-2	Benzo (g,h,i) perylene	4.9	100
198-55-0	Perylene	4.9	250
92-52-4	Biphenyl	4.9	5.4
581-42-0	2,6-Dimethylnaphthalene	4.9	12
832-69-9	1-Methylphenanthrene	4.9	17
192-97-2	Benzo (e) pyrene	4.9	120
2245-38-7	2,3,5-Trimethylnaphthalene	4.9	6.4

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene	88.3%
d14-Dibenzo (a,h) anthracen	81.3%

↑ 10/20/06



ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-B414-04-E

SAMPLE

Lab Sample ID: JU43H

LIMS ID: 06-15852

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/12/06 16:21

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 45.5%

pH: 6.7

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	5.0	84
91-57-6	2-Methylnaphthalene	5.0	33
90-12-0	1-Methylnaphthalene	5.0	15
208-96-8	Acenaphthylene	5.0	20
83-32-9	Acenaphthene	5.0	160
86-73-7	Fluorene	5.0	81
85-01-8	Phenanthrene	5.0	650 E J
120-12-7	Anthracene	5.0	170
206-44-0	Fluoranthene	5.0	1,300 E J
129-00-0	Pyrene	5.0	1,200 E
56-55-3	Benzo (a) anthracene	5.0	770 E
218-01-9	Chrysene	5.0	970 E
205-99-2	Benzo (b) fluoranthene	5.0	1,100 E
207-08-9	Benzo (k) fluoranthene	5.0	780 E
50-32-8	Benzo (a) pyrene	5.0	1,000 E ↓
193-39-5	Indeno (1,2,3-cd) pyrene	5.0	490
53-70-3	Dibenz (a,h) anthracene	5.0	180
191-24-2	Benzo (g,h,i) perylene	5.0	500 E J
198-55-0	Perylene	5.0	600 E ↓
92-52-4	Biphenyl	5.0	9.4
581-42-0	2,6-Dimethylnaphthalene	5.0	21
832-69-9	1-Methylphenanthrene	5.0	59
192-97-2	Benzo (e) pyrene	5.0	670 E J
2245-38-7	2,3,5-Trimethylnaphthalene	5.0	13

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 92.0%  
d14-Dibenzo(a,h)anthracen 78.7%

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**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-B414-04-E  
DILUTION

Lab Sample ID: JU43H

LIMS ID: 06-15852

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/14/06 09:02

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 5.00

Percent Moisture: 45.5%

pH: 6.7

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	25	82
91-57-6	2-Methylnaphthalene	25	35
90-12-0	1-Methylnaphthalene	25	15 J
208-96-8	Acenaphthylene	25	20 J
83-32-9	Acenaphthene	25	140
86-73-7	Fluorene	25	82
85-01-8	Phenanthrene	25	650
120-12-7	Anthracene	25	150
206-44-0	Fluoranthene	25	1,400
129-00-0	Pyrene	25	1,200
56-55-3	Benzo (a) anthracene	25	770
218-01-9	Chrysene	25	1,000
205-99-2	Benzo (b) fluoranthene	25	1,100
207-08-9	Benzo (k) fluoranthene	25	810
50-32-8	Benzo (a) pyrene	25	1,000
193-39-5	Indeno (1,2,3-cd) pyrene	25	660
53-70-3	Dibenz (a,h) anthracene	25	230
191-24-2	Benzo (g,h,i) perylene	25	800
198-55-0	Perylene	25	590
92-52-4	Biphenyl	25	< 25 U
581-42-0	2,6-Dimethylnaphthalene	25	< 25 U
832-69-9	1-Methylphenanthrene	25	52
192-97-2	Benzo (e) pyrene	25	670
2245-38-7	2,3,5-Trimethylnaphthalene	25	< 25 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 91.7%  
d14-Dibenzo (a,h) anthracen 91.7%

7/14/06

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-B414-04-F

SAMPLE

Lab Sample ID: JU43I

LIMS ID: 06-15853

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/12/06 16:45

Instrument/Analyst: NTL/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 44.1%

pH: 6.8

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	5.0	40
91-57-6	2-Methylnaphthalene	5.0	22
90-12-0	1-Methylnaphthalene	5.0	10
208-96-8	Acenaphthylene	5.0	12
83-32-9	Acenaphthene	5.0	62
86-73-7	Fluorene	5.0	48
85-01-8	Phenanthrene	5.0	300
120-12-7	Anthracene	5.0	60
206-44-0	Fluoranthene	5.0	540 E J
129-00-0	Pyrene	5.0	480
56-55-3	Benzo (a) anthracene	5.0	240
218-01-9	Chrysene	5.0	340
205-99-2	Benzo (b) fluoranthene	5.0	320
207-08-9	Benzo (k) fluoranthene	5.0	280
50-32-8	Benzo (a) pyrene	5.0	310
193-39-5	Indeno (1, 2, 3-cd) pyrene	5.0	140
53-70-3	Dibenz (a, h) anthracene	5.0	56
191-24-2	Benzo (g, h, i) perylene	5.0	150
198-55-0	Perylene	5.0	370
92-52-4	Biphenyl	5.0	6.4
581-42-0	2,6-Dimethylnaphthalene	5.0	16
832-69-9	1-Methylphenanthrene	5.0	28 M
192-97-2	Benzo (e) pyrene	5.0	220
2245-38-7	2,3,5-Trimethylnaphthalene	5.0	15

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 86.0%  
d14-Dibenzo (a, h) anthracen 68.0%

*E 100506*

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-B414-04-F  
DILUTION

Lab Sample ID: JU43I

LIMS ID: 06-15853

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/14/06 09:27

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

Percent Moisture: 44.1%

pH: 6.8

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	15	40
91-57-6	2-Methylnaphthalene	15	24
90-12-0	1-Methylnaphthalene	15	10 J
208-96-8	Acenaphthylene	15	12 J
83-32-9	Acenaphthene	15	61
86-73-7	Fluorene	15	48
85-01-8	Phenanthrene	15	300
120-12-7	Anthracene	15	58
206-44-0	Fluoranthene	15	590
129-00-0	Pyrene	15	480
56-55-3	Benzo (a) anthracene	15	250
218-01-9	Chrysene	15	350
205-99-2	Benzo (b) fluoranthene	15	340
207-08-9	Benzo (k) fluoranthene	15	270
50-32-8	Benzo (a) pyrene	15	320
193-39-5	Indeno (1,2,3-cd) pyrene	15	200
53-70-3	Dibenz (a, h) anthracene	15	59
191-24-2	Benzo (g, h, i) perylene	15	240
198-55-0	Perylene	15	390
92-52-4	Biphenyl	15	< 15 U
581-42-0	2,6-Dimethylnaphthalene	15	16
832-69-9	1-Methylphenanthrene	15	28 M
192-97-2	Benzo (e) pyrene	15	220
2245-38-7	2,3,5-Trimethylnaphthalene	15	16

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 88.0%  
d14-Dibenzo (a, h) anthracen 81.0%

*Handwritten signature*

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-S3-02-K

SAMPLE

Lab Sample ID: JU43J

LIMS ID: 06-15854

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/18/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/12/06 17:10

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.0 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 25.8%

pH: 6.2

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	5.0	10
91-57-6	2-Methylnaphthalene	5.0	6.0
90-12-0	1-Methylnaphthalene	5.0	4.5 J
208-96-8	Acenaphthylene	5.0	3.5 J
83-32-9	Acenaphthene	5.0	16
86-73-7	Fluorene	5.0	6.5
85-01-8	Phenanthrene	5.0	66
120-12-7	Anthracene	5.0	11
206-44-0	Fluoranthene	5.0	92
129-00-0	Pyrene	5.0	110
56-55-3	Benzo (a) anthracene	5.0	38
218-01-9	Chrysene	5.0	56
205-99-2	Benzo (b) fluoranthene	5.0	37
207-08-9	Benzo (k) fluoranthene	5.0	38 J
50-32-8	Benzo (a) pyrene	5.0	44
193-39-5	Indeno (1,2,3-cd) pyrene	5.0	22
53-70-3	Dibenz (a,h) anthracene	5.0	6.0
191-24-2	Benzo (g,h,i) perylene	5.0	24
198-55-0	Perylene	5.0	90
92-52-4	Biphenyl	5.0	< 5.0 U
581-42-0	2,6-Dimethylnaphthalene	5.0	10
832-69-9	1-Methylphenanthrene	5.0	20 M
192-97-2	Benzo (e) pyrene	5.0	30
2245-38-7	2,3,5-Trimethylnaphthalene	5.0	18

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 93.0%  
d14-Dibenzo (a,h) anthracen 90.0%

*10/10/06*



ORGANICS ANALYSIS DATA SHEET  
 PNAs by SW8270D-SIM GC/MS  
 Page 1 of 1

Sample ID: T4-S3-08-D  
 SAMPLE

Lab Sample ID: JU43K  
 LIMS ID: 06-15855  
 Matrix: Sediment  
 Data Release Authorized:  
 Reported: 09/14/06

QC Report No: JU43-Anchor Environmental  
 Project: T4 EARLY ACTION  
 Event: 050332-01  
 Date Sampled: 07/19/06  
 Date Received: 07/24/06

Date Extracted: 09/06/06  
 Date Analyzed: 09/12/06 18:24  
 Instrument/Analyst: NT1/VTS  
 GPC Cleanup: No  
 Silica Gel Cleanup: Yes

Sample Amount: 10.2 g-dry-wt  
 Final Extract Volume: 0.5 mL  
 Dilution Factor: 1.00  
 Percent Moisture: 24.7%  
 pH: 6.3

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	4.9	6.4
91-57-6	2-Methylnaphthalene	4.9	3.9 J
90-12-0	1-Methylnaphthalene	4.9	2.0 J
208-96-8	Acenaphthylene	4.9	< 4.9 U
83-32-9	Acenaphthene	4.9	29
86-73-7	Fluorene	4.9	12
85-01-8	Phenanthrene	4.9	110 J
120-12-7	Anthracene	4.9	26
206-44-0	Fluoranthene	4.9	250
129-00-0	Pyrene	4.9	220
56-55-3	Benzo (a) anthracene	4.9	160
218-01-9	Chrysene	4.9	190 J
205-99-2	Benzo (b) fluoranthene	4.9	190
207-08-9	Benzo (k) fluoranthene	4.9	190 J
50-32-8	Benzo (a) pyrene	4.9	220
193-39-5	Indeno (1,2,3-cd) pyrene	4.9	110
53-70-3	Dibenz (a,h) anthracene	4.9	39
191-24-2	Benzo (g,h,i) perylene	4.9	110
198-55-0	Perylene	4.9	69
92-52-4	Biphenyl	4.9	< 4.9 U
581-42-0	2,6-Dimethylnaphthalene	4.9	< 4.9 U
832-69-9	1-Methylphenanthrene	4.9	7.4 M
192-97-2	Benzo (e) pyrene	4.9	130
2245-38-7	2,3,5-Trimethylnaphthalene	4.9	< 4.9 U

Reported in µg/kg (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene	86.0%
d14-Dibenzo (a,h) anthracen	85.7%

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ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-S3-05-K

SAMPLE

Lab Sample ID: JU43L

LIMS ID: 06-15856

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/19/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/12/06 19:38

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 28.0%

pH: 6.3

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	5.0	< 5.0 U
91-57-6	2-Methylnaphthalene	5.0	< 5.0 U
90-12-0	1-Methylnaphthalene	5.0	< 5.0 U
208-96-8	Acenaphthylene	5.0	< 5.0 U
83-32-9	Acenaphthene	5.0	11
86-73-7	Fluorene	5.0	< 5.0 U
85-01-8	Phenanthrene	5.0	8.9
120-12-7	Anthracene	5.0	< 5.0 U
206-44-0	Fluoranthene	5.0	5.9
129-00-0	Pyrene	5.0	6.4
56-55-3	Benzo (a) anthracene	5.0	4.0 J
218-01-9	Chrysene	5.0	4.5 J
205-99-2	Benzo (b) fluoranthene	5.0	4.0 J
207-08-9	Benzo (k) fluoranthene	5.0	4.0 J
50-32-8	Benzo (a) pyrene	5.0	5.0
193-39-5	Indeno (1,2,3-cd) pyrene	5.0	2.5 J
53-70-3	Dibenz (a,h) anthracene	5.0	< 5.0 U
191-24-2	Benzo (g,h,i) perylene	5.0	< 5.0 U
198-55-0	Perylene	5.0	36
92-52-4	Biphenyl	5.0	< 5.0 U
581-42-0	2,6-Dimethylnaphthalene	5.0	< 5.0 U
832-69-9	1-Methylphenanthrene	5.0	< 5.0 U
192-97-2	Benzo (e) pyrene	5.0	< 5.0 U
2245-38-7	2,3,5-Trimethylnaphthalene	5.0	< 5.0 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 87.3%  
d14-Dibenzo (a,h) anthracen 85.0%

↑ 100506

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-S3-07-F  
SAMPLE

Lab Sample ID: JU43M

LIMS ID: 06-15857

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/12/06 20:03

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.2 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 26.8%

pH: 6.7

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	4.9	2.4 J
91-57-6	2-Methylnaphthalene	4.9	< 4.9 U
90-12-0	1-Methylnaphthalene	4.9	< 4.9 U
208-96-8	Acenaphthylene	4.9	< 4.9 U
83-32-9	Acenaphthene	4.9	3.4 J
86-73-7	Fluorene	4.9	< 4.9 U
85-01-8	Phenanthrene	4.9	16
120-12-7	Anthracene	4.9	3.9 J
206-44-0	Fluoranthene	4.9	43
129-00-0	Pyrene	4.9	36
56-55-3	Benzo (a) anthracene	4.9	25
218-01-9	Chrysene	4.9	30
205-99-2	Benzo (b) fluoranthene	4.9	28
207-08-9	Benzo (k) fluoranthene	4.9	31
50-32-8	Benzo (a) pyrene	4.9	33
193-39-5	Indeno (1,2,3-cd) pyrene	4.9	17
53-70-3	Dibenz (a,h) anthracene	4.9	6.9
191-24-2	Benzo (g,h,i) perylene	4.9	18
198-55-0	Perylene	4.9	12
92-52-4	Biphenyl	4.9	< 4.9 U
581-42-0	2,6-Dimethylnaphthalene	4.9	< 4.9 U
832-69-9	1-Methylphenanthrene	4.9	< 4.9 U
192-97-2	Benzo (e) pyrene	4.9	22
2245-38-7	2,3,5-Trimethylnaphthalene	4.9	< 4.9 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 81.7%  
d14-Dibenzo (a,h) anthracen 79.7%

*10/05/06*

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-S3-04-E

SAMPLE

Lab Sample ID: JU43N

LIMS ID: 06-15858

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/12/06 20:27

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.3 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 23.9%

pH: 6.3

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	4.8	< 4.8 U
91-57-6	2-Methylnaphthalene	4.8	< 4.8 U
90-12-0	1-Methylnaphthalene	4.8	< 4.8 U
208-96-8	Acenaphthylene	4.8	< 4.8 U
83-32-9	Acenaphthene	4.8	< 4.8 U
86-73-7	Fluorene	4.8	< 4.8 U
85-01-8	Phenanthrene	4.8	5.3
120-12-7	Anthracene	4.8	< 4.8 U
206-44-0	Fluoranthene	4.8	14
129-00-0	Pyrene	4.8	12
56-55-3	Benzo (a) anthracene	4.8	8.7
218-01-9	Chrysene	4.8	11
205-99-2	Benzo (b) fluoranthene	4.8	13
207-08-9	Benzo (k) fluoranthene	4.8	7.8
50-32-8	Benzo (a) pyrene	4.8	10
193-39-5	Indeno (1,2,3-cd) pyrene	4.8	5.3
53-70-3	Dibenz (a, h) anthracene	4.8	< 4.8 U
191-24-2	Benzo (g, h, i) perylene	4.8	4.8
198-55-0	Perylene	4.9	< 4.9 U
92-52-4	Biphenyl	4.9	< 4.9 U
581-42-0	2,6-Dimethylnaphthalene	4.8	< 4.8 U
832-69-9	1-Methylphenanthrene	4.8	< 4.8 U
192-97-2	Benzo (e) pyrene	4.8	7.8
2245-38-7	2,3,5-Trimethylnaphthalene	4.8	< 4.8 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 83.7%  
d14-Dibenzo (a, h) anthracen 84.3%

*12/05/06*

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-S3-04-F

SAMPLE

Lab Sample ID: JU430

LIMS ID: 06-15859

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/12/06 20:52

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.2 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 24.6%

pH: 6.7

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	4.9	< 4.9 U
91-57-6	2-Methylnaphthalene	4.9	< 4.9 U
90-12-0	1-Methylnaphthalene	4.9	< 4.9 U
208-96-8	Acenaphthylene	4.9	< 4.9 U
83-32-9	Acenaphthene	4.9	< 4.9 U
86-73-7	Fluorene	4.9	< 4.9 U
85-01-8	Phenanthrene	4.9	5.9
120-12-7	Anthracene	4.9	< 4.9 U
206-44-0	Fluoranthene	4.9	14
129-00-0	Pyrene	4.9	12
56-55-3	Benzo (a) anthracene	4.9	8.3
218-01-9	Chrysene	4.9	11
205-99-2	Benzo (b) fluoranthene	4.9	11
207-08-9	Benzo (k) fluoranthene	4.9	8.8
50-32-8	Benzo (a) pyrene	4.9	11
193-39-5	Indeno (1,2,3-cd) pyrene	4.9	4.4 J
53-70-3	Dibenz (a, h) anthracene	4.9	< 4.9 U
191-24-2	Benzo (g, h, i) perylene	4.9	5.4
198-55-0	Perylene	4.9	< 4.9 U
92-52-4	Biphenyl	4.9	< 4.9 U
581-42-0	2,6-Dimethylnaphthalene	4.9	< 4.9 U
832-69-9	1-Methylphenanthrene	4.9	< 4.9 U
192-97-2	Benzo (e) pyrene	4.9	6.9
2245-38-7	2,3,5-Trimethylnaphthalene	4.9	< 4.9 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 85.0%  
d14-Dibenzo (a, h) anthracen 80.3%

*RC 10/5/06*

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-S3-03-E

SAMPLE

Lab Sample ID: JU43P

LIMS ID: 06-15860

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/19/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/12/06 21:17

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 22.8%

pH: 6.0

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	5.0	90
91-57-6	2-Methylnaphthalene	5.0	51
90-12-0	1-Methylnaphthalene	5.0	29
208-96-8	Acenaphthylene	5.0	27
83-32-9	Acenaphthene	5.0	94
86-73-7	Fluorene	5.0	50
85-01-8	Phenanthrene	5.0	530 E
120-12-7	Anthracene	5.0	100
206-44-0	Fluoranthene	5.0	760 E
129-00-0	Pyrene	5.0	920 E
56-55-3	Benzo (a) anthracene	5.0	340
218-01-9	Chrysene	5.0	460
205-99-2	Benzo (b) fluoranthene	5.0	310
207-08-9	Benzo (k) fluoranthene	5.0	380
50-32-8	Benzo (a) pyrene	5.0	440
193-39-5	Indeno (1,2,3-cd) pyrene	5.0	180
53-70-3	Dibenz (a,h) anthracene	5.0	53
191-24-2	Benzo (g,h,i) perylene	5.0	210
198-55-0	Perylene	5.0	210
92-52-4	Biphenyl	5.0	12
581-42-0	2,6-Dimethylnaphthalene	5.0	71
832-69-9	1-Methylphenanthrene	31	< 31 Y
192-97-2	Benzo (e) pyrene	5.0	280
2245-38-7	2,3,5-Trimethylnaphthalene	5.0	180

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 87.3%  
d14-Dibenzo (a,h) anthracen 65.3%

R/00506

0073

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1



Sample ID: T4-S3-03-E

DILUTION

Lab Sample ID: JU43P

LIMS ID: 06-15860

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/19/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/14/06 09:51

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 5.00

Percent Moisture: 22.8%

pH: 6.0

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	25	89
91-57-6	2-Methylnaphthalene	25	47
90-12-0	1-Methylnaphthalene	25	30
208-96-8	Acenaphthylene	25	27
83-32-9	Acenaphthene	25	89
86-73-7	Fluorene	25	50
85-01-8	Phenanthrene	25	520
120-12-7	Anthracene	25	94
206-44-0	Fluoranthene	25	810
129-00-0	Pyrene	25	940
56-55-3	Benzo (a) anthracene	25	310
218-01-9	Chrysene	25	460
205-99-2	Benzo (b) fluoranthene	25	300
207-08-9	Benzo (k) fluoranthene	25	300
50-32-8	Benzo (a) pyrene	25	400
193-39-5	Indeno (1, 2, 3-cd) pyrene	25	240
53-70-3	Dibenz (a, h) anthracene	25	67
191-24-2	Benzo (g, h, i) perylene	25	330
198-55-0	Perylene	25	190
92-52-4	Biphenyl	25	< 25 U
581-42-0	2, 6-Dimethylnaphthalene	25	67
832-69-9	1-Methylphenanthrene	69	< 69 Y
192-97-2	Benzo (e) pyrene	25	250
2245-38-7	2, 3, 5-Trimethylnaphthalene	25	170

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 80.0%  
d14-Dibenzo (a, h) anthracen 90.0%

*C/100586*

0074

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-S3-03-F

SAMPLE

Lab Sample ID: JU43Q

LIMS ID: 06-15861

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/19/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/12/06 21:41

Instrument/Analyst: NT1/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 19.5%

pH: 5.7

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	5.0	24
91-57-6	2-Methylnaphthalene	5.0	15
90-12-0	1-Methylnaphthalene	5.0	6.9
208-96-8	Acenaphthylene	5.0	9.4
83-32-9	Acenaphthene	5.0	31
86-73-7	Fluorene	5.0	19
85-01-8	Phenanthrene	5.0	160
120-12-7	Anthracene	5.0	34
206-44-0	Fluoranthene	5.0	260
129-00-0	Pyrene	5.0	260
56-55-3	Benzo (a) anthracene	5.0	100
218-01-9	Chrysene	5.0	140
205-99-2	Benzo (b) fluoranthene	5.0	100
207-08-9	Benzo (k) fluoranthene	5.0	100
50-32-8	Benzo (a) pyrene	5.0	120
193-39-5	Indeno (1,2,3-cd) pyrene	5.0	57
53-70-3	Dibenz (a,h) anthracene	5.0	18
191-24-2	Benzo (g,h,i) perylene	5.0	58
198-55-0	Perylene	5.0	67
92-52-4	Biphenyl	5.0	< 5.0 U
581-42-0	2,6-Dimethylnaphthalene	5.0	16
832-69-9	1-Methylphenanthrene	28	< 28 Y
192-97-2	Benzo (e) pyrene	5.0	78
2245-38-7	2,3,5-Trimethylnaphthalene	5.0	31

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 81.0%

d14-Dibenzo (a,h) anthracen 68.0%

*Handwritten signature*

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: T4-S3-03-G

SAMPLE

Lab Sample ID: JU43R

LIMS ID: 06-15862

Matrix: Sediment

Data Release Authorized:

Reported: 09/14/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

Event: 050332-01

Date Sampled: 07/19/06

Date Received: 07/24/06

Date Extracted: 09/06/06

Date Analyzed: 09/12/06 22:06

Instrument/Analyst: NTI/VTS

GPC Cleanup: No

Silica Gel Cleanup: Yes

Sample Amount: 10.3 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 29.3%

pH: 5.8

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	4.8	26
91-57-6	2-Methylnaphthalene	4.8	23
90-12-0	1-Methylnaphthalene	4.8	12
208-96-8	Acenaphthylene	4.8	12
83-32-9	Acenaphthene	4.8	44
86-73-7	Fluorene	4.8	25
85-01-8	Phenanthrene	4.8	270
120-12-7	Anthracene	4.8	46
206-44-0	Fluoranthene	4.8	380
129-00-0	Pyrene	4.8	400
56-55-3	Benzo (a) anthracene	4.8	120
218-01-9	Chrysene	4.8	170
205-99-2	Benzo (b) fluoranthene	4.8	90
207-08-9	Benzo (k) fluoranthene	4.8	110
50-32-8	Benzo (a) pyrene	4.8	120
193-39-5	Indeno (1,2,3-cd) pyrene	4.8	50
53-70-3	Dibenz (a,h) anthracene	4.8	11
191-24-2	Benzo (g,h,i) perylene	4.8	58
198-55-0	Perylene	4.9	90
92-52-4	Biphenyl	4.9	< 4.9 U
581-42-0	2,6-Dimethylnaphthalene	4.8	30
832-69-9	1-Methylphenanthrene	52	< 52 Y
192-97-2	Benzo (e) pyrene	4.8	78
2245-38-7	2,3,5-Trimethylnaphthalene	4.8	45

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene 76.3%  
d14-Dibenzo (a,h) anthracen 62.3%

*Handwritten signature/initials*

**METHOD:** GC/MS Semivolatiles (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18-20/06
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	NO SPEC
IV.	Continuing calibration	A	↓
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	SW	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 15 + 15-DUP (JT82)
XVII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate  
 N = Not provided/applicable R = Rinsate TB = Trip blank  
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

MB Sed

1	T4-B414-01-D	11	T4-B414-04-E	21	T4-S3-03-E	31	MB-090606
2	T4-B414-01-F	12	T4-B414-04-EDL	22	T4-S3-03-EDL	32	
3	T4-B414-01-FDL	13	T4-B414-04-F	23	T4-S3-03-F	33	
4	T4-B414-01-E	14	T4-B414-04-FDL	24	T4-S3-03-G	34	
5	T4-B414-01-EDL	15	T4-S3-02-K	25	T4-S3-02-KMS	35	
6	T4-B414-02-D	16	T4-S3-08-D	26	T4-S3-02-KMSD	36	
7	T4-B414-02-E	17	T4-S3-05-K	27	T4-S3-08-DMS	37	
8	T4-B414-02-F	18	T4-S3-07-F	28	T4-S3-08-DMSD	38	
9	T4-B414-02-FDL	19	T4-S3-04-E	29		39	
10	T4-B414-04-D	20	T4-S3-04-F	30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. <i>perylene</i>
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU. <i>Benzo(e)pyrene</i>
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV. <i>1-Methylnaphthalene</i>
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW. <i>2,6-Dimethylnaphthalene</i>

XXX. 1-Methylphenanthrene  
 YYY. 2,3,5-Trimethylnaphthalene





LDC #: 15501B26  
 SDG #: 1143

**VALIDATION FINDINGS WORKSHEET**  
**Compound Quantitation and Reported CRQLs**

Page: 1 of 1  
 Reviewer: 9  
 2nd Reviewer: A

**METHOD:** GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".  
 Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?  
 Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Sample ID	Finding	Associated Samples	Qualifications
		2, 21	spds > cal-b range UU, YY, ZZ	2, 121	✓
		4	UU, YY, ZZ, CCC, DDD	4	
			<del>HHH</del> HHH, III, LLL		
		8, 13	YY	8, 13	
		11	UU, YY, ZZ, CCC, DDD	11	
			<del>HHH</del> HHH, III, LLL, TTT		
			UUU		✓
		27			

Comments: See sample calculation verification worksheet for recalculations

LDC#: 15501B2b  
 SDG#: JU43

**VALIDATION FINDINGS WORKSHEET**  
**Field Duplicates**

Page: 1 of 1  
 Reviewer: 9  
 2nd Reviewer: ✓

**METHOD:** GC/MS SVOA (EPA SW 846 Method 8270C-SIM)

Y N NA  
Y N NA

Were field duplicate pairs identified in this SDG?  
 Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/Kg)		RPD	1575
	T4-S3-02-K-DUP	15		
S	4.9	10	68	
W	4.9U	6.0	200	
VV	4.9U	4.5	200	
DD	4.9U	3.5	200	
GG	9.3	16	53	
NN	4.9U	6.5	200	
UU	30	66	75	
VV	4.9	11	77	
YY	39	92	81	
ZZ	65	110	51	
CCC	19	38	67	
DDD	30	56	60	
GGG	26	37	35	
HHH	29	38	27	
III	29	44	41	
JJJ	9.3	22	81	
KKK	4.9U	6.0	200	
LLL	13	24	59	
TTT	46	90	65	
WWW	4.9U	10	200	
XXX	4.9U	20	200	
UUU	19	30	45	
YYY	8.8	18	69	

**Terminal 4 Early Action  
Data Validation Reports  
LDC# 15501**

Lead & Zinc

LDC

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** Terminal 4 Early Action  
**Collection Date:** July 18 through July 19, 2006  
**LDC Report Date:** September 29, 2006  
**Matrix:** Sediment  
**Parameters:** Lead & Zinc  
**Validation Level:** EPA Level III  
**Laboratory:** Analytical Resources, Inc.  
**Sample Delivery Group (SDG):** JT82

**Sample Identification**

T4-S3-01-J  
T4-S3-01-K  
T4-S3-02-G  
T4-S3-02-J  
T4-S3-02-K-DUP  
T4-S3-03-E  
T4-S3-03-F  
T4-S3-03-G  
T4-S3-02-H  
T4-S3-01-JMS  
T4-S3-01-JDUP

## Introduction

This data review covers 11 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Lead and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2002) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

## III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Zinc	1.7 mg/Kg	All samples in SDG JT82

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

## IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

## V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

## VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
T4-S3-01-JDUP (All samples in SDG JT82)	Lead  Zinc	60.1 ( $\leq 20$ )  60.7 ( $\leq 20$ )	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

## VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

## VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

## IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

## X. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

## XI. Sample Result Verification

Raw data were not reviewed for this SDG.

## XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

## XIII. Field Duplicates

Samples T4-S3-02-K (from SDG JU43) and T4-S3-02-K-DUP were identified as field duplicates. No lead or zinc was detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)
	T4-S3-02-K-DUP	T4-S3-02-K	
Lead	16	19	17 ( $\leq 75$ )
Zinc	67.4	65.8	2 ( $\leq 75$ )

#### **XIV. Field Blanks**

No field blanks were identified in this SDG.

**Terminal 4 Early Action  
Lead & Zinc - Data Qualification Summary - SDG JT82**

SDG	Sample	Analyte	Flag	A or P	Reason
JT82	T4-S3-01-J T4-S3-01-K T4-S3-02-G T4-S3-02-J T4-S3-02-K-DUP T4-S3-03-E T4-S3-03-F T4-S3-03-G T4-S3-02-H	Lead  Zinc	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (RPD)

**Terminal 4 Early Action  
Lead & Zinc - Laboratory Blank Data Qualification Summary - SDG JT82**

No Sample Data Qualified in this SDG



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: T4-S3-01-J  
SAMPLE

Lab Sample ID: JT82A

LIMS ID: 06-15215

Matrix: Sediment

Data Release Authorized

Reported: 08/31/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

050332-01

Date Sampled: 07/18/06

Date Received: 07/21/06

Percent Total Solids: 66.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/24/06	6010B	08/28/06	7439-92-1	Lead	7	238	J
3050B	08/24/06	6010B	08/28/06	7440-66-6	Zinc	2	333	↓

U-Analyte undetected at given RL

RL-Reporting Limit

1/08/06

1.

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1

Sample ID: T4-S3-01-K  
SAMPLE

Lab Sample ID: JT82B

LIMS ID: 06-15216

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 08/31/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

050332-01

Date Sampled: 07/18/06

Date Received: 07/21/06

Percent Total Solids: 66.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/24/06	6010B	08/24/06	7439-92-1	Lead	3	42	J
3050B	08/24/06	6010B	08/24/06	7440-66-6	Zinc	0.9	68.6	↓

U-Analyte undetected at given RL

RL-Reporting Limit

*8/31/06*

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1

Sample ID: T4-S3-02-G  
SAMPLE

Lab Sample ID: JT82C

LIMS ID: 06-15217

Matrix: Sediment

Data Release Authorized *[Signature]*

Reported: 08/31/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

050332-01

Date Sampled: 07/18/06

Date Received: 07/21/06

Percent Total Solids: 60.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/24/06	6010B	08/24/06	7439-92-1	Lead	3	901	J
3050B	08/24/06	6010B	08/24/06	7440-66-6	Zinc	1	878	J

U-Analyte undetected at given RL

RL-Reporting Limit

*8/1/06*



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: T4-S3-02-J  
SAMPLE

Lab Sample ID: JT82D

LIMS ID: 06-15218

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 08/31/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

050332-01

Date Sampled: 07/18/06

Date Received: 07/21/06

Percent Total Solids: 72.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/24/06	6010B	08/24/06	7439-92-1	Lead	3	127	J
3050B	08/24/06	6010B	08/24/06	7440-66-6	Zinc	0.8	164	↓

U-Analyte undetected at given RL

RL-Reporting Limit

*11/08/06*



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS  
Page 1 of 1

Sample ID: T4-S3-02-K-DUP  
SAMPLE

Lab Sample ID: JT82E  
LIMS ID: 06-15219  
Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 08/31/06

QC Report No: JT82-Anchor Environmental  
Project: T-4 EARLY ACTION  
050332-01  
Date Sampled: 07/18/06  
Date Received: 07/21/06

Percent Total Solids: 78.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/24/06	6010B	08/24/06	7439-92-1	Lead	3	16	U
3050B	08/24/06	6010B	08/24/06	7440-66-6	Zinc	0.8	67.4	U

U-Analyte undetected at given RL  
RL-Reporting Limit

*8/10/06*



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: T4-S3-03-E  
SAMPLE

Lab Sample ID: JT82F

LIMS ID: 06-15220

Matrix: Sediment

Data Release Authorized: 

Reported: 08/31/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

050332-01

Date Sampled: 07/19/06

Date Received: 07/21/06

Percent Total Solids: 78.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/24/06	6010B	08/28/06	7439-92-1	Lead	6	217	J
3050B	08/24/06	6010B	08/28/06	7440-66-6	Zinc	2	280	↓

U-Analyte undetected at given RL

RL-Reporting Limit

*Handwritten signature*



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: T4-S3-03-F  
SAMPLE

Lab Sample ID: JT82G

LIMS ID: 06-15221

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 08/31/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

050332-01

Date Sampled: 07/19/06

Date Received: 07/21/06

Percent Total Solids: 81.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/24/06	6010B	08/24/06	7439-92-1	Lead	2	66	J
3050B	08/24/06	6010B	08/24/06	7440-66-6	Zinc	0.7	111	↓

U-Analyte undetected at given RL

RL-Reporting Limit

*Handwritten note: JL 100506*

0061



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: T4-S3-03-G  
SAMPLE

Lab Sample ID: JT82H

LIMS ID: 06-15222

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 08/31/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

050332-01

Date Sampled: 07/19/06

Date Received: 07/21/06

Percent Total Solids: 72.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/24/06	6010B	08/24/06	7439-92-1	Lead	3	131	J
3050B	08/24/06	6010B	08/24/06	7440-66-6	Zinc	0.8	178	J

U-Analyte undetected at given RL

RL-Reporting Limit

*[Handwritten signature]*

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1

Sample ID: T4-S3-02-H  
SAMPLE

Lab Sample ID: JT82I

LIMS ID: 06-15223

Matrix: Sediment

Data Release Authorized: 

Reported: 08/31/06

QC Report No: JT82-Anchor Environmental

Project: T-4 EARLY ACTION

050332-01

Date Sampled: 07/18/06

Date Received: 07/21/06

Percent Total Solids: 68.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/24/06	6010B	08/24/06	7439-92-1	Lead	3	723	J
3050B	08/24/06	6010B	08/24/06	7440-66-6	Zinc	0.8	701	J

U-Analyte undetected at given RL  
RL-Reporting Limit

*C 10/20/06*

**METHOD:** Lead & Zinc (EPA SW 846 Method 6010B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/06, 7/19/06
II.	Calibration	A	
III.	Blanks	SW	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	<del>A</del>	
VI.	Duplicate Sample Analysis	SW	
VII.	Laboratory Control Samples (LCS)	A	leg
VIII.	Internal Standard (ICP-MS)	N	} not utilized
IX.	Furnace Atomic Absorption QC	N	
X.	ICP Serial Dilution	<del>A</del>	not performed
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	SW	(5, T4-S3-02-K (SWT JU43))
XIV.	Field Blanks	N	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

Validated Samples:                     

1	T4-S3-01-J	11	T4-S3-01-JDUP	21		31	
2	T4-S3-01-K	12	PB	22		32	
3	T4-S3-02-G	13		23		33	
4	T4-S3-02-J	14		24		34	
5	T4-S3-02-K-DUP	15		25		35	
6	T4-S3-03-E	16		26		36	
7	T4-S3-03-F	17		27		37	
8	T4-S3-03-G	18		28		38	
9	T4-S3-02-H	19		29		39	
10	T4-S3-01-JMS	20		30		40	

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**VALIDATION FINDINGS WORKSHEET**  
**PB/ICB/CCB QUALIFIED SAMPLES**

LDC #: 15501 A4  
 SDG #: JTR  
 METHOD: Trace Metals (EPA SW 846 Method 6010/7000) Soil preparation factor applied: 1.0  
 Sample Concentration units, unless otherwise noted: ug/kg Associated Samples: A4

Analyte	Maximum PB* (mg/Kg)	Maximum PB* (ug/L)	Maximum ICB/CCB* (ug/L)	Blank Action Limit	Sample Identification
Al					Al
Sb					Sb
As					As
Ba					Ba
Be					Be
Cd					Cd
Ca					Ca
Cr					Cr
Cc					Co
Cu					Cu
Fe					Fe
Pb					Pb
Mg					Mg
Mn					Mn
Hg					Hg
Ni					Ni
K					K
Se					Se
Ag					Ag
Na					Na
Tl					Tl
V					V
Zn	<u>1.7</u>			<u>8.15</u>	Zn
B					B
Mo					Mo
Si					Si

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".  
 Note: a. The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.



LDC#: 15501A4  
SDG#: JT82

**VALIDATION FINDINGS WORKSHEET**  
**Field Duplicates**

Page: 1 of 1  
Reviewer: mm  
2nd Reviewer: mm

METHOD: Metals (EPA Method 6010B)

N NA Were field duplicate pairs identified in this SDG?  
 N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/kg)		RPD	
	T4-S3-02-K-DUP	T4-S3-02-K		
Lead	16	19	17	
Zinc	67.4	65.8	2	

V:\FIELD DUPLICATES\FD\_inorganic\15501A4.wpd

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** Terminal 4 Early Action  
**Collection Date:** July 18 through July 20, 2006  
**LDC Report Date:** September 29, 2006  
**Matrix:** Sediment  
**Parameters:** Lead & Zinc  
**Validation Level:** EPA Level III  
**Laboratory:** Analytical Resources, Inc.  
**Sample Delivery Group (SDG):** JU43

**Sample Identification**

T4-B414-01-D  
T4-B414-01-F  
T4-B414-01-E  
T4-B414-02-D  
T4-B414-02-E  
T4-B414-02-F  
T4-S3-02-K  
T4-S3-05-K  
T4-S3-04-E  
T4-S3-04-F  
T4-B414-01-DMS  
T4-B414-01-DDUP

## Introduction

This data review covers 12 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Lead and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2002) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. Calibration**

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

## **III. Blanks**

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

## **IV. ICP Interference Check Sample (ICS) Analysis**

The frequency of analysis was met.

The criteria for analysis were met.

## **V. Matrix Spike Analysis**

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

## **VI. Duplicate Sample Analysis**

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

## **VII. Laboratory Control Samples (LCS)**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

## **VIII. Internal Standards (ICP-MS)**

ICP-MS was not utilized in this SDG.

## **IX. Furnace Atomic Absorption QC**

Graphite furnace atomic absorption was not utilized in this SDG.

## X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

## XI. Sample Result Verification

Raw data were not reviewed for this SDG.

## XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

## XIII. Field Duplicates

Samples T4-S3-02-K and T4-S3-02-K-DUP (from SDG JT82) were identified as field duplicates. No lead or zinc was detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)
	T4-S3-02-K-DUP	T4-S3-02-K	
Lead	16	19	17 ( $\leq 75$ )
Zinc	67.4	65.8	2 ( $\leq 75$ )

## XIV. Field Blanks

No field blanks were identified in this SDG.

**Terminal 4 Early Action  
Lead & Zinc - Data Qualification Summary - SDG JU43**

No Sample Data Qualified in this SDG

**Terminal 4 Early Action  
Lead & Zinc - Laboratory Blank Data Qualification Summary - SDG JU43**

No Sample Data Qualified in this SDG



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: T4-B414-01-D  
SAMPLE

Lab Sample ID: JU43A

LIMS ID: 06-15845

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 09/13/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Percent Total Solids: 53.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	09/06/06	6010B	09/12/06	7439-92-1	Lead	4	41	
3050B	09/06/06	6010B	09/12/06	7440-66-6	Zinc	1	175	

U-Analyte undetected at given RL

RL-Reporting Limit

*h 10/2/06*



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: T4-B414-01-F  
SAMPLE

Lab Sample ID: JU43B

LIMS ID: 06-15846

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 09/13/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Percent Total Solids: 58.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	09/06/06	6010B	09/12/06	7439-92-1	Lead	3	171	
3050B	09/06/06	6010B	09/12/06	7440-66-6	Zinc	1	488	

U-Analyte undetected at given RL

RL-Reporting Limit

*09/13/06*

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**  
Page 1 of 1

Sample ID: T4-B414-01-E  
SAMPLE

Lab Sample ID: JU43C

QC Report No: JU43-Anchor Environmental

LIMS ID: 06-15847

Project: T4 EARLY ACTION

Matrix: Sediment

050332-01

Data Release Authorized: *[Signature]*

Date Sampled: 07/20/06

Reported: 09/13/06

Date Received: 07/24/06

Percent Total Solids: 57.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	09/06/06	6010B	09/12/06	7439-92-1	Lead	3	165	
3050B	09/06/06	6010B	09/12/06	7440-66-6	Zinc	1	579	

U-Analyte undetected at given RL

RL-Reporting Limit

*100506*



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: T4-B414-02-D  
SAMPLE

Lab Sample ID: JU43D

LIMS ID: 06-15848

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 09/13/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

050332-01

Date Sampled: 07/19/06

Date Received: 07/24/06

Percent Total Solids: 53.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	09/06/06	6010B	09/12/06	7439-92-1	Lead	4	35	
3050B	09/06/06	6010B	09/12/06	7440-66-6	Zinc	1	152	

U-Analyte undetected at given RL

RL-Reporting Limit

*12/05/04*

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: T4-B414-02-E  
SAMPLE

Lab Sample ID: JU43E

LIMS ID: 06-15849

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 09/13/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

050332-01

Date Sampled: 07/19/06

Date Received: 07/24/06

Percent Total Solids: 56.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	09/06/06	6010B	09/12/06	7439-92-1	Lead	3	32	
3050B	09/06/06	6010B	09/12/06	7440-66-6	Zinc	1	184	

U-Analyte undetected at given RL

RL-Reporting Limit

*7/10/06*

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1

Sample ID: T4-B414-02-F  
SAMPLE

Lab Sample ID: JU43F

LIMS ID: 06-15850

Matrix: Sediment

Data Release Authorized: *MA*

Reported: 09/13/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

050332-01

Date Sampled: 07/19/06

Date Received: 07/24/06

Percent Total Solids: 56.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	09/06/06	6010B	09/12/06	7439-92-1	Lead	3	57	
3050B	09/06/06	6010B	09/12/06	7440-66-6	Zinc	1	342	

U-Analyte undetected at given RL

RL-Reporting Limit

*8/10/06*

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

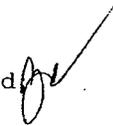
Page 1 of 1

Sample ID: T4-S3-02-K  
SAMPLE

Lab Sample ID: JU43J

LIMS ID: 06-15854

Matrix: Sediment

Data Release Authorized 

Reported: 09/13/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

050332-01

Date Sampled: 07/18/06

Date Received: 07/24/06

Percent Total Solids: 73.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	09/06/06	6010B	09/12/06	7439-92-1	Lead	3	19	
3050B	09/06/06	6010B	09/12/06	7440-66-6	Zinc	0.8	65.8	

U-Analyte undetected at given RL

RL-Reporting Limit

*↑ 00506*

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1

Sample ID: T4-S3-05-K  
SAMPLE

Lab Sample ID: JU43L

LIMS ID: 06-15856

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 09/13/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

050332-01

Date Sampled: 07/19/06

Date Received: 07/24/06

Percent Total Solids: 73.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	09/06/06	6010B	09/12/06	7439-92-1	Lead	3	4	
3050B	09/06/06	6010B	09/12/06	7440-66-6	Zinc	0.8	64.9	

U-Analyte undetected at given RL

RL-Reporting Limit

*C/02504*

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1

Sample ID: T4-S3-04-E  
SAMPLE

Lab Sample ID: JU43N

LIMS ID: 06-15858

Matrix: Sediment

Data Release Authorized: 

Reported: 09/13/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Percent Total Solids: 71.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	09/06/06	6010B	09/12/06	7439-92-1	Lead	3	17	
3050B	09/06/06	6010B	09/12/06	7440-66-6	Zinc	0.8	60.1	

U-Analyte undetected at given RL

RL-Reporting Limit

*Handwritten signature*

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: T4-S3-04-F

SAMPLE

Lab Sample ID: JU430

LIMS ID: 06-15859

Matrix: Sediment

Data Release Authorized *BZ*

Reported: 09/13/06

QC Report No: JU43-Anchor Environmental

Project: T4 EARLY ACTION

050332-01

Date Sampled: 07/20/06

Date Received: 07/24/06

Percent Total Solids: 76.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	09/06/06	6010B	09/12/06	7439-92-1	Lead	2	3	
3050B	09/06/06	6010B	09/12/06	7440-66-6	Zinc	0.7	53.2	

U-Analyte undetected at given RL

RL-Reporting Limit

*2/00506*

**METHOD:** Lead & Zinc (EPA SW 846 Method 6010B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/06 - 7/20/06
II.	Calibration	A	
III.	Blanks	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	A	
VI.	Duplicate Sample Analysis	A	
VII.	Laboratory Control Samples (LCS)	A	Yes
VIII.	Internal Standard (ICP-MS)	N	3 not utilized
IX.	Furnace Atomic Absorption QC	N	
X.	ICP Serial Dilution	N	Not performed.
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	SW	(7, T4-S3-02-K-Rep (SNG JTB))
XIV.	Field Blanks	N	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

Validated Samples: *Schmitt*

1	T4-B414-01-D	11	T4-B414-01-DMS	21		31	
2	T4-B414-01-F	12	T4-B414-01-DDUP	22		32	
3	T4-B414-01-E	13	PB	23		33	
4	T4-B414-02-D	14		24		34	
5	T4-B414-02-E	15		25		35	
6	T4-B414-02-F	16		26		36	
7	T4-S3-02-K	17		27		37	
8	T4-S3-05-K	18		28		38	
9	T4-S3-04-E	19		29		39	
10	T4-S3-04-F	20		30		40	

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



LDC#: 15501B4  
 SDG#: J1143

**VALIDATION FINDINGS WORKSHEET**  
Field Duplicates

Page: ( of )  
 Reviewer: mm  
 2nd Reviewer: R

**METHOD:** Metals (EPA Method 6010B)

- Y N NA Were field duplicate pairs identified in this SDG?
- Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/kg)		(575) RPD	
	T4-S3-02-K-DUP	T4-S3-02-K		
Lead	16	19	17	
Zinc	67.4	65.8	2	

**Terminal 4 Early Action  
Data Validation Reports  
LDC# 15501**

Wet Chemistry

*LDC*

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** Terminal 4 Early Action  
**Collection Date:** July 18 through July 19, 2006  
**LDC Report Date:** September 29, 2006  
**Matrix:** Sediment  
**Parameters:** Wet Chemistry  
**Validation Level:** EPA Level III  
**Laboratory:** Analytical Resources, Inc.  
**Sample Delivery Group (SDG):** JT82

**Sample Identification**

T4-S3-01-J  
T4-S3-01-K  
T4-S3-02-G  
T4-S3-02-J  
T4-S3-02-K-DUP  
T4-S3-03-E  
T4-S3-03-F  
T4-S3-03-G  
T4-S3-02-H  
T4-S3-01-JMS  
T4-S3-01-JDUP  
T4-S3-01-JTRP

## Introduction

This data review covers 12 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 160.3 for Total Solids, Plumb Method for Total Organic Carbon, and ASTM Method D421 for Grain Size.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2002) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. Calibration**

### **a. Initial Calibration**

All criteria for the initial calibration of each method were met.

### **b. Calibration Verification**

Calibration verification frequency and analysis criteria were met for each method when applicable.

## **III. Blanks**

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

## **IV. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

## **V. Duplicates/Triplicates**

Duplicate (DUP) and triplicate (TRP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

## **VI. Laboratory Control Samples**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

Standard reference material (SRM) percent recoveries (%R) were within QC limits.

## **VII. Sample Result Verification**

Raw data were not reviewed for this SDG.

## **VIII. Overall Assessment of Data**

Data flags are summarized at the end of this report if data has been qualified.

## IX. Field Duplicates

Samples T4-S3-02-K-DUP and T4-S3-02-K (from SDG JU43) were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (%)		RPD (Limits)
	T4-S3-02-K-DUP	T4-S3-02-K	
Total solids	80.70	73.20	10 ( $\leq 75$ )
Total organic carbon	0.495	0.980	66 ( $\leq 75$ )

## X. Field Blanks

No field blanks were identified in this SDG.

**Terminal 4 Early Action  
Wet Chemistry - Data Qualification Summary - SDG JT82**

No Sample Data Qualified in this SDG

**Terminal 4 Early Action  
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JT82**

No Sample Data Qualified in this SDG

SAMPLE RESULTS-CONVENTIONALS  
JT82-Anchor Environmental



Matrix: Sediment  
Data Release Authorized  
Reported: 08/28/06

A handwritten signature in black ink, appearing to be 'M' or 'M.', written over the 'Data Release Authorized' text.

Project: T-4 EARLY ACTION  
Event: 050332-01  
Date Sampled: 07/18/06  
Date Received: 07/21/06

Client ID: T4-S3-01-J  
ARI ID: 06-15215 JT82A

Analyte	Date	Method	Units	RL	Sample
Total Solids	08/21/06 082106#1	EPA 160.3	Percent	0.01	64.90
Total Organic Carbon	08/23/06 082306#1	Plumb, 1981	Percent	0.020	1.04

RL Analytical reporting limit  
U Undetected at reported detection limit

↑ 10/27/06

SAMPLE RESULTS-CONVENTIONALS  
JT82-Anchor Environmental



Matrix: Sediment  
Data Release Authorized: *OK*  
Reported: 08/28/06

Project: T-4 EARLY ACTION  
Event: 050332-01  
Date Sampled: 07/18/06  
Date Received: 07/21/06

Client ID: T4-S3-01-K  
ARI ID: 06-15216 JT82B

Analyte	Date	Method	Units	RL	Sample
Total Solids	08/21/06 082106#1	EPA 160.3	Percent	0.01	67.70
Total Organic Carbon	08/24/06 082406#1	Plumb, 1981	Percent	0.020	0.312

RL Analytical reporting limit  
U Undetected at reported detection limit

*C/08/06*

SAMPLE RESULTS-CONVENTIONAL  
JT82-Anchor Environmental



Matrix: Sediment  
Data Release Authorized: *NOV*  
Reported: 08/28/06

Project: T-4 EARLY ACTION  
Event: 050332-01  
Date Sampled: 07/18/06  
Date Received: 07/21/06

Client ID: T4-S3-02-G  
ARI ID: 06-15217 JT82C

Analyte	Date	Method	Units	RL	Sample
Total Solids	08/21/06 082106#1	EPA 160.3	Percent	0.01	61.60
Total Organic Carbon	08/23/06 082306#1	Plumb,1981	Percent	0.020	1.09

RL Analytical reporting limit  
U Undetected at reported detection limit

*10/05/06*

SAMPLE RESULTS-CONVENTIONALS  
JT82-Anchor Environmental



Matrix: Sediment  
Data Release Authorized  
Reported: 08/28/06

A handwritten signature in black ink, appearing to be 'J. [unclear]', written over the 'Data Release Authorized' text.

Project: T-4 EARLY ACTION  
Event: 050332-01  
Date Sampled: 07/18/06  
Date Received: 07/21/06

Client ID: T4-S3-02-J  
ARI ID: 06-15218 JT82D

Analyte	Date	Method	Units	RL	Sample
Total Solids	08/21/06 082106#2	EPA 160.3	Percent	0.01	74.30
Total Organic Carbon	08/23/06 082306#1	Plumb, 1981	Percent	0.020	0.775

RL Analytical reporting limit  
U Undetected at reported detection limit

*8/00/06*

SAMPLE RESULTS-CONVENTIONALS  
JT82-Anchor Environmental



Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 08/28/06

Project: T-4 EARLY ACTION  
Event: 050332-01  
Date Sampled: 07/18/06  
Date Received: 07/21/06

Client ID: T4-S3-02-K-DUP  
ARI ID: 06-15219 JT82E

Analyte	Date	Method	Units	RL	Sample
Total Solids	08/21/06 082106#2	EPA 160.3	Percent	0.01	80.70
Total Organic Carbon	08/23/06 082306#1	Plumb, 1981	Percent	0.020	0.495

RL Analytical reporting limit  
U Undetected at reported detection limit

*8/28/06*

SAMPLE RESULTS-CONVENTIONALS  
JT82-Anchor Environmental



Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 08/28/06

Project: T-4 EARLY ACTION  
Event: 050332-01  
Date Sampled: 07/18/06  
Date Received: 07/21/06

Client ID: T4-S3-02-H  
ARI ID: 06-15223 JT82I

Analyte	Date	Method	Units	RL	Sample
Total Solids	08/21/06 082106#2	EPA 160.3	Percent	0.01	69.10
Total Organic Carbon	08/23/06 082306#1	Plumb, 1981	Percent	0.020	1.46

RL Analytical reporting limit  
U Undetected at reported detection limit

*08/28/06*

Percent Finer (Passing) Than the Indicated Size

Sieve Size (microns)	2"	1"	3/4"	1/2"	3/8"	#4 (4750)	#10 (2000)	#20 (850)	#40 (425)	#60 (250)	#100 (150)	#200 (75)	32	22	13	9	7	3.2	1.3
T4-S3-01-J	100.0	100.0	100.0	100.0	100.0	100.0	99.7	99.3	96.6	89.6	80.3	56.2	39.8	32.5	26.0	21.0	17.3	10.8	8.0
T4-S3-01-J	100.0	100.0	100.0	100.0	100.0	99.6	99.5	99.1	96.5	89.7	80.6	56.6	39.3	31.9	25.9	20.8	17.8	11.1	7.4
T4-S3-01-J	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.5	97.1	89.8	80.4	58.4	39.5	32.4	26.1	21.3	19.0	11.1	7.1
T4-S3-01-K	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.8	99.5	94.8	68.7	41.8	32.4	24.5	19.4	15.1	10.1	7.2
T4-S3-02-G	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	97.2	88.3	83.3	69.0	42.2	34.6	27.7	22.3	16.9	10.8	6.9
T4-S3-02-J	100.0	100.0	100.0	100.0	100.0	98.4	97.5	95.2	70.1	25.3	13.9	9.9	6.5	5.2	3.9	3.0	2.2	1.3	1.3
T4-S3-02-K	100.0	100.0	100.0	100.0	100.0	99.9	99.9	98.1	77.5	42.8	32.5	25.8	18.2	16.1	11.9	9.1	6.3	3.5	2.1
T4-S3-03-E	100.0	100.0	100.0	100.0	100.0	100.0	99.8	96.7	62.8	21.7	13.6	11.5	8.3	7.4	6.1	4.8	3.5	2.2	1.3
T4-S3-03-F	100.0	100.0	100.0	100.0	100.0	100.0	99.7	95.7	65.0	22.6	14.6	12.8	10.2	9.3	7.5	5.8	4.9	2.7	1.8
T4-S3-03-G	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.4	87.6	55.9	45.2	36.6	24.9	23.5	19.9	16.3	12.8	8.5	5.7
T4-S3-02-H	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.4	87.6	55.9	45.2	36.6	24.9	23.5	19.9	16.3	12.8	8.5	5.7

Testing performed according to ASTM D421/D422

*Handwritten signature*

Anchor Environmental  
T-4 Early Action 050332-01

Percent Retained in Each Size Fraction

Description	% Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Very Coarse Silt	% Coarse Silt	% Medium Silt	% Fine Silt	% Fine Silt	% Very Fine Silt	% Clay
Particle Size (microns)	> 4750	4750-2000	2000-425	425-75	75-32	32-22	22-13	13-9	9-7	7-3.2	<3.2
T4-S3-01-J	0.0	0.3	3.1	40.5	16.4	7.2	6.5	5.1	3.6	6.5	10.8
T4-S3-01-J	0.4	0.1	3.0	39.9	17.3	7.4	5.9	5.2	3.0	6.7	11.1
T4-S3-01-J	0.0	0.1	2.8	38.7	18.9	7.1	6.3	4.7	2.4	7.9	11.1
T4-S3-01-K	0.0	0.0	0.2	31.2	26.9	9.4	7.9	5.0	4.3	5.0	10.1
T4-S3-02-G	0.0	0.0	2.8	28.2	26.7	7.7	6.9	5.4	5.4	6.1	10.8
T4-S3-02-J	0.0	0.1	14.8	55.4	10.1	3.5	4.0	1.7	2.9	3.5	4.0
T4-S3-02-K	1.6	0.9	27.4	60.2	3.4	1.3	1.3	0.9	0.9	0.9	1.3
T4-S3-03-E	0.1	0.1	22.3	51.7	7.6	2.1	4.2	2.8	2.8	2.8	3.5
T4-S3-03-F	0.0	0.2	37.1	51.3	3.2	0.9	1.3	1.3	1.3	1.3	2.2
T4-S3-03-G	0.0	0.3	34.8	52.2	2.6	0.9	1.8	1.8	0.9	2.2	2.7
T4-S3-02-H	0.0	0.0	12.3	51.0	11.7	1.4	3.6	3.6	3.6	4.3	8.5

JT82

2 10/20/06

LDC #: 15501A6  
 SDG #: JT82  
 Laboratory: Analytical Resources, Inc.

**VALIDATION COMPLETENESS WORKSHEET**  
 Level III

Date: 9/22/06  
 Page: 1 of 1  
 Reviewer: MN  
 2nd Reviewer: A

**METHOD: (Analyte) Grain Size (ASTM D421), Total Solids (EPA Method 160.3) TOC (Plumb)**

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/06, 7/19/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	
V	Duplicates	A	Triplicates
VI.	Laboratory control samples	A	LES, SRM.
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	(5, T4-S3-02-K (SOY JU 43))
X	Field blanks	N	

Note: A = Acceptable                      ND = No compounds detected                      D = Duplicate  
 N = Not provided/applicable                      R = Rinsate                      TB = Trip blank  
 SW = See worksheet                      FB = Field blank                      EB = Equipment blank

Validated Samples: *Sediment*

1	T4-S3-01-J	11	T4-S3-01-JDUP	21		31	
2	T4-S3-01-K	12	T4-S3-01-JTRP	22		32	
3	T4-S3-02-G	13	MB	23		33	
4	T4-S3-02-J	14		24		34	
5	T4-S3-02-K-DUP	15		25		35	
6	T4-S3-03-E	16		26		36	
7	T4-S3-03-F	17		27		37	
8	T4-S3-03-G	18		28		38	
9	T4-S3-02-H	19		29		39	
10	T4-S3-01-JMS	20		30		40	

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



LDC#: 15501A6  
SDG#: JT82

**VALIDATION FINDINGS WORKSHEET**  
**Field Duplicates**

Page: 1 of 1  
Reviewer: um  
2nd Reviewer: M

Inorganics, Method See lab

- N NA Were field duplicate pairs identified in this SDG?
- N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (%)		(595) RPD	
	T4-S3-02-K-DUP	T4-S3-02-K		
Total Solids	80.70	73.20	10	
TOC	0.495	0.980	66	

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** Terminal 4 Early Action  
**Collection Date:** July 18, 2006  
**LDC Report Date:** September 29, 2006  
**Matrix:** Sediment  
**Parameters:** Wet Chemistry  
**Validation Level:** EPA Level III  
**Laboratory:** Analytical Resources, Inc.  
**Sample Delivery Group (SDG):** JU43

**Sample Identification**

T4-S3-02-K  
T4-S3-02-KDUP  
T4-S3-02-KTRP

## Introduction

This data review covers 3 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 160.3 for Total Solids, and Plumb Method for Total Organic Carbon.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2002) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. Calibration**

### **a. Initial Calibration**

All criteria for the initial calibration of each method were met.

### **b. Calibration Verification**

Calibration verification frequency and analysis criteria were met for each method when applicable.

## **III. Blanks**

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

## **IV. Matrix Spike/Matrix Spike Duplicates**

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

## **V. Duplicates/Triplicates**

Duplicate (DUP) and triplicate (TRP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

## **VI. Laboratory Control Samples**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

Standard reference material (SRM) percent recoveries (%R) were within QC limits.

## **VII. Sample Result Verification**

Raw data were not reviewed for this SDG.

## **VIII. Overall Assessment of Data**

Data flags are summarized at the end of this report if data has been qualified.

## IX. Field Duplicates

Samples T4-S3-02-K-DUP (from SDG JT82) and T4-S3-02-K were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (%)		RPD (Limits)
	T4-S3-02-K-DUP	T4-S3-02-K	
Total solids	80.70	73.20	10 ( $\leq 75$ )
Total organic carbon	0.495	0.980	66 ( $\leq 75$ )

## X. Field Blanks

No field blanks were identified in this SDG.

**Terminal 4 Early Action  
Wet Chemistry - Data Qualification Summary - SDG JU43**

No Sample Data Qualified in this SDG

**Terminal 4 Early Action  
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JU43**

No Sample Data Qualified in this SDG

SAMPLE RESULTS-CONVENTIONALS  
JU43-Anchor Environmental



Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 09/01/06

Project: T4 EARLY ACTION  
Event: 050332-01  
Date Sampled: 07/18/06  
Date Received: 07/24/06

Client ID: T4-S3-02-K  
ARI ID: 06-15854 JU43J

Analyte	Date	Method	Units	RL	Sample
Total Solids	08/29/06 082906#1	EPA 160.3	Percent	0.01	73.20
Total Organic Carbon	08/30/06 083006#1	Plumb, 1981	Percent	0.020	0.980

RL Analytical reporting limit  
U Undetected at reported detection limit

*2/02/06*

LDC #: 15501B6

**VALIDATION COMPLETENESS WORKSHEET**

Date: 9/22/06

SDG #: JU43

Level III

Page: 1 of 1

Laboratory: Analytical Resources, Inc.

Reviewer:                     

2nd Reviewer:                     

**METHOD: (Analyte) Total Solids (EPA Method 160.3) TOC (Plumb)**

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	N	client specified
V	Duplicates	A	Triplicates
VI.	Laboratory control samples	D	LCS, SRM
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	C1, T4-S3-02-K-Dup (SDG JT B2)
X	Field blanks	N	

Note: A = Acceptable  
 N = Not provided/applicable  
 SW = See worksheet

ND = No compounds detected  
 R = Rinsate  
 FB = Field blank

D = Duplicate  
 TB = Trip blank  
 EB = Equipment blank

Validated Samples:

*Sediment*

1	T4-S3-02-K	11		21		31	
2	T4-S3-02-KDUP	12		22		32	
3	↓ TRP	13		23		33	
4	MB	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



LDC#: 15501B6  
SDG#: 8443

**VALIDATION FINDINGS WORKSHEET**  
**Field Duplicates**

Page: 1 of 1  
Reviewer: [Signature]  
2nd Reviewer: [Signature]

Inorganics, Method See com

- ~~Y~~ ~~N~~ ~~NA~~ Were field duplicate pairs identified in this SDG?
- ~~Y~~ ~~N~~ ~~NA~~ Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (%)		RPD	
	T4-S3-02-K-DUP	T4-S3-02-K		
Total Solids	80.70	73.20	10	
TOC	0.495	0.980	66	

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** Terminal 4 Early Action  
**Collection Date:** July 20, 2006  
**LDC Report Date:** September 29, 2006  
**Matrix:** Sediment and Water Composite  
**Parameters:** Wet Chemistry  
**Validation Level:** EPA Level III  
**Laboratory:** Analytical Resources, Inc.

**Sample Delivery Group (SDG):** JU53

**Sample Identification**

T4-COMP2

## Introduction

This data review covers one sediment and water composite sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Army Corps of Engineers Method for Column Setting Test.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2002) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. Calibration**

### **a. Initial Calibration**

All criteria for the initial calibration of each method were met.

### **b. Calibration Verification**

Calibration verification frequency and analysis criteria were met for each method when applicable.

## **III. Blanks**

Method blanks were not required by these methods.

## **IV. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) analyses were not required by these methods.

## **V. Duplicates/Triplicates**

Duplicate (DUP) and triplicate (TRP) sample analyses were not required by these methods.

## **VI. Laboratory Control Samples**

Laboratory control samples were not required by these methods.

## **VII. Sample Result Verification**

Raw data were not reviewed for this SDG.

## **VIII. Overall Assessment of Data**

Data flags are summarized at the end of this report if data has been qualified.

## **IX. Field Duplicates**

No field duplicates were identified in this SDG.

## **X. Field Blanks**

No field blanks were identified in this SDG.

**Terminal 4 Early Action  
Wet Chemistry - Data Qualification Summary - SDG JU53**

No Sample Data Qualified in this SDG

**Terminal 4 Early Action  
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JU53**

No Sample Data Qualified in this SDG

Column Settling Test

Sample ID: 0.0

**Turbidity Over Time and Depth**

Depth from Top of Settling Column (ft)

	0.4	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	5.4	5.9
Time	Port F	Port G	Port H	Port I	Port J	Port K	Port L	Port M	Port N	Port P	Port Q
1	11200.0	11000.0	11300.0	11400.0	12200.0	10800.0	11600.0				
2	9600.0	9600.0	9800.0	10600.0	9600.0	9900.0	9500.0	9600.0			
4	8250.0	8400.0	8100.0	8450.0	8400.0	8150.0	7950.0	8200.0	8050.0		
6	7200.0	8350.0	8300.0	7700.0	7900.0	7550.0	7750.0	7650.0	7700.0		
8		7300.0	7300.0	7050.0	7200.0	7150.0	7300.0	7400.0	7400.0		
11		6750.0	6800.0	6800.0	6700.0	6750.0	6900.0	6850.0	6750.0	12000.0	
24		5500.0	5900.0	5850.0	6250.0	5850.0	5800.0	5750.0	6050.0	6050.0	
48		4360.0	5160.0	5120.0	6000.0	4920.0	4880.0	4960.0	5200.0	4920.0	
96.5			3200.0	3440.0	3660.0	3520.0	3580.0	3560.0	3620.0	3560.0	
168			2040.0	2400.0	2600.0	2740.0	2720.0	2780.0	2820.0	3040.0	
265			620.0	1600.0	1880.0	2000.0	2100.0	2160.0	2200.0	2280.0	

JU53

*2/00576*

Column Settling Test

T4-Comp-2

Sample ID:

Initial mix:

Water volume, liters: 85  
 Sediment mass, grams, dry weight basis: 16,862  
 Initial mix ratio, g/L: 198.4  
 Initial measured TSS, in column: 124.8

Sediment Moisture Content, % of dry weight:

71.6

Percent of Initial TSS Concentration over Time

Time	Depth from Top of Settling Column (ft)																						
	0.42	0.92	1.42	1.92	2.42	2.92	3.42	3.92	4.42	5.42	5.92	Port F	Port G	Port H	Port I	Port J	Port K	Port L	Port M	Port N	Port P	Port Q	
1	15.8	16.5	19.3	18.7	25.2	17.6	21.5																
2	11.9	12.9	13.9	13.4	13.7	13.7	13.6	14.0															
4	11.1	12.1	10.9	11.9	10.9	11.0	11.1	11.0	11.0														
6	8.1	12.6	12.1	10.0	9.8	10.3	10.2	10.1	9.5														
8		8.9	9.0	8.7	9.6	9.0	9.3	9.2	9.0														
11		8.1	7.9	8.3	8.3	8.1	8.3	7.0	8.2	23.5													
24		6.2	7.0	5.9	7.4	6.9	6.3	5.9	6.1	6.9													
48		3.8	5.1	5.6	6.7	5.1	4.7	5.1	5.7	4.8													
96.5			2.4	2.9	3.5	3.2	3.0	2.6	3.0	3.3													
168			1.5	1.5	1.4	1.9	1.7	1.9	1.8	2.3													
265			0.1	0.5	0.7	1.2	1.3	0.9	1.0	1.4													

JU53



↑ 100-06

**METHOD: (Analyte)** Column Setting Test (ACOE)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/20/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	N	} not required
V	Duplicates	N	
VI.	Laboratory control samples	N	
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	N	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

Validated Samples: *sediment + water*

1	T4-COMP2	11		21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Terminal 4 Early Action  
Data Validation Reports  
LDC# 15501**

**Diesel Range Organics & Motor Oil Range Organics**

**LDC**

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** Terminal 4 Early Action  
**Collection Date:** July 18, 2006  
**LDC Report Date:** September 29, 2006  
**Matrix:** Sediment  
**Parameters:** Diesel Range Organics & Motor Oil Range Organics  
**Validation Level:** EPA Level III  
**Laboratory:** Analytical Resources, Inc.  
**Sample Delivery Group (SDG):** JU43

**Sample Identification**

T4-S3-02-K  
T4-S3-02-KMS  
T4-S3-02-KMSD

## Introduction

This data review covers 3 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method NWTPH-Dx for Diesel Range Organics and Motor Oil Range Organics.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. Calibration**

### **a. Initial Calibration**

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than 20.0% .

### **b. Calibration Verification**

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

## **III. Blanks**

Method blanks were reviewed for each matrix as applicable. No diesel range organic or motor oil range organic contaminants were found in the method blanks.

## **IV. Accuracy and Precision Data**

### **a. Surrogate Recovery**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

### **b. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

### **c. Laboratory Control Samples**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

## V. Target Compound Identification

Raw data were not reviewed for this SDG.

## VI. Compound Quantitation and CRQLs

The QAPP reporting limits were met with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All samples in SDG JU43	Diesel range organics	Laboratory reporting limit reported at 5.0 mg/Kg.	Reporting limit should be reported at 0.25 mg/Kg per the QAPP.	None	P
All samples in SDG JU43	Motor oil range organics	Laboratory reporting limit reported at 10 mg/Kg.	Reporting limit should be reported at 0.5 mg/Kg per the QAPP.	None	P

Raw data were not reviewed for this SDG.

## VII. System Performance

Raw data were not reviewed for this SDG.

## VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report if data has been qualified.

## IX. Field Duplicates

No field duplicates were identified in this SDG.

## X. Field Blanks

No field blanks were identified in this SDG.

**Terminal 4 Early Action  
 Diesel Range Organics & Motor Oil Range Organics - Data Qualification Summary -  
 SDG JU43**

SDG	Sample	Compound	Flag	A or P	Reason
JU43	T4-S3-02-K	Diesel range organics Motor oil range organics	None None	P	Compound quantitation and CRQLs

**Terminal 4 Early Action  
 Diesel Range Organics & Motor Oil Range Organics - Laboratory Blank Data  
 Qualification Summary - SDG JU43**

No Sample Data Qualified in this SDG



ORGANICS ANALYSIS DATA SHEET  
TOTAL DIESEL RANGE HYDROCARBONS  
NWTPHD by GC/FID  
Page 1 of 1  
Matrix: Sediment

QC Report No: JU43-Anchor Environmental  
Project: T4 EARLY ACTION  
050332-01  
Date Received: 07/24/06

Data Release Authorized: *[Signature]*  
Reported: 09/08/06

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-090606 06-15854	Method Blank HC ID: ---	09/06/06	09/07/06 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 5.0 U < 10 U 64.4%
JU43J 06-15854	T4-S3-02-K HC ID: DRO/RRO	09/06/06	09/07/06 FID3A	1.0	Diesel Motor Oil o-Terphenyl	7.8 14 66.0%

Reported in mg/kg (ppm)

Diesel quantitation on total peaks in the range from C12 to C24.  
Motor Oil quantitation on total peaks in the range from C24 to C38.  
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

*Handwritten signature/initials*

LDC #: 15501B8

**VALIDATION COMPLETENESS WORKSHEET**

SDG #: JU43

Level III

Laboratory: Analytical Resources, Inc.

Date: 7/18/06

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

**METHOD:** GC Diesel Range Organics (NWTPH-Dx) / MRO

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/06
IIa.	Initial calibration	A	
IIb.	Calibration verification <i>rev</i>	A	
III.	Blanks	A	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	A	
IVc.	Laboratory control samples	A	<i>LCG</i>
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	<del>S</del> N	
VII.	System Performance	N	
VIII.	Overall assessment of data	<del>A</del>	
IX.	Field duplicates	N	
X.	Field blanks	N	

Note: A = Acceptable  
 N = Not provided/applicable  
 SW = See worksheet

ND = No compounds detected  
 R = Rinsate  
 FB = Field blank

D = Duplicate  
 TB = Trip blank  
 EB = Equipment blank

Validated Samples:

1	T4-S3-02-K <i>sed</i>	11	<i>MB-090606</i>	21		31	
2	T4-S3-02-KMS	12		22		32	
3	T4-S3-02-KMSD	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

