

Section I: Sample Inventory Report

Date Received:

4/12/2005

Alta Lab. ID

Client Sample ID

26036-001

IOD0649-01



SECTION II



Method Blank	A CONTRACTOR OF THE PROPERTY O				EP.	EPA Method 1613
Matrix: Aqueous		QC Batch No.:	6707	Lab Sample: 0-MB001		The state of the s
Sample Size: 1.000 L		Date Extracted:	16-Apr-05	Date Analyzed DB-5: 17-Apr-05	Date Analyzed DB-225:	B-225: NA
Analyte Conc. (Ug/L)	ýL)	DL a EMPC b	b Qualifiers	Labeled Standard	%R LCL-UCL ^d	CL ^d Qualifiers
2,3,7,8-TCDD N	2	0.00000119		<u>IS</u> 13C-2,3,7,8-TCDD	68.7 25	25 - 164
1,2,3,7,8-PeCDD N	N ON	0.000000085		13C-1,2,3,7,8-PeCDD	77.0 25	25 - 181
	ND	0.00000193		13C-1,2,3,4,7,8-HxCDD	71.6 32	32 - 141
	S	0.00000188		13C-1,2,3,6,7,8-HxCDD	77.9 28	28 - 130
1,2,3,7,8,9-H _x CDD	Q.	0.00000190		13C-1,2,3,4,6,7,8-HpCDD	65.3 23	23 - 140
1,2,3,4,6,7,8-HpCDD N	S	0.00000164		13C-0CDD	42.9	17 - 157
OCDD	QN QN	0.00000457		13C-2,3,7,8-TCDF		24 - 169
2,3,7,8-TCDF	S	0.00000111		13C-1,2,3,7,8-PeCDF	69.4 24	24 - 185
	Q	0.00000188		13C-2,3,4,7,8-PeCDF	73.5	21 - 178
2,3,4,7,8-PeCDF	Q C	0.00000164		13C-1,2,3,4,7,8-HxCDF	70.4 26	26 - 152
1,2,3,4,7,8-HxCDF N	Ð	0.000000618		13C-1,2,3,6,7,8-HxCDF	81.4 26	26 - 123
	S	0.000000620		13C-2,3,4,6,7,8-HxCDF	75.6 28	28 - 136
	ON	0.000000756		13C-1,2,3,7,8,9-HxCDF	73.0 29	29 - 147
	QN	0.00000127		13C-1,2,3,4,6,7,8-HpCDF	70.1 28	28 - 143
1,2,3,4,6,7,8-HpCDF N	Q	0.00000100		13C-1,2,3,4,7,8,9-HpCDF	58.9 26	26 - 138
1,2,3,4,7,8,9-HpCDF N	NO	0,00000151		13C-OCDF	49.3	17 - 157
OCDF	QN	0.00000490		CRS 37CI-2,3,7,8-TCDD	83.2 35	- 197
Totals			,	Footnotes		
Total TCDD	Ð	0.00000119				
Total PeCDD N	S S	0.000000085				
Total HxCDD N	S	0.00000190		a. Sample specific estimated detection limit.		ta t
Total HpCDD N	Q N	0.00000164		b. Estimated maximum possible concentration.		
Total TCDF	S	0.00000111		c. Method detection limit.		
Total PeCDF N	QN	0.00000176		d. Lower control limit - upper control limit.		
Total HxCDF N	QN QN	0.000000785				PROPERTY
Total HpCDF	ND	0.00000121				
	!			AND THE RESERVE OF THE PROPERTY OF THE PROPERT		The formal professional profess

JMH Analyst:

Approved By:

Martha M. Maier 19-Apr-2005 13:04



OPR Results			And the state of t	AND THE RESIDENCE OF THE PROPERTY OF THE PROPE	EPA	EPA Method 1613
Matrix: Aqueous		QC Batch No.:	6707	Lab Sample: 0-OPR001	Mary actions and the second se	Additional in the control of the con
Sample Size: 1.000 L		Date Extracted:	16-Apr-05	Date Analyzed DB-5: 17-Apr-05	Date Analyzed DB-225;	d DB-225: NA
Analyte	Spike Conc.	Spike Conc. Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	TCT-nCT
2,3,7,8-TCDD	10.0	9.00	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	67.4	25 - 164
1,2,3,7,8-PeCDD	50.0	45.9	35-71	13C-1,2,3,7,8-PeCDD	70.6	25 - 181
1,2,3,4,7,8-HxCDD	50.0	46.6	35 - 82	13C-1,2,3,4,7,8-HxCDD	73.8	32 - 141
1,2,3,6,7,8-HxCDD	50.0	46.6	38 - 67	13C-1,2,3,6,7,8-HxCDD	84.1	28 - 130
1,2,3,7,8,9-HxCDD	50.0	43.6	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	63.6	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	48.9	35 - 70	13C-0CDD	46.9	17 - 157
OCDD	100	98.2	78 - 144	13C-2,3,7,8-TCDF	6.69	24 - 169
2,3,7,8-TCDF	10.0	90.6	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	689	24 - 185
1,2,3,7,8-PeCDF	50.0	47.8	40 - 67	13C-2,3,4,7,8-PeCDF	71.3	21 - 178
2,3,4,7,8-PeCDF	50.0	46.9	34 - 80	13C-1,2,3,4,7,8-HxCDF	77.5	26 - 152
1,2,3,4,7,8-HxCDF	50.0	51.7	36 - 67	13C-1,2,3,6,7,8-HxCDF	89.9	26 - 123
1,2,3,6,7,8-HxCDF	50.0	48.8	42 - 65	13C-2,3,4,6,7,8-HxCDF	78.6	28 - 136
2,3,4,6,7,8-HxCDF	50.0	51.4	35 - 78	13C-1,2,3,7,8,9-HxCDF	68.7	29 - 147
1,2,3,7,8,9-HxCDF	50.0	51.5	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	63.2	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	50.8	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	0.99	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	53.6	39 - 69	13C-OCDF	55.0	17 - 157
OCDF	100	103	. 63 - 170	CRS 37CI-2,3,7,8-TCDD	81.7	35 - 197

Analyst: JMH

Approved By:

Martha M. Maier 18-Apr-2005 16:28



Sample ID:	IOD0649-01					***************************************	EPA	EPA Method 1613
Client Data		**************************************	Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine		Matrix:	Aqueous	Lab Sample: 26036-001	-001	Date Received:	12-Apr-05
Date Collected:	9-Apr-05		Sample Size:	1.008 L			Date Extracted:	16-Apr-05
Time Collected:	0945				Date Analyzed DB-5: 18-Apr-05	r-05	Date Analyzed DB-225: NA	-225: NA
Analyte	Conc. (Ug/L)	DF ^a	EMPCb	Qualifiers	Labeled Standard		%R LCL-UCL ^d	l Oualifiers
2,3,7,8-TCDD	QN	0.00000179	79		IS 13C-2,3,7,8-TCDD	THE PROPERTY OF THE PROPERTY O	49.4 25 - 164	THE
1,2,3,7,8-PeCDD	QN	0.00000171	7.1		13C-1,2,3,7,8-PeCDID		46.0 25 - 181	
1,2,3,4,7,8-HxCDD	QN QC	0.00000326	26		13C-1,2,3,4,7,8-HxCDD		46.9 32 - 141	•
1,2,3,6,7,8-HxCDD	ON OC	0.00000333	33		13C-1,2,3,6,7,8-HxCDD		52.3 28 - 130	
1,2,3,7,8,9-HxCDD	ON OC	0.00000328	28		13C-1,2,3,4,6,7,8-HpCDD	_	35.9 23 - 140	
11,2,3,4,6,7,8-HpCDD	CDD ND	0.00000581	81		13C-OCDD		28.5 17 - 157	
OCDD	0.0000263			- -,	13C-2,3,7,8-TCDF		52.6 24 - 169	
2,3,7,8-TCDF	S	0.00000134	34		13C-1,2,3,7,8-PeCDF		45.3 24 - 185	
1,2,3,7,8-PeCDF	QN	0.00000338	38		13C-2,3,4,7,8-PeCDF			
2,3,4,7,8-PeCDF	SN	0.00000303	03		13C-1,2,3,4,7,8-HxCDF		48.8 26 - 152	
1,2,3,4,7,8-HxCDF	OF ND	0.000000966	996		13C-1,2,3,6,7,8-HxCDF		54.2 26 - 123	
1,2,3,6,7,8-HxCDF	OF ND	0.000000932	932		13C-2,3,4,6,7,8-HxCDF		50.4 28 - 136	•
2,3,4,6,7,8-HxCDF	JF ND	0.00000113	13		13C-1,2,3,7,8,9-HxCDF		39.4 29 - 147	***************************************
1,2,3,7,8,9-HxCDF	JF ND	0.00000234	34		13C-1,2,3,4,6,7,8-HpCDF		36.0 28 - 143	
1,2,3,4,6,7,8-HpCDF	CDF ND	0.00000260	09		13C-1,2,3,4,7,8,9-HpCDF		37.8 26-138	
1,2,3,4,7,8,9-HpCDF	OF NO	0.00000309	60		13C-OCDF		32.7 17-157	~.
OCDF	QN	0.00000526	26		CRS 37CI-2,3,7,8-TCDD		78.5 35 - 197	
Totals		-			Footnotes		· · · · · · · · · · · · · · · · · · ·	,
Total TCDD	Q	0.00000179	61					
Total PeCDD	QN.	0.00000171	7					
Total HxCDD	ON	0.00000329	29		a. Sample specific estimated detection limit.	imit.		
Total HpCDD	QN	0.00000581	8		b. Estimated maximum possible concentration.	tration.		***************************************
Total TCDF	QN	0.00000134	34		c. Method detection limit.			
Total PeCDF	N	0.00000320	20		d. Lower control limit - upper control limit.	mit		**********
Total HxCDF	S	0.00000123	23					÷
Total HpCDF	QN	0.00000282	82					
							William The Commence of the Co	

Analyst: JMH

Approved By:

y: Martha M. Maier 19-Apr-2005 13:04



APPENDIX



DATA QUALIFIERS & ABBREVIATIONS

В	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
Н	The signal-to-noise ratio is greater than 10:1.
I	Chemical Interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
P	Homologue totals include any coplanar PCBs detected at concentrations less than the reporting limit.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated detection limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit - concentrations that correspond to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

The control limits are "interim limits only" until in-house limits are utilized.

CURRENT CERTIFICATIONS



NELAP — (Primary AA: California, Certificate No. 02102CA)

Department of the Navy

U.S. Army Corps of Engineers

U.S. EPA Region 5

Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)

Commonwealth of Kentucky — (Certificate No. 90063)

Commonwealth of Virginia — (Certificate No. 00013)

State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)

State of Arizona — (Certificate No. AZ0639)

State of Arkansas, Department of Health — (Approval granted through CA certification)

State of Arkansas, Department of Environmental Quality

State of California — (Certificate No. 1640)

State of Colorado

State of Connecticut — (Certificate No. PH-0182)

State of Florida — (Certificate No. 87456)

State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)

State of Louisiana, Department of Environmental Quality

State of Maine

State of Michigan (Certificate No. 81178087)

State of Mississippi — (Approval granted through CA certification)

State of Nevada — (Certificate No. CA413)

State of New Jersey — (Certificate No. CA003)

State of New York, Department of Health — (Certificate No. 11411)

State of North Carolina — (Certification No. 06700)

State of North Dakota, Department of Health — (Certificate No. R-078)

State of New Mexico

State of Oklahoma - (D9919)

State of Oregon - (Certificate No. CA413)

State of Pennsylvania — (Certificate No. 68-490)

State of South Carolina — (Certificate No. 87002001)

State of Tennessee — (Certificate No. 02996)

State of Texas — (Certificate No. TX247-1000A

State of Utah - (Certificate No. E-201)

State of Washington - (Certification No. C091)

State of Wisconsin — (Certificate No. 998036160)

State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)



17461 Derian Ave. Suite 100, Irvine, CA 92614 1014 E. Cooley Dr., Suite A. Colton, CA 92324

9464 Chesaponke Drive, Suite 805, San Diago, CA 92123 9830 South 51st Street, State 9-120, Phoenix, AZ 85044

Ph (702) 796-3520

Ph (909) 370-4667

Ph (619) 505-9596

Ph (949) 261-1022 Fax (949) 261-1228 Fax (909) 370-1046 Fax (619) 505-9689

Ph (480) 785-0043 Fax (480) 785-0851 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IOD0649

Del Mar Analytical 17461 Derian Aver Irvine, CA 92614 Phone: (949) 261-1 Fax: (949) 261-122 Project Manager: M	022 8	RECEIVING LAB Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 673-0106	O.1°C
Standard TAT is r Analysis	equested unless specific due date is request Expiration	ted => Due Date: Comments	Initials:
Sample ID: IOD0649 1613-Dioxin-HR	04/16/05 09:45	Instant Nofication J flags, 17 congeners, no TEQ, sub to Alta	
Containers Supplied 1 L Amber (IOD064 1 L Amber (IOD064	9-01G)		

				SAMPL	E INTEGRI	TY:		**************************************
All containers intact: Custody Seals Present:			-	ple labels/COC agree: ples Preserved Properly	☐ Yes	□ № □ №	Samples Received On Ice:: Samples Received at (temp):	☐ Yes ☐ No
M		2	_4-11-05	1700	Pottens		Remedical History	0915
Released By			Date	Time	Received B	y	/ Date	Time
Released By	 ***************************************	······································	Date	Time	Received B	У	Date	Time

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 26036

1.	Date Samples Arrived: 04/10/5 Unitials: Location Location	on: W	R-2	7
2.	Time / Date logged in: 1640 4/12/05 Initials: 1888 Location	on: U	JR-	-2
3.	Samples Arrived By: (circle) FedEx UPS World Courler Other:			
4,	Shipping Preservation: (circle) Ice Blue Ice Dry Ice / None Temp °C	<u> </u>	•	
		YES_	NO	NA
5.	Shipping Container(s) Intact"? If not, describe condition in comment section.	V		
6.	Shipping Container(s) Custody Seals Present?	V	,	
	Intact? If not intact, describe condition in comment section.	V	/	
7.	Shipping Documentation Present? (circle) Shipping Label Airbill Tracking Number 79097741 9517	V		
8.	Sample Custody Seel(s) Present? No. of Seels or Seal No.		1	
	Intact? If not intact, describe condition in comment section.			V
9.	Sample Container intact? If no, indicate sample condition in comment section.	V		
10.	Chain of Custody (COC) or other Sample Documentation Present?	/	,	
11.	COC/Documentation Acceptable? If no, complete COC Anomaly Form.	/		<u> </u>
12.	Shipping Container (circle): ALTA (Client Retain or Return or Di	sposed		
13.	Container(s) and/or Bottle(s) Requested?		V	
14.	Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			1

Comments:

Sampler 's initial found on sample labels

ALTA Analytical Laboratory El Dorado Hills, CA 95762



[17461 Denan Ave. Suite 100, Irvins, CA \$2614 Ph (943) 201-1022 Fax (869) 201-1225 1014 E. Cooley Dr., Suite A. Cohen, CA 92824 Ph (909) 370-4667 Fox (909) 370-1048 9484 Chadopeske Orive, Suite 805, San Diogo, CA 92123 Ph (618) 505-9596 Fax (619) 505-9699

5850 South Stat Speed, Suite B-120, Phoenox, AZ #5044 Ph (450) 785-0043 Pax (480) 785-0851 2520 E. Sureel, Rd., Sune NJ, Low Verser, NV 80120 Ph (792) 798-3620 Past (702) 786-3821

<u> </u>	DER - PROJECT # IOD0649
G LABORATORY: 100	RECEIVING LABORATORY: Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 673-0106
unless specific due date is requeste Expiration	ed => Due Date: Initials: Comments
Sampled: 04/09/05 09:45 04/16/05 09:45 05/07/05 09:45	Instant Nofication I flags, 17 congeners, no TEQ, sub to Alta Excel EDD email to pur, include Std logs for Lvl IV
	arper Innless specific due date is request Expiration ter Sampled: 04/09/05 09:45 04/16/05 09:45 05/07/05 09:45

All containers intact:		Yes Yes	00	No No	Sample labels/COC agree: Samples Preserved Properly:		GRI Yes Yes	TX:		Samples Received On Acon Samples Received at (temp):	∐ Yes	O No
Rolessed By	7/	2	> 		4/12/65 Date Time	Recei	ved B	7		Date	1	ime
Released By			<u> </u>		Date Time	Rece	ved B	y !	4 42	Date		Page 1 of 1

Project 26036 NO. 933

DEL MAR ANALYTICAL

W487:01 5007 Page 121 of 228

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA AMEC Earth & Environmental Package ID T711DF42 550 South Wadsworth Boulevard Task Order 313150010 Suite 500 SDG No. Multiple Lakewood, CO 80226 No. of Analyses Laboratory Alta Date: May 4, 2005 Reviewer H. Chang Reviewer's Signature Analysis/Method Dioxin&Furans/1613 **ACTION ITEMS**^a 1. Case Narrative **Deficiencies** 2. Out of Scope Analyses **Analyses Not Conducted** Missing Hardcopy **Deliverables** Incorrect Hardcopy **Deliverables** 6. Deviations from Analysis Detects below the calibration range were qualified "J." Protocol, e.g., EMPCs were qualified "UJ." **Holding Times** GC/MS Tune/Inst. Perform Calibrations Blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance COMMENTS^b ^a Subcontracted analytical laboratory is not meeting contract and/or method requirements.

b Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
D J	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
Н	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
С	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
В	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
Е	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
* #	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: IOD0069, IOD0114, IOD0649

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

SDG No.: Analysis:

NPDES Multiple D/F

1. INTRODUCTION

Task Order Title:

NPDES Monitoring

Contract Task Order #:

313150010

Sample Delivery Group #:

Multiple

Project Manager:

B. McIlvaine

Matrix:

Water

Analysis:

Dioxins/Furans

QC Level:

Level IV

No. of Samples:

0

3

No. of Reanalyses/Dilutions: Reviewer:

H. Chang

Date of Review:

May 4, 2005

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The samples listed in Table 1 were validated based on the guidelines outlined in the AMEC Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 1), EPA Method 1613, and the National National Functional Guidelines For Chlorinated Dioxin/Furan Data Review (8/02). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Project: SDG No.: Analysis:

NPDES Multiple D/F

DATA VALIDATION REPORT

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 002	IOD0069-01	26003-001	water	1613
Outfall 001	IOD0114-01	26004-001	water	1613
Outfall 001	IOD0649-01	26036-001	water	1613

Project: SDG No.: Analysis:

NPDES Multiple D/F

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All of the samples in these SDGs were received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The samples were shipped to Alta for dioxin/furan analyses and were received below the temperature limits of 4°C ±2°C at 0.1°C and 1°C; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheets, all samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analyses presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The coolers received by Alta had custody seals present and intact; however, custody seals were not present on the sample containers. The EPA IDs were added to the sample result summaries by the reviewer. No qualifications were required.

2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

SDG No.: Analysis:

NPDES Multiple D/F

2.3 CALIBRATION

2.3.1 Initial Calibration

There was one initial calibration, analyzed 08/30/04. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs ≤20% for the 16 native compounds (calibration by isotope dilution) and ≤35% for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standards instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

2.4 BLANKS

One method blank (6707-MB001) was extracted and analyzed with the samples in these SDGs. There were no target compound detects reported in the method blank. A review of the method blank raw data and chromatograms indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One Ongoing Precision Recovery (OPR) sample (6707-OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

SDG No.: Analysis:

NPDES Multiple D/F

2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

2.7.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any reported EMPC was qualified as an estimated nondetect, "UJ." Any detects below the lower method calibration level (MCL) were qualified as estimated, "J." The results and reporting limits were reported in ug/L. No further qualifications were required.



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	Sample ID:	10-6900GOI	Outfall	ુ ક				FDA Mothod 1612
	Clent Date	The state of the s	·		Sample Data		Laboratory Data	
	Project	Del Mar Analytical, Irvine (OD0069	ıl, Irvine		Matrix:	Aqueous	Lab Sample: 26003-001	Date Received:
+ + -	Date Collected:	1-Apr-05		**************************************	Sample Size:	T9101		Date Extracted: 16Anr-05
,,-	L	0920	- Andrews - Andr				Date Analyzed DB-5: 18-Apr-05	ed DB-225:
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ے خ	2,3,7,8-TCDF	S	0	0.00000191		>	13C-2,3,7,8-1CDF	
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n ne finer nane	1,2,3,4,6,7,8-HpCDF	<u> </u>		0.0000000			13C-1,2,3,4,6,7,8-HpCDF	33.1 28 - 143
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		Project	10D0114	icar, trying		Matrix:	Aqueous	Lab Sample: 26004-001	Date Received:	5. Amr 05
		Date Collected:	2-Apr-05 0846			Sample Size:	J.018 L			16-Apr-05
)	Code	Analyte	one.	(Ug/L)	Di a	СМОСЬ	, , ,	Date Analyzed DB-5: 18-Apr-05	Date Analyzed DB-225: NA	225: NA
-						ENT	Qualifiers	Labeled Standard	%R LCL-UCLd	Onalifiers
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		1,2,3,4,6,7,8-HpCDD		£	0.00000314	, -	***************************************	13C-1,2,3,4,6,7,8-HpCDD	47.8 23 - 140	
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	de la la questa de la constante de la constant	1,2,3,4,7,8-HxCDF	ž	? S	0.00000212	9	****	13C-1,2,3,4,7,8-HxCDF	61.6 26 - 152	
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Analyst: JMH

Approved By:

Martha M. Maier 18-Apr-2005 16:20

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	Project	1OD0649		Matrix.	Aqueous	Lab Sample: 26036-001	Date Received: 12. Avr. 05	-03
	Date Collected:	9-Apr-05 0945		Sample Size:	1.008 L	_	Date Extracted: 16-Apr-05	1-05
Alex Dual	Analyte				With Address of the Control of the C	Date Analyzed DB-5: 18-Apr-05	Date Analyzed DB-225: NA	***********
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	1,2,3,6,7,8-HxCDD		0.00000333	33		13C-1,2,3,4,7,8-HxCDD	46.9 32 - 141	· · · · · · · · · · · · · · · · · · ·
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	1.2.3.7.8-PeCDF		0.000003	† G		13C-1,2,3,7,8-PeCDF	45.3 24 - 185	
	2.3.4.7.8-PeCDF		0.0000038	28		13C-2,3,4,7,8-PeCDF	46.4 21 - 178	
	1.2.3.4.7.8-HxCDF		0.00000303	33		13C-1,2,3,4,7,8-HxCDF	48.8 26 - 152	
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	234678-HyCDE		0.000000	152	•	13C-2,3,4,6,7,8-HxCDF	50.4 28 - 136	
	1.2.3.7.8.9-HyCDF		0.000001	<u> </u>		13C-1,2,3,7,8,9-HxCDF	39.4 29-147	***************************************
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Santa a santa and	Total PeCDD	ON ON	0.00000171	<b>,</b>	**********			****
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Analys: JMH

Approved By:

Martha M. Maier 19-Apr-2005 13:04

AMEC VALIDATED

# CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA AMEC Earth & Environmental Package ID T711VO99 550 South Wadsworth Boulevard Task Order 313150010 Suite 500 SDG No. IOD0609 Lakewood, CO 80226 No. of Analyses 2 Laboratory Del Mar Date: May 11, 2005 Reviewer M. Pokorny Reviewer's Signature Analysis/Method Volatiles

1.	Case Narrative		
••	Deficiencies		
2.	Out of Scope		
	Analyses		
	•		
3.	Analyses Not Conducted		***************************************
4.	Missing Hardcopy		
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5.	Incorrect Hardcopy		
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6.	Deviations from Analysis		
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	Blanks		7
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VX	MENTS'	Acceptable as reviewed.	
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		meeting contract and/or method requirements.	



# DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOD0609

Prepared by

AMEC Denver Operations 550 South Wadsworth Boulevard, Suite 500 Lakewood, Colorado 80226

Analysis:

**NPDES** 

VOC

IOD0609

### 1. INTRODUCTION

Task Order Title:

NPDES Monitoring

Contract Task Order #:

313150010

SDG#:

IOD0609

Project Manager:

B. McIlvaine

Matrix:

Water

Analysis:

Volatiles

QC Level:

Level IV

No. of Samples:

2 0

No. of Reanalyses/Dilutions:

Reviewer:

M. Pokorny

Date of Review:

May 11, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2), EPA Method 624, EPA SW-846 Method 8260B, and the National Functional Guidelines For Organic Data Review (2/94). Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Project: SDG: Analysis: NPDES IOD0609 VOC

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 002	Outfall 002	IOD0609-01	water	624
Trip Blank	Trip Blank	IOD0609-02	water	624

## 2. DATA VALIDATION FINDINGS

## 2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

# 2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at the laboratory above the temperature limits of 4°C ±2°C at 7°C; however, as the samples were transported directly from the field to the laboratory, insufficient time had elapsed to allow the samples to cool below 6°C, and the sample receipt temperature was considered acceptable. The COC noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

### 2.1.2 Chain of Custody

The COC was signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in this SDG. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

### 2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

### 2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation reports were consistent with those specified in EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

### 2.3 CALIBRATION

One initial calibration, dated 03/04/05, was associated with this SDG. The average RRFs were  $\geq \! 0.05$  for all compounds listed on the sample result summaries. The %RSDs were  $\leq \! 35\%$  for the target compounds. One continuing calibrations associated with the sample analyses was analyzed 04/11/05. The RRFs were  $\ge 0.05$  in the continuing calibration. The %Ds for the continuing calibrations associated with the site sample were all ≤20%. A representative number of %RSDs and average RRFs from the initial calibrations, and %Ds and RRFs from the continuing calibrations were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

**NPDES** 

VOC

IOD0609

### 2.4 BLANKS

DATA VALIDATION REPORT

One water method blank (5D11027-BLK1) was associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

# 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water blank spike (5D11027-BS1) was associated with the sample analyses. recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

## 2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

### 2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Sample Outfall 002 was the MS/MSD analyzed with this SDG. All percent recoveries and RPDs were within the QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

### 2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site sample. Following are findings associated with field QC samples:

### 2.8.1 Trip Blanks

Sample Trip Blank (IOD0609-02) was the trip blank associated with this SDG. No target compounds were reported in the Trip Blank. No qualifications were required.

### 2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

### 2.8.3 Field Duplicates

There were no field duplicate samples associated with this SDG.

IOD0609 VOC

### 2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in this SDG were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ±0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

# 2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in µg/L (ppb). No calculation or transcription errors were noted. No qualifications were required.

## 2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for this SDG. No qualifications were required.

### 2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.

17461Derian Ave., Suite 100, Irvine, CA 92614 [949] 261-1022 FAX [949] 260-3297 1014 E. Cooley Dr., Suite A, Colton, CA 92324 [909] 370-4667 FAX [949] 370-1046 9484 Chesapcake Dr., Suite 805, San Diego, CA 92123 [858] 505-8596 FAX [858] 505-9689 9830 South 51st St., Suite 8-120, Phoenix, AZ 85644 [480] 785-0043 FAX [860] 785-0851 2520 E. Sunset Rd. #3, Eas Vegas, NV 89120 [702] 798-3620 FAX [702] 798-3621

MWH-Pasadena/Boeing

Attention: Bronwyn Kelly

Project 1D: Routine Outfall 002

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Report Number: IOD0609

Sampled: 04/08/05 Received: 04/08/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	30 Mart 1 (4)	<b>n</b> ( )		Reporting	Sample	Dilutio	n Date	Date		
Analyte	Method	Batch	Limit	Limit	Result	Facto	rExtracted	Anaiyz	ed Qualific	
Sample ID: IOD0609-01 (DRAI	FT: Outfall 002 -	Water)							REV	1 QUAL
Reporting Units: ug/l		,							QUAL	CODE
Benzene	EPA 624	5D11027	0.28	2.0	ND	1	04/11/05	04/11/05	1)	
Carbon tetrachloride	EPA 624	5D11027	0.28	5.0	ND	1		04/11/05	1	
Chloroform	EPA 624	5D11027	0.33	2.0	ND	1		04/11/05	- 1	
1,1-Dichloroethane	EPA 624	5D11027	0.27	2.0	ND	1		04/11/05		
1,2-Dichloroethane	EPA 624	5D11027	0.28	2.0	ND	1		04/11/05		
1,1-Dichloroethene	EPA 624	5D11027	0.32	3.0	ND	1		04/11/05		
Ethylbenzene	EPA 624	5D11027	0.25	2.0	ND	ĺ	04/11/05			
Tetrachloroethene	EPA 624	5D11027	0.32	2.0	ND	1	04/11/05			
Toluene	EPA 624	5D11027	0.36	2.0	ND	i	04/11/05			
1,1,1-Trichloroethane	EPA 624	5D11027	0.30	2.0	ND	i	04/11/05			
1,1,2-Trichloroethane	EPA 624	5D11C27	0.30	2.0	ND	1	04/11/05			
Trichloroethene	EPA 624	5D11027	0.26	5.0	ND	î	04/11/05			
Trichlorofluoromethane	EPA 624	5D11027	0.34	5.0	ND	j	04/11/05			
Vinyl chloride	EPA 624	5D11027	0.26	5.0	ND	î	04/11/05			
Xylenes, Total	EPA 624	5D11027	0.52	4.0	ND	i	04/11/05		₩ ]	
Surrogate: Dibromofluoromethan	e (80-120%)				105 %	^	0 1/11:05	04711705	•	
Surrogate: Toluene-d8 (80-120%)					100 %					
Surrogate: 4-Bromofluorobenzene					97%					
Sample ID: IOD0609-02 (DRAF	T: Trip Blank - V	Vater)								
Reporting Units: ug/l		,								
Benzene	EPA 624	5D11027	0.28	2.0	ND	1	04/11/05	04/11/05	U	
Carbon tetrachloride	EPA 624	5D11027	0.28	5.0	ND	1	04/11/05		)	
Chloroform	EPA 624	5D11027	0.33	2.0	ND	1	04/11/05			
1,1-Dichloroethane	EPA 624	5D11027	0.27	2.0	ND	1	04/11/05			
1,2-Dichloroethane	EPA 624	5D11027	0.28	2.0	ND	1	04/11/05			
1,1-Dichloroethene	EPA 624	5D11027	0.32	3.0	ND	1	04/11/05			
Ethylbenzene	EPA 624	5D11027	0.25	2.0	ND	1	04/11/05			
Tetrachloroethene	EPA 624	5D11027	0.32	2.0	ND	1	04/11/05			
Toluene	EPA 624	5D11027	0.36	2.0	ND	1	04/11/05			·
1,1,1-Trichloroethane	EPA 624	5D11027	0.30	2.0	ND	1	04/11/05			
1.1.2-Trichloroethane	EPA 624	5D11027	0.30	2.0	ND	Ī	04/11/05			
Trichloroethene	EPA 624	5D11027	0.26	5.0	ND	1	04/11/05			
Trichlorofluoromethane	EPA 624	5D11027	0.34	5.0	ND	1	04/11/05			
Vinyl chloride	EPA 624	5D11027	0.26	5.0	ND	1	04/11/05			
Xylenes, Total	EPA 624	5D11027	0.52	4.0	ND	ì	04/11/05		₩	
Surrogate: Dibromofluoromethane			. —	. • •	103 %	•	2 11 x 11 WW	♥ F/ 1 31 <b>U</b> U		
Surrogate: Toluene-d8 (80-120%)					100 %					
Surrogate: 4-Bromofluorobenzene	(80-120%)				98%					
	•									

DRAFT REPORT
DRAFT REPORT

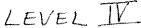
DATA SUBJECT TO CHANGE

AMEC VALIDATED

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced.

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10D0609 < Page 28/f 12>



# CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA AMEC Earth & Environmental

Package ID __T711WC145

550 South Wadsworth Boul	leva <del>rd</del>	Tackage ID	1/11WC145
Suite 500	wrand	Task Order SDG No.	313150010
Lakewood, CO 80226		No. of Analyses	IOD0649
Laboratory Del !	Mar Analytical	Date: 05/13/0	
Reviewer L. Ja			
Analysis/Method Gene		Reviewer's Si	
J	AND ARRIVEDING	— LAP	rusuur
ACTION ITEMS*			
1. Case Narrative			
Deficiencies			
2. Out of Scope			
Analyses			
3. Analyses Not			
Conducted			
4. Missing Hardcopy			······································
Deliverables			
5. Incorrect Hardcopy			
Deliverables			
6. Deviations from	M-1-4		
Analysis Protocol, e.g.,			
Holding Times			
GC/MS Tune/Inst.			
Performance		· · · · · · · · · · · · · · · · · · ·	
Calibrations			
Blanks		***************************************	
Surrogates Matrix Spike/Dup LCS			
Field QC			
Internal Standard		<del></del>	
Performance			
Compound Identification			
and Quantitation			
System Performance			
		***************************************	
COMMENTS ^b	Acceptable as reviewed.		
	I a second second second		
Subcontracted analytical laboratory is r	not meeting contract and/or method requ	irements.	
Differences in protocol have been adop	ted by the laboratory but no action again	nst the laboratory is required	

# Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

# Qualification Code Reference Table

Qualifier	Organics	Inorganics
Н	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
С	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control
В	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
france	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
<del>†</del>	False positive – reported compound was not present. Not applicable.	
•	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
Š	Reported result or other information was incorrect.	Reported result or other information was incorrect.
<b>;</b>	TIC identity or reported retention time has been changed.	Not applicable.
)	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
NQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
ij	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



# DATA VALIDATION REPORT

# NPDES Monitoring

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOD0649

Prepared by

AMEC—Denver Operations 550 South Wadsworth Boulevard, Suite 500 Lakewood, Colorado 80226

SDG No.: Analysis:

IOD0649 General Minerals

**NPDES** 

### 1. INTRODUCTION

Task Order Title:

NPDES Monitoring

Contract Task Order #:

313150010

Sample Delivery Group #:

IOD0649

Project Manager:

B. McIlvaine

Matrix:

Water

Analysis:

General Minerals

QC Level:

Level IV

No. of Samples:

Reviewer:

L. Jarusewic

Date of Review:

May 13, 2005

The samples listed in Table 1 was validated based on the guidelines outlined in the AMEC Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 350.2, 180.1, and 120.1, and validation guidelines outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Project:

DATA VALIDATION REPORT

SDG No.:

Analysis:

IOD0649

**NPDES** 

General Minerals

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 001	Outfall 001	IOD0649-01	Water	General Minerals

General Minerals

### 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

DATA VALIDATION REPORT

Following are findings associated with sample management:

# 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of  $4^{\circ}C \pm 2^{\circ}C$ . No preservation problems were noted by the laboratory. No qualifications were required.

### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for all analyses presented in this SDG. No sample qualifications were required.

### 2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for ammonia and conductivity and the 48-hour holding time for turbidity were met. No qualifications were required.

#### 2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥0.995. The initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. No qualifications were required.

#### 2.3 BLANKS

Turbidity was detected in a bracketing CCB at 0.040 NTU; however, the turbidity CCB result was insufficient to qualify Outfall 001. The remaining method blank and CCB results reported on the summary forms and in the raw data for the blank analyses associated with the sample were nondetects at the reporting limit. No qualifications were required.

# 2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ammonia laboratory control sample recovery was within the laboratory-established control limits. The LCS is not applicable to turbidity or conductivity. No qualifications were required.

Project:

DATA VALIDATION REPORT

SDG No.: Analysis:

**NPDES** IOD0649

General Minerals

### 2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in this SDG.

### 2.6 LABORATORY DUPLICATES

MS/MSD analyses were performed on Outfall 001 for ammonia. The RPD was within the laboratoryestablished control limits and no qualifications were required.

# 2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed on Outfall 001 for ammonia. The recoveries were within the laboratory-established control limits and no qualifications were required.

# 2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of this sample; therefore, furnace atomic absorption QC is not applicable.

### 2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

# 2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the sample in this data package. Calculations were verified, and the sample results reported on the Form I were verified against the raw data. No transcription errors or calculation errors were noted. No qualifications were required.

### 2.11 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

# 2.11.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no associated field QC samples. No qualifications were required.

Project:

ect: NPDES No.: IOD0649

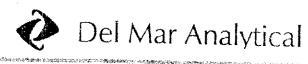
SDG No.: Analysis:

General Minerals

# DATA VALIDATION REPORT

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



MWH-Pasadena/Boeing

Project lD: Routine Outfall 001

300 North Lake Avenue, Suite 1200 Pasadena, CA 91101

Attention: Bronwyn Kelly

Report Number: IOD0649

Sampled: 04/09/05

Received: 04/09/05

### DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit			n Date rExtracted	Date Analyzed	Data Qualifier
Sample ID: IOD0649-01 (DRAFT Reporting Units: mg/l	: Outfall 001 - V	Vater)			Samp	oled: 04	1/09/05	8	TALLE
Ammonia-N (Distilled)	EPA 350.2	5D12076	0.30	0.50	0.84	1	04/12/05	04/12/05	
Sample ID: 10D0649-01 (DRAFT Reporting Units: NTU	: Outfall 001 - V	vater)			Samp	oled: 04		0 % 1 22.00	
Turbidity	EPA 180.1	5D09037	0.040	1.0	2.8	1	04/09/05	04/09/05	
Sample ID: IOD0649-01 (DRAFT Reporting Units: umhos/cm	: Outfall 001 - W	vater)			Samp	led: 04			
Specific Conductance	EPA 120.1	5D14115	1.0	1.0	660	1	04/14/05	04/14/05	STANSTON STA

# **AMEC VALIDATED**



DRAFT REPORT
DRAFT REPORT
DATA SUBJECT TO CHANGE

				the state of the s



### LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing

Project: Routine Outfall 001

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly

Sampled: 04/16/05 Received: 04/16/05

Issued: 06/06/05 15:11

### NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

This entire report was reviewed and approved for release.

### SAMPLE CROSS REFERENCE

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

LABORATORY ID	CLIENT ID	MATRIX
IOD1251-01	Outfall 001	Water
IOD1251-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine

Michell Harper

Michele Harper Project Manager



MWH-Pasadena/Boeing

Project ID: Routine Outfall 001

300 North Lake Avenue, Suite 1200 Pasadena, CA 91101

Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

Attention: Bronwyn Kelly

# PURGEABLES BY GC/MS (EPA 624)

	,								
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result		n Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD1251-01 (Outfall	001 - Water)								
Reporting Units: ug/l	,								
Benzene	EPA 624	5D29021	0.28	2.0	ND	1	04/29/05	04/30/05	
Carbon tetrachloride	EPA 624	5D29021	0.28	5.0	ND	1	04/29/05	04/30/05	
Chloroform	EPA 624	5D29021	0.33	2.0	ND	1	04/29/05		
I, I-Dichloroethane	EPA 624	5D29021	0.27	2.0	ND	1	04/29/05	04/30/05	
1,2-Dichloroethane	EPA 624	5D29021	0.28	2.0	ND	1	04/29/05	04/30/05	
1,1-Dichloroethene	EPA 624	5D29021	0.32	3.0	ND ND	1	04/29/05	04/30/05	
Ethylbenzene	EPA 624	5D29021	0.25	2,0	ND	1	04/29/05	04/30/05	
Tetrachloroethene	EPA 624	5D29021	0.32	2.0	ND			04/30/05	
Toluene	EPA 624	5D29021	0.36	2.0	ND ND	1	04/29/05	04/30/05	
1,1,1-Trichloroethane	EPA 624	5D29021	0.30	2.0	ND	1	04/29/05	04/30/05	
1,1,2-Trichloroethane	EPA 624	5D29021	0.30	2.0	ND ND	1	04/29/05	04/30/05	
Trichloroethene	EPA 624	5D29021	0.26	5.0	ND ND	1	04/29/05	04/30/05	
Trichlorofluoromethane	EPA 624	5D29021	0.24	5.0		1	04/29/05	04/30/05	
Vinyl chloride	EPA 624	5D29021	0.26	5.0	ND	1	04/29/05	04/30/05	
Xylenes, Total	EPA 624	5D29021	0.20		ND	1	04/29/05	04/30/05	
Surrogate: Dibromofluoromethane		31029021	0.52	4.0	ND	1	04/29/05	04/30/05	
Surrogate: Toluene-d8 (80-120%)	(00 12010)				119%				
Surrogate: 4-Bromofluorobenzene (	(80-120%)				106 %				
					110 %				
Sample ID: IOD1251-02 (Trip Bla Reporting Units: ug/l	nk - Water)								
Benzene	EPA 624	5D29021	0.28	2.0	ND		04/00/0#	0.47=0	
Carbon tetrachloride	EPA 624	5D29021	0.28		ND	1	04/29/05	04/29/05	
Chloroform	EPA 624	5D29021	0.28	5.0	ND	1	04/29/05	04/29/05	
1,1-Dichloroethane	EPA 624	5D29021	0.33	2.0	ND	1	04/29/05	04/29/05	
1,2-Dichloroethane	EPA 624	5D29021	0.27	2.0	ND	1	04/29/05	04/29/05	
1,1-Dichloroethene	EPA 624	5D29021 5D29021	0.28	2.0	ND	1	04/29/05	04/29/05	
Ethylbenzene	EPA 624	5D29021		3.0	ND	1	04/29/05	04/29/05	
Tetrachloroethene	EPA 624		0.25	2.0	ND	1	04/29/05	04/29/05	
Toluene		5D29021	0.32	2.0	ND	1	04/29/05	04/29/05	
1,1,1-Trichloroethane	EPA 624	5D29021	0.36	2.0	ND	1	04/29/05	04/29/05	
1,1,2-Trichloroethane	EPA 624	5D29021	0.30	2.0	ND	1	04/29/05	04/29/05	
Trichloroethene	EPA 624	5D29021	0.30	2.0	ND	1	04/29/05	04/29/05	
Trichlorofluoromethane	EPA 624	5D29021	0.26	5.0	ND	1	04/29/05	04/29/05	
Vinyl chloride	EPA 624	5D29021	0.34	5.0	ND	1	04/29/05	04/29/05	
	EPA 624	5D29021	0.26	5.0	ND	1	04/29/05	04/29/05	
Xylenes, Total	EPA 624	5D29021	0.52	4.0	ND	1	04/29/05	04/29/05	
Surrogate: Dibromofluoromethane (6	80-120%)				112%				
Surrogate: Toluene-d8 (80-120%)					104 %				
Surrogate: 4-Bromofluorobenzene (8	30-120%)				108 %				

Del Mar Analytical, Irvine

Michele Harper Project Manager



MWH-Pasadena/Boeing

Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

300 North Lake Avenue, Suite 1200

Sampled: 04/16/05 Received: 04/16/05

Pasadena, CA 91101

Report Number: IOD1251

### ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD1251-01 (Outfall 001 - V	Vater)								
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5D17002	1.1	5.0	1.2	0.962	04/17/05	04/21/05	B, J
2,4-Dinitrotoluene	EPA 625	5D17002	0.23	9.0	ND	0.962	04/17/05	04/21/05	
N-Nitrosodimethylamine	EPA 625	5D17002	0.22	8.0	ND	0.962	04/17/05	04/21/05	
Pentachlorophenol	EPA 625	5D17002	0.78	8.0	ND	0.962	04/17/05	04/21/05	
2,4,6-Trichlorophenol	EPA 625	5D17002	0.10	6.0	ND	0.962	04/17/05	04/21/05	
Surrogate: 2-Fluorophenol (30-120%)					66 %				
Surrogate: Phenol-d6 (35-120%)					70 %				
Surrogate: 2,4,6-Tribromophenol (45-120	1%)				86 %				
Surrogate: Nitrobenzene-d5 (45-120%)					71 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					72 %				
Surrogate: Terphenyl-d14 (45-120%)					76 %				



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

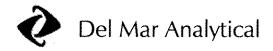
Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

# ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result		Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD1251-01 (Outfall 001 - Wa	ter) - cont.								
Reporting Units: ug/l	•								
alpha-BHC	EPA 608	5D20037	0.0010	0.010	ND	0.952	04/20/05	04/21/05	
Surrogate: Decachlorobiphenyl (45-120%)					83 %	0,700	0-112.07.00	04/21/03	
Surrogate: Tetrachloro-m-xylene (35-115%)					64 %				



MWH-Pasadena/Boeing

Project ID: Routine Outfall 001

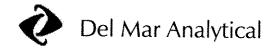
300 North Lake Avenue, Suite 1200

Sampled: 04/16/05 Received: 04/16/05

Pasadena, CA 91101 Attention: Bronwyn Kelly Report Number: IOD1251

METAIC

			NIL I A	ILS					
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD1251-01 (Outfall 001	- Water) - cont.								
Reporting Units: mg/l									
Iron	EPA 200.7	5D16042	0.0088	0.040	0.012	1	04/16/05	04/16/05	j
Sample ID: IOD1251-01 (Outfall 001	- Water)								
Reporting Units: ug/l									
Chromium	EPA 200.7	5D16042	0.68	5.0	1.5	I	04/16/05	04/16/05	J
Copper	EPA 200.8	5D18081	0.49	2.0	1.4	1	04/18/05	04/19/05	J
Lead	EPA 200.8	5D18081	0.13	1.0	ND	1	04/18/05	04/19/05	
Manganese	EPA 200.7	5D16042	3.2	20	15	1	04/16/05	04/16/05	J
Mercury	EPA 245.1	5D18059	0.063	0.20	ND	1	04/18/05	04/18/05	



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

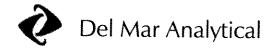
Pasadena, CA 91101 Attention: Bronwyn Kelly Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

### **INORGANICS**

				** ***					
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD1251-01 (Outfall 0	01 - Water) - cont.								
Reporting Units: mg/l	,								
Ammonia-N (Distilled)	EPA 350.2	5D19082	0.30	0.50	ND	I	04/19/05	04/19/05	
Biochemical Oxygen Demand	EPA 405.1	5D16055	0.59	2.0	ND	1	04/16/05	04/21/05	
Chloride	EPA 300.0	5D16031	1.3	2.5	32	5	04/16/05	04/16/05	
Nitrate/Nitrite-N	EPA 300.0	5D16031	0.072	0.26	ND	1	04/16/05	04/16/05	
Oil & Grease	EPA 413.1	5D18083	0.94	5.0	1.7	1	04/18/05	04/18/05	J
Sulfate	EPA 300.0	5D16031	0.90	2,5	120	5	04/16/05	04/16/05	3
Surfactants (MBAS)	SM5540-C	5D16050	0.044	0.10	ND	1	04/16/05	04/16/05	
Total Dissolved Solids	SM2540C	5D18095	10	10	600	ľ	04/18/05	04/18/05	
Total Suspended Solids	EPA 160.2	5D19080	10	10	ND	1	04/19/05	04/19/05	
Sample ID: IOD1251-01 (Outfall 00 Reporting Units: ml/l/hr Total Settleable Solids	11 <b>- Water)</b> EPA 160.5	5D16052	0.10	0.10	ND	1	04/16/05	04/16/05	
Sample ID: IOD1251-01 (Outfall 00 Reporting Units: NTU	1 - Water)								
Turbidity	EPA 180.1	5D16054	0.040	1.0	0.74	1	04/16/05	04/16/05	J
Sample ID: IOD1251-01 (Outfall 00 Reporting Units: ug/l	1 - Water)								
Chromium VI	EPA 218.6	5D16046	0.10	1.0	ND	1	04/16/05	04/16/05	
Total Cyanide	EPA 335.2	5D18072	2,2	5.0	ND	1	04/18/05	04/18/05	
Perchlorate	EPA 314.0	5D20061	0.80	4.0	ND	1	04/20/05	04/20/05	
Sample ID: IOD1251-01 (Outfall 00 Reporting Units: umhos/cm	l - Water)								
Specific Conductance	EPA 120.1	5D18087	1.0	1.0	660	1	04/18/05	04/18/05	



MWH-Pasadena/Boeing

Project ID: Routine Outfall 001

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly

Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

### SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 001 (IOD1251-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	04/16/2005 08:55	04/16/2005 12:00	04/16/2005 12:45	04/16/2005 13:45
EPA 180.1	2	04/16/2005 08:55	04/16/2005 12:00	04/16/2005 14:30	04/16/2005 15:30
EPA 218.6	1	04/16/2005 08:55	04/16/2005 12:00	04/16/2005 13:01	04/16/2005 14:43
EPA 300.0	2	04/16/2005 08:55	04/16/2005 12:00	04/16/2005 14:00	04/16/2005 14:46
EPA 405.1	2	04/16/2005 08:55	04/16/2005 12:00	04/16/2005 17:59	04/21/2005 11:00
SM5540-C	2	04/16/2005 08:55	04/16/2005 12:00	04/16/2005 14:00	04/16/2005 14:59

MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

# METHOD BLANK/QC DATA

# **PURGEABLES BY GC/MS (EPA 624)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source	6/ DEC	%REC	nnn	RPD	Data
Batch: 5D29021 Extracted: 04/29/05		Limit	MDL	Umus	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Blank Analyzed: 04/29/2005 (5D29021-B	LK1)										
Benzene	ND	2.0	0.28	ug/l							
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	ug/I							
Carbon tetrachloride	ND	5.0	0.28	ug/l							
Chloroform	ND	2.0	0.33	ug/l							
1,1-Dichloroethane	ND	2.0	0.27	ug/I							
1,2-Dichloroethane	ND	2.0	0.28	ug/l							
1,1-Dichloroethene	ND	3.0	0.32	ug/l							
Ethylbenzene	ND	2.0	0.25	ug/l							
Tetrachloroethene	ND	2.0	0.32	ug/l							
Toluene	ND	2.0	0.36	ug/l							
1,1,1-Trichloroethane	ND	2.0	0.30	ug/l							
1,1,2-Trichloroethane	ND	2.0	0.30	ug/l							
Trichloroethene	ND	5.0	0.26	ug/l							
Trichlorofluoromethane	ND	5.0	0.34	ug/l							
Vinyl chloride	ND	5.0	0.26	ug/l							
Xylenes, Total	ND	4.0	0.52	ug/l							
Surrogate: Dibromofluoromethane	28.2	,,,,	0.02	ug/l	25.0		113	00.130			
Surrogate: Toluene-d8	25.9			ug/l	25.0 25.0			80-120			
Surrogate: 4-Bromofluorobenzene	27.0			ug/l	25.0		104 108	80-120 80-120			
LCS Analyzed: 04/29/2005 (5D29021-BS1	)			_							
Benzene	25.5	2.0	0.28	ug/l	25.0		103	70.100			
Carbon tetrachloride	34.2	5.0	0.28	ug/I	25.0		102	70-120			
Chloroform	29,3	2.0	0.33	ug/l	25.0		137	70-140			
1,1-Dichloroethane	28.1	2.0	0.27	_			117	75-130			
1,2-Dichloroethane	33.5	2.0	0.28	ug/i	25.0 25.0		112	70-135			
1,1-Dichloroethene	25.5	3.0	0.32	ug/l			134	60-150			
Ethylbenzene	28.4	2.0	0.25	ug/l	25.0		102	75-135			
Tetrachloroethene	27.7	2.0	0.32	ug/l	25.0		114	80-120			
Toluene	26.7	2.0	0.36	ug/l	25.0		111	75-125			
1,1,1-Trichloroethane	32.6	2.0		ug/l	25.0		107	75-120			
1,1,2-Trichloroethane	26.3		0.30	ug/l	25.0		130	75-140			
Trichloroethene	26.1	2.0	0.30	ug/l	25.0		105	70-125			
Trichlorofluoromethane	30.7	5.0	0.26	ug/l	25.0			80-120			
Vinyl chloride		5.0	0.34	ug/l	25.0			65-145			
Surrogate: Dibromofluoromethane	28.2	5.0	0.26	ug/l	25.0			50-130			
Del Mar Analytical, Irvine	27.7			ug/l	25.0		111	80-120			

Michele Harper Project Manager

MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

### METHOD BLANK/QC DATA

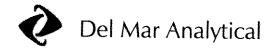
# PURGEABLES BY GC/MS (EPA 624)

Analyte	ъ .	Reporting			Spike	Source		%REC		RPD	Data
·	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 5D29021 Extracted: 04/29/	<u>05</u>										
LCS Analyzed: 04/29/2005 (5D29021-I	BS1)										
Surrogate: Toluene-d8	26.6			ug/l	25.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	28.7			ug/l	25.0		115	80-120			
Matrix Spike Analyzed: 04/29/2005 (51	D29021-MS1)				Son	rce: IOD	326_07				
Benzene	25.9	2.0	0.28	ug/l	25.0	ND	104	70-120			
Carbon tetrachloride	34.8	5.0	0.28	ug/l	25.0	ND	139	70-120			
Chloroform	33.8	2.0	0.33	ug/l	25.0	3.3	122	70-145			
1,1-Dichloroethane	185	2.0	0.27	ug/l	25.0	150	140	65-135			M1
1,2-Dichloroethane	39.2	2.0	0.28	ug/l	25.0	4.3	140	60-150			MI
1,1-Dichloroethene	29.6	3.0	0.32	ug/l	25.0	4.2	102	65-140			
Ethylbenzene	28.7	2.0	0.25	ug/l	25.0	ND	115	70-130			
Tetrachloroethene	35.9	2.0	0.32	ug/l	25.0	7.9	112	70-130			
Toluene	27.1	2.0	0.36	ug/l	25.0	ND	108	70-130			
1,1,1-Trichloroethane	34.0	2.0	0.30	ug/l	25.0	ND	136	75-140			
1,1,2-Trichloroethane	93.7	2.0	0.30	ug/l	25.0	57	147	60-135			MI
Trichloroethene	35.7	5.0	0.26	ug/l	25.0	8.8	108	70-125			MI
Trichlorofluoromethane	30.4	5.0	0.34	ug/l	25.0	ND	122	55-145			
Vinyl chloride	27.2	5.0	0.26	ug/l	25.0	ND	109	40-135			
Surrogate: Dibromofluoromethane	28.2			ug/l	25.0	2 4 8.2	113	80-120			
Surrogate: Toluene-d8	26.2			ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	28.7			ug/l	25.0		115	80-120			
Matrix Spike Dup Analyzed: 04/29/2005	5 (5D29021-MS	D1)			Saus	oo. IOD1	93 C 05				
Benzene	25.8	2.0	0.28	u ~/I		ce: IODI;			_		
Carbon tetrachloride	32.8	5.0	0.28	ug/l	25.0	ND	103	70-120	0	20	
Chloroform	32.4	2.0	0.28	ug/I	25.0	ND	131	70-145	6	25	
1,1-Dichloroethane	178	2.0	0.33	ug/l	25.0	3.3	116	70-135	4	20	
1,2-Dichloroethane	38.6	2.0	0.27	ug/I	25.0	150	112	65-135	4	20	
I.1-Dichloroethene	28.9	3.0	0.28	ug/l	25.0	4.3	137	60-150	2	20	
Ethylbenzene	28.3	2.0		ug/l	25.0	4.2	99	65-140	2	20	
Tetrachloroethene	35.4	2.0	0.25	ug/l	25.0	ND	113	70-130	1	20	
Toluene	26.5		0.32	ug/l	25.0	7.9		70-130	1	20	
1,1,1-Trichloroethane	29.3 32.4	2.0	0.36	ug/l	25.0	ND		70-120	2	20	
1,1,2-Trichloroethane		2.0	0.30	ug/l	25.0	ND		75-140	5	20	
Trichloroethene	99.2	2.0	0.30	ug/l	25.0	57		60-135	6	25	MI
Trichlorofluoromethane	34.9	5.0	0.26	ug/l	25.0	8.8		70-125	2	20	
: Industry in the state of the	29.5	5.0	0.34	ug/l	25.0	ND	118	55-145	3	25	

Del Mar Analytical, Irvine

Michele Harper

Project Manager



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

# METHOD BLANK/QC DATA

# PURGEABLES BY GC/MS (EPA 624)

Analyte  Batch: 5D29021 Extracted: 04/29/05	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Matrix Spike Dup Analyzed: 04/29/2005	(5D29021-M	SD1)			Soui	rce: IOD	1326-07				
Vinyl chloride	26.3	5.0	0.26	ug/l	25.0	ND	105	40-135	3	30	
Surrogate: Dibromofluoromethane	28.0			ug/l	25.0	. 123	112	80-120	3	30	
Surrogate: Toluene-d8	26.2			ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	28.1			ug/l	25.0		112	80-120			

MWH-Pasadena/Boeing

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Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

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Sampled: 04/16/05 Received: 04/16/05

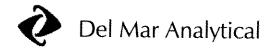
# METHOD BLANK/QC DATA

# ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC	RPD	RPD Limit	Data Qualifiers
Batch: 5D17002 Extracted: 04/17/05	5_									23,134,16	Quantities
Blank Analyzed: 04/21/2005 (5D17002-B	I K ()										
Bis(2-ethylhexyl)phthalate	1.36	5.0	1.1	un#							
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l ug/l							Ĵ
N-Nitrosodimethylamine	ND	8.0	0.23	ug/l							
Pentachlorophenol	ND	8.0	0.78	ug/l							
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l							
Surrogate: 2-Fluorophenol	12.5	0.0	0.10	ug/l	20.0		62	26 120			
Surrogate: Phenol-d6	14.0			ug/l	20.0		70	30-120 35-120			
Surrogate: 2,4,6-Tribromophenol	14.7			ug/l	20.0		70 74	45-120			
Surrogate: Nitrobenzene-d5	7.20			ug/l	10.0		72	45-120 45-120			
Surrogate: 2-Fluorobiphenyl	7.36			ug/l	10.0		74	45-120 45-120			
Surrogate: Terphenyl-d14	7.66			ug/l	10.0		77	45-120 45-120			
LCS Analyzed: 04/21/2005 (5D17002-BS)	13			&·	10.0		- //	45-120			
Bis(2-ethylhexyl)phthalate	8.26	ž o									M-NRI
2,4-Dinitrotoluene	6.28	5.0	1.1	ug/l	10.0		83	60-130			
N-Nitrosodimethylamine	6.12	9.0 8.0	0.23	ug/l	10.0		63	60-120			J
Pentachlorophenol	7.72	8.0	0.22	ug/l	10.0		61	40-120			J
2,4,6-Trichlorophenol	7.48	6.0	0.78	ug/l	10.0		77	50-120			J
Surrogate: 2-Fluorophenol	10.9	0.0	0.10	ug/l	10.0		75	60-120			
Surrogate: Phenol-d6	12.2			ug/l	20.0		54	30-120			
Surrogate: 2,4,6-Tribromophenol	15.2			ug/l	20.0		61	35-120			
Surrogate: Nitrobenzene-d5	6.64			ug/l	20.0		76	45-120			
Surrogate: 2-Fluorobiphenyl	6.60			ug/l	10.0			45-120			
Surrogate: Terphenyl-d14	7.16			ug/l ug/l	10.0 10.0			45-120			
• •				ag i	10.0		72	45-120			
LCS Dup Analyzed: 04/21/2005 (5D17002 Bis(2-ethylhexyl)phthalate	-										
2,4-Dinitrotoluene	8.18	5.0	1.1	ug/l	10.6		82	60-130	1	20	
N-Nitrosodimethylamine	6.50	9.0	0.23	ug/l	10.0		65	60-120	3	20	J
*	6.38	8.0	0.22	ug/l	10.0		64	40-120	4	20	J
Pentachlorophenol	7.46	8.0	0.78	ug/l	10.0		75	50-120	3	25	J
2,4,6-Trichlorophenol	7.62	6.0	0.10	ug/l	10.0		76	60-120	2	20	
Surrogate: 2-Fluorophenol	11.5			ug/l	20.0		<i>58</i> .	30-120			
Surrogate: Phenol-d6	12.7			ug/l	20.0		64 .	35-120			
Surrogate: 2,4,6-Tribromophenol	15.0			ug/l	20.0		75 4	45-120			
Surrogate: Nitrobenzene-d5	6.56			ug/l	10.0		66 4	15-120			
Surrogate: 2-Fluorobiphenyl	6.60			ug/l	10.0		66 4	<i>45-120</i>			

Del Mar Analytical, Irvine

Michele Harper Project Manager



MWH-Pasadena/Boeing

Attention: Bronwyn Kelly

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

### METHOD BLANK/QC DATA

# ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D17002 Extracted: 04	1/17/05										
LCS Dup Analyzed: 04/21/2005 (5	5D17002-BSD1)										
Surrogate: Terphenyl-d14	6.76			ug/l	10.0		68	45-120			

Del Mar Analytical, Irvine Michele Harper ³roject Manager



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

### METHOD BLANK/QC DATA

# ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D20037 Extracted: 04/20/05	-										
Blank Analyzed: 04/21/2005 (5D20037-B	LK1)										
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.425			ug/l	0.500		85	45-120			
Surrogate: Tetrachloro-m-xylene	0.219			ug/l	0.500		44	35-115			
LCS Analyzed: 04/21/2005 (5D20037-BS)	l)										M-NR1
alpha-BHC	0.356	0.010	0.0010	ug/I	0.500		71	45-115			1A1-1A1/1
Surrogate: Decachlorobiphenyl	0.425			ug/l	0.500		85	45-120			
Surrogate: Tetrachloro-m-xylene	0.336			ug/l	0.500		67	35-115			
LCS Dup Analyzed: 04/21/2005 (5D20037	-BSD1)										
alpha-BHC	0.245	0.010	0.0010	ug/l	0.500		49	45-115	37	30	R-7
Surrogate: Decachlorobiphenyl	0.433			ug/l	0.500		87	45-120	J.1	30	<i>K</i> -/
Surrogate: Tetrachloro-m-xylene	0.245			ug/I	0.500		49	35-115			

MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

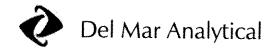
Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

### METHOD BLANK/QC DATA

### **METALS**

		Reporting	3		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 5D16042 Extracted: 04/16/05	_										-
Di 1.4. / 1.04/4/0000											
Blank Analyzed: 04/16/2005 (5D16042-Bl	•										
Chromium	ND	5.0	0.68	ug/l							
Iron	ND	0.040	0.0088	mg/l							
Manganese	ND	20	3.2	ug/l							
LCS Analyzed: 04/16/2005 (5D16042-BS1	)										
Chromium	932	5.0	0.68	ug/l	1000		93	85-115			
Iron	0.939	0.040	0.0088	mg/l	1.00		94	85-115			
Manganese	948	20	3.2	ug/l	1000		95	85-115			
Matrix Spike Analyzed: 04/16/2005 (5D16	(042-MS1)				Som	rce: IOD0	K63.A1				
Chromium	960	5.0	0.68	ug/l	1000	1.0	96	70-130			
Iron	0.990	0.040	0.0088	mg/l	1.00	0.010	98				
Manganese	987	20	3.2	ug/l	1000	4.8	98	70-130 70-130			
Matrix Spike Dup Analyzed: 04/16/2005 (	5D16042_MS	(D1)		•	6	rce: IOD0					
Chromium	942	5.0	0.68								
Iron	0.969	0.040	0.0088	ug/l	1000	1.0	94	70-130	2	20	
Manganese	970	20	3.2	mg/l	1.00	0.010	96	70-130	2	20	
-	270	20	3.2	ug/l	1000	4.8	97	70-130	2	20	
Batch: 5D18059 Extracted: 04/18/05											
Blank Analyzed: 04/18/2005 (5D18059-BL	K1)										
Mercury	•	0.00	0.072								
Trave vice y	ND	0.20	0.063	ug/l							
LCS Analyzed: 04/18/2005 (5D18059-BS1)											
Mercury	7.76	0.20	0.063	ug/l	8.00		97	85-115			



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

### METHOD BLANK/QC DATA

### **METALS**

Analyte	D ta	Reporting	****	w	Spike	Source		%REC		RPD	Data
·	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 5D18059 Extracted: 04/18/05	-										
Matrix Spike Analyzed: 04/18/2005 (5D1	8059-MS1)				Son	rce: IOD1	267.01				
Mercury	5.54	0.20	0.063	ug/l	8.00	0.078	68	70-130			1.02
THE CO. S.			0.000	-5·1	0.00	0.076	Vo	70-130			M2
Matrix Spike Dup Analyzed: 04/18/2005	-	· ·			Sou	rce: IOD1	267-01				
Mercury	5.56	0.20	0.063	ug/l	8.00	0.078	69	70-130	0	20	M2
Batch: 5D18081 Extracted: 04/18/05	-										
Blank Analyzed: 04/19/2005 (5D18081-B	LK1)										
Copper	ND	2.0	0.49	ug/l							
Lead	ND	1.0	0.13	ug/l							
LCS Analyzed: 04/19/2005 (5D18081-BS)	.)			<b>~</b>							
Copper	84.1	2.0	0.49	ug/l	80.0		105	85-115			
Lead	82.1	1.0	0.13	ug/l	80.0		103	85-115			
Matrix Spike Analyzed: 04/19/2005 (5D18	8081-MS1)			_	Sour	ce: IODI		***************************************			
Copper	79.4	2.0	0.49	ug/l	80.0	1.4	98	70-130			
Lead	80.6	1.0	0.13	ug/l	80.0	ND	101	70-130			
Matrix Spike Dup Analyzed: 04/19/2005 (	5D18081_MS1	D1)						,0-150			
Copper	73.4	2.0	0.40			ce: IOD12					
Lead	85.5	1.0	0.49	ug/l	80.0	1.4	90	70-130	8	20	
	03,3	1.0	0.13	ug/l	80.0	ND	107	70-130	6	20	

MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

### METHOD BLANK/QC DATA

### **INORGANICS**

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 5D16031 Extracted: 04/16/05											<b>Z</b>
	•										
Blank Analyzed: 04/16/2005 (5D16031-Bl	LK1)										
Chloride	ND	0.50	0.26	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.072	mg/l							
Sulfate	ND	0.50	0.18	mg/l							
LCS Analyzed: 04/16/2005 (5D16031-BS1	)										
Chloride	4.87	0.50	0.26	mg/l	5.00		97	90-110			
Sulfate	9.85	0.50	0.18	mg/l	10.0		98	90-110			
Matrix Sailta Analysis and Charles	004 5504)			·····•				70-110			
Matrix Spike Analyzed: 04/16/2005 (5D16	=				Sour	ce: IOD1	092-09				
Chloride	4.78	0.50	0.26	mg/l	5.00	0.15	93	80-120			
Sulfate	9.64	0.50	0.18	mg/l	10.0	ND	96	80-120			
Matrix Spike Dup Analyzed: 04/16/2005 (	5D16031-MSI	<b>)</b> 1)			Sour	ce: IOD1	19269				
Chloride	5.07	0.50	0.26	mg/l	5.00	0.15	98	80-120	6	20	
Sulfate	9.80	0.50	0.18	mg/l	10.0	ND	98	80-120	2	20 20	
Batch: 5D16046 Extracted: 04/16/05				~		, AB	20	00-120	4.	20	
25 CH. 35 100 10 LAMACTCU. 04/10/03											
Blank Analyzed: 04/16/2005 (5D16046-BL	K1)										
Chromium VI	ND	1.0	0.10	ug/I							
LCS Analyzed: 04/16/2005 (5D16046-BS1)											
Chromium VI	52.6	1.0	0.10	ug/l	50.0		105	90-110			
Manufacture Cutter American Contract Co				***				30-110			
Matrix Spike Analyzed: 04/16/2005 (5D160					Sourc	e: IOD12	51-01				
Chromium VI	50.6	1.0	0.10	ug/l	50.0	ND	101	90-110			

**Del Mar Analytical, Irvine** Michele Harper

Project Manager



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

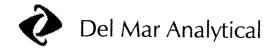
### METHOD BLANK/QC DATA

### **INORGANICS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D16046 Extracted: 04/16/05	•										
Matrix Spike Dup Analyzed: 04/16/2005	(5D16046-MS)	<b>D1</b> )			Sou	rce: IOD	1251-01				
Chromium VI	49.9	1.0	0.10	ug/l	50.0	ND	100	90-110	1	10	
Batch: 5D16050 Extracted: 04/16/05	•										
Blank Analyzed: 04/16/2005 (5D16050-BI	-K1)										
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 04/16/2005 (5D16050-BS1	)										
Surfactants (MBAS)	0.248	0.10	0.044	mg/l	0.250		99	90-110			
Matrix Spike Analyzed: 04/16/2005 (5D16	050-MS1)				Sour	ce: IOD1	211-01				
Surfactants (MBAS)	0.201	0.10	0.044	mg/l	0.250	ND	80	50-125			
Matrix Spike Dup Analyzed: 04/16/2005 (	5D16050-MSD	<b>(1)</b>			Sour	ce: IOD1	211-01				
Surfactants (MBAS)	0.203	0.10	0.044	mg/l	0.250	ND	81	50-125	1	20	
Batch: 5D16054 Extracted: 04/16/05											
Blank Analyzed: 04/16/2005 (5D16054-BL	K1)										
Turbidity	ND	1.0	0.040	NTU							
Duplicate Analyzed: 04/16/2005 (5D16054-	DUP1)				Sourc	ce: IOD12	211-01				
Turbidity	0.640	1.0	0.040	NTU	~~~	0.60			6	20	J
Batch: 5D16055 Extracted: 04/16/05											
Blank Analyzed: 04/21/2005 (5D16055-BLI	K1)										
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							

**Del Mar Analytical, Irvine** Michele Harper

Project Manager



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

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Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

### METHOD BLANK/QC DATA

### **INORGANICS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D16055 Extracted: 04/16/05	-										
LCS Analyzed: 04/21/2005 (5D16055-BS1	.)										
Biochemical Oxygen Demand	198	100	30	mg/l	198		100	85-115			
LCS Dup Analyzed: 04/21/2005 (5D16055	S-BSD1)										
Biochemical Oxygen Demand	196	100	30	mg/l	198		99	85-115	ì	20	
Batch: 5D18072 Extracted: 04/18/05											
Blank Analyzed: 04/18/2005 (5D18072-BL	.K1)										
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 04/18/2005 (5D18072-BS1	)										
Total Cyanide	180	5.0	2.2	ug/l	200		90	90-110			
Matrix Spike Analyzed: 04/18/2005 (5D18	072-MS1)				Sour	ce: IOD0	852-01				
Total Cyanide	185	5.0	2.2	ug/l	200	ND	92	70-115			
Matrix Spike Dup Analyzed: 04/18/2005 (	5D18072-MSE	<b>)</b> 1)			Sour	ce: 1OD0	852-01				
Total Cyanide	184	5.0	2.2	ug/l	200	ND	92	70-115	I	15	
Batch: 5D18083 Extracted: 04/18/05											
Blank Analyzed: 04/18/2005 (5D18083-BL	K1)										
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 04/18/2005 (5D18083-BS1)											M-NR1
Oil & Grease	20.5	5.0	0.94	mg/l	20.0		102	65-120			



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

### METHOD BLANK/QC DATA

### **INORGANICS**

Analyte  Batch: 5D18083 Extracted: 04/18/05	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Dup Analyzed: 04/18/2005 (5D18083 Oil & Grease											
Batch: 5D18087 Extracted: 04/18/05	19.5	5.0	0.94	mg/l	20.0		98	65-120	5	20	
Duplicate Analyzed: 04/18/2005 (5D18087	-				Sou	rce: IOD1	082-01				
Specific Conductance  Batch: 5D18095 Extracted: 04/18/05	230	1.0	1.0	umhos/cm		240			4	5	
Blank Analyzed: 04/18/2005 (5D18095-BI											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 04/18/2005 (5D18095-BS1)	)										
Total Dissolved Solids	988	10	10	mg/l	1000		99	90-110			
Duplicate Analyzed: 04/18/2005 (5D18095	=				Sour	ce: IOD0	830-01				
Total Dissolved Solids	345	10	10	mg/l		350			į	10	
Batch: 5D19080 Extracted: 04/19/05											
Blank Analyzed: 04/19/2005 (5D19080-BL	K1)										
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 04/19/2005 (5D19080-BS1)											
Total Suspended Solids	974	10	10	mg/l	1000		97	85-115			



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300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly Project ID: Routine Outfall 001

Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

### METHOD BLANK/QC DATA

### **INORGANICS**

Analyte  Batch: 5D19080 Extracted: 04/19/05	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Duplicate Analyzed: 04/19/2005 (5D1908) Total Suspended Solids  Batch: 5D19082 Extracted: 04/19/05	ND	10	10	mg/l	Sou	rce: IOD1 ND	168-06			10	
Blank Analyzed: 04/19/2005 (5D19082-BI Ammonia-N (Distilled)	-	0.50	0.30	mg/l							
LCS Analyzed: 04/19/2005 (5D19082-BS1 Ammonia-N (Distilled)	10.4	0.50	0.30	mg/l	10.0		104	80-115			
Matrix Spike Analyzed: 04/19/2005 (5D19 Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	Sour 10.0	ce: IOD1	0 <b>08-01</b> 98	70-120			
Matrix Spike Dup Analyzed: 04/19/2005 (: Ammonia-N (Distilled)	5 <b>D19082-MSI</b> 10.6	0.50	0.30	mg/l	Sour 10.0	ce: IODI0	95	70-120	3	15	
Blank Analyzed: 04/20/2005 (5D20061-BL	K1)										
Perchlorate  LCS Analyzed: 04/20/2005 (5D20061-BS1)		4.0	0.80	ug/l							
Perchlorate  Matrix Spike Analyzed: 04/20/2005 (5D200)  Perchlorate	44.9 <b>061-MS1)</b> 43.9	4.0	0.80	ug/l		e: IOD13	78-02	85-115			
		4,0	0.00	ug/l	50.0	ND	88	80-120			



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly Project ID: Routine Outfall 001

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# METHOD BLANK/QC DATA

### **INORGANICS**

Analyte  Batch: 5D20061 Extracted: 04/20/05	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Matrix Spike Dup Analyzed: 04/20/2005 Perchlorate	( <b>5D20061-M</b> 45.7	(SD1) 4.0	0.80	ug/l	<b>Sou</b> : 50.0	rce: IOD: ND	1 <b>378-02</b> 91	80-120	4	20	

MWH-Pasadena/Boeing

Project ID: Routine Outfall 001

300 North Lake Avenue, Suite 1200 Pasadena, CA 91101

Pasadena, CA 91101 Report Number: IOD1251 Attention: Bronwyn Kelly

Sampled: 04/16/05 Received: 04/16/05

# **Compliance Check**

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IOD1251-01	413.1 Oil and Grease	Oil & Grease	mg/l	1.70	5.0	10.00
IOD1251-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.010	
IOD1251-01	624-Boeing 001/002 Q (Fr113+X)		ug/l	0		0.0100
IOD1251-01	624-Boeing 001/002 Q (Fr113+X)		ug/l	0	3.0 5.0	3.20
IOD1251-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0		5.00
IOD1251-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	6.0	6.50
IOD1251-01	625-Boeing 001/002 O-LL	Bis(2-ethylhexyl)phthalate	ug/l	· ·	9.0	9.10
IOD1251-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	1.20	5.0	4.00
IOD1251-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	· · · · · · · · · · · · · · · · · · ·	0	8.0	8.10
IOD1251-01	BOD	Biochemical Oxygen Demand	ug/l	•	8.0	8.20
IOD1251-01	Chloride - 300.0	Chloride	mg/l	0.39	2.0	20
IOD1251-01	Chromium VI-218.6	Chromium VI	mg/l	32	2.5	150
IOD1251-01	Chromium-200.7	Chromium	ug/l	0	1.0	8.10
IOD1251-01	Copper-200.8	Copper	ug/l	1.50	5.0	8.10
IOD1251-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	1.40	2.0	7.10
IOD1251-01	Iron-200.7	Iron	ug/l	-7	5.0	4.30
IOD1251-01	Lead-200.8	Lead	mg/l	0.012	0.040	0.30
IOD1251-01	Manganese-200.7	Manganese	ug/l	0	1.0	2.60
IOD1251-01	MBAS - SM5540-C	Surfactants (MBAS)	ug/l	15	20	50
IOD1251-01	Mercury - 245.1	Mercury	mg/l	0.043	0.10	0.50
IOD1251-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	ug/l	0	0.20	0.20
IOD1251-01	Perchlorate 314.0	Perchlorate	mg/I	0.0056	0.26	8.00
IOD1251-01	Sulfate-300.0	Sulfate	ug/l	0	4.0	6.00
IOD1251-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	120	2.5	300
IOD1251-02	624-Boeing 001/002 Q (Fr113+X)		mg/l	600	10	950
IOD1251-02		1,1-Dichloroethene	ug/l	0	3.0	3.20
	027 Doeing 001/002 Q (F1113+X)	Trichloroethene	ug/l	0	5.0	5.00



MWH-Pasadena/Boeing

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300 North Lake Avenue, Suite 1200 Pasadena, CA 91101

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Sampled: 04/16/05 Received: 04/16/05

Attention: Bronwyn Kelly

# DATA QUALIFIERS AND DEFINITIONS

B Analyte was detected in the associated Method Blank.

J Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the

Method Detection Limit (MDL). The user of this data should be aware that this data is of unknown quality.

The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).

The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).

M2 The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).

M-NR1 There was no MS/MSD analyzed with this best between the continuous states and the sample matrix interference.

M-NR1 There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike

Duplicate.

R-7 LFB/LFBD RPD exceeded the method control limit. Recovery met acceptance criteria.

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

RPD Relative Percent Difference



MWH-Pasadena/Boeing

Project ID: Routine Outfall 001

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly Report Number: IOD1251

Sampled: 04/16/05 Received: 04/16/05

### **Certification Summary**

### Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.7	Water	X	X
EPA 200.8	Water	X	X
EPA 218.6	Water	N/A	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	N/A	X
EPA 335.2	Water	X	X
EPA 350.2	Water		X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

#### **Subcontracted Laboratories**

Alta Analytical California Cert #1640

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR

Samples: IOD1251-01

Analysis Performed: EDD + Level 4

Samples: IOD1251-01

Page 1 of 2	Andrian management and the state of the stat	Field readings:	pH= 7, 9/	a see a see		24 TAT	24 TAT				24 TAT	24 TAT	Welling of the latest control of the latest	The second secon						The state of the s	-	K	3	Application and a second and a	3%	
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CHAIN O		L NPDES	er:	5	Preservative	HN03	HNO3	None	후	None		NaOH	None	None	None	None	H2SO4	None	None	Ę		Received by	Received By	Received By		
4/13/05	Project:	Boeing-SSFL NPDES Routine Outfall 001	Phone Number (626) 568-6691	Fax Number: (626) 568-6515	Sampling Date/Time	50.30					and the second second							4	08:05	Control of the Contro		urime. 1755	// Dape/Time: // 6/65 17 17.2	Date/Time:	The second secon	•
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/tical		. Suite 1200	onwyn Ke		Container Type	Poly-1L	Poly-1L	Poly-1L	VOAs			Poly-500	Paly-11				Poly-500 ml	-	1L Amber	VOAs			· ,	_		
· Anal)	%Address	ke Avenue. A 91101	ager. Bro		mple atrix	<u>a</u>	<u>a</u>				3	<u>а</u> в Э	<b>∆</b>	V Po III	<u>0. E</u>  }	A.E.	<u>a</u> E		W T	>   		SINE SINE	J.			
Del Mar Analytical version 04/13/05	Client Name/Address:	MWH-Pasadena 300 North Lake Avenue, Pasadena, CA 91101	Project Manager: Bronwyn Kelly	Sampler:	Sample Description		7				Ouffall 001	Outfall 001	Outfall 001	Outfall 001	Outfall 001	Outfall 001	Outfall 001		Outfall 001	Trip Blank		Kelinguished By	Relinquished By	Relinquished By		
إ است	<u> </u>	<b>*</b> € Ø Û.	<u>"</u>		لــــا	귀	60	<u>'</u>	1	<u> </u>	7	9	T.	1	٠	9	7	<u> </u>	4	<u>-  </u>		- *	=_	14		

		Comments		FURTHER REVIEW*** ANALYZE FOR TOTAL COMBINED RA-226 & 228 ONLY IF GROSS ALPHA	>15pcul.					Turn around Time: (check) 24 Hours 5 Days 48 Hours 10 Days	72 Hours Normal Perchlorate Only 72 Hours Metals Only 72 Hours
ANALYSIS REQUIRED										CASS 24 Hours	72 Hours Normal Perchlorate Only 72 Hours Metais Only 72 Hours
	Combined *	stoT ,shqlA s a SSS mu IV muim	······································	×	×					DateTime.	Date/Time:
			Bottle *	15A	16A						
	PDES 1 001		Preservative	None	None					Received By	Received By
Project	Boeing-SSFL NPDES Routine Outfall 001	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515	Sampling Date/Time							Date/Time:	16 (35   200 Date/Time:
	8 .	≩ie	Cont.	***	-	i de la companya de l				Y-/6-05 Date/Time:	7/16 Date
Š.	re, Suite 12 ele Harper	ronwyn K	Container Type	1-Gal	Poly- 500mi				The state of the s		
≥/Addres	sadena ke Avenu A 91101 act: Mich	lager. B	Sample Matrix	3	3		The state of the s		Verification and the second se	W.	1
Client Name/Address	MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Dei Mar Contact: Michele Harper	Project Manager. Bronwyn Kelly Sampler.	Sample Description	<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>	Outfall 001	We will see the second	William Landson William Landson	VIII CONTRACTOR CONTRA		Relinguished By	Relinquished B



May 16, 2005

MWH- Pasadena / Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101

Attention:

Bronwyn Kelly

Project:

Routine Outfall 001

Sampled: 04/16/05

Del Mar Analytical Number: IOD1251

Dear Ms. Kelly:

Alta Analytical Laboratories performed the EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	Del Mar ID	Alta ID
Outfall 001	IOD1251-01	26064-001

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022, extension 215.

Sincerely yours,

DEL MAR ANALYTICAL

Michele Harper
Project Manager

Enclosure



May 07, 2005

Alta Project I.D.: 26064

Ms. Michele Harper Del Mar Analytical, Irvine 17461 Derian Avenue, Suite 100 Irvine, CA 92614

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on April 19, 2005 under your Project Name "IOD1251". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A standard turnaround time was provided for this work.

The following report consists of a Sample Inventory (Section I), Analytical Results (Section II) and the Appendix, which contains the chain-of-custody, a list of data qualifiers and abbreviations, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at mmaier@altalab.com. Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier

Director of HRMS Services

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Also Snaketeral Endourators conduces than the regard horour uncers all the regulierments see parth by AEE (C. for those apprixed for two more than a proposal of AEE).





Section I: Sample Inventory Report

Date Received:

4/19/2005

Alta Lab. ID

Client Sample ID

26064-001

IOD1251-01



## **SECTION II**



Method Blank			Water to the same of the same		EP/	EPA Method 1613
Matrix: Aqueous		QC Batch No.: 6763		Lab Sample: 0-MB001		
Sample Size: 1.000 L		Date Extracted: 4-May-05	y-05	Date Analyzed DB-5: 6-May-05	Date Analyzed DB-225:	B-225: NA
Analyte Conc.	(ug/L)	DL a EMPC b Q	Qualifiers	Labeled Standard	%R LCL-UCL ^d	CL ^d Oualifiers
2,3,7,8-TCDD	N ON	0.00000197		IS 13C-2,3,7,8-TCDD	53.3 25	25 - 164
1,2,3,7,8-PeCDD	R	0.00000151		13C-1,2,3,7,8-PeCDD		25 - 181
1,2,3,4,7,8-HxCDD	Q	0.00000262		13C-1,2,3,4,7,8-HxCDD		32 - 141
1,2,3,6,7,8-HxCDD	Q	0.00000234		13C-1,2,3,6,7,8-HxCDD		28 - 130
1,2,3,7,8,9-HxCDD	Q	0.00000231		13C-1,2,3,4,6,7,8-HpCDD	68.0 23	23 - 140
1,2,3,4,6,7,8-HpCDD	2	0.00000194		13C-OCDD	42.8	- 157
OCDD	Q	0.00000718		13C-2,3,7,8-TCDF		24 - 169
2,3,7,8-TCDF	Q.	0.00000152		13C-1,2,3,7,8-PeCDF	50.1 24	24 - 185
1,2,3,7,8-PeCDF	QN	0.00000249		13C-2,3,4,7,8-PeCDF		- 178
2,3,4,7,8-PeCDF	R	0.00000222		13C-1,2,3,4,7,8-HxCDF		26 - 152
1,2,3,4,7,8-HxCDF	R	0.000000832		13C-1,2,3,6,7,8-HxCDF		26 - 123
1,2,3,6,7,8-HxCDF	S	0.000000842		13C-2,3,4,6,7,8-HxCDF		28 - 136
2,3,4,6,7,8-HxCDF	Q	0.00000113		13C-1,2,3,7,8,9-HxCDF		29 - 147
1,2,3,7,8,9-HxCDF	S	0.00000212		13C-1,2,3,4,6,7,8-HpCDF		28 - 143
1,2,3,4,6,7,8-HpCDF	Ð	0.00000183		13C-1,2,3,4,7,8,9-HpCDF		26 - 138
1,2,3,4,7,8,9-HpCDF	Ð	0.00000201		13C-OCDF		17 - 157
OCDF	Q	0.00000436		CRS 37Cl-2,3,7,8-TCDD		- 197
Totals				Footnotes		
Total TCDD	ND	0.00000197		a. Sample specific estimated detection limit.	ession to the major of the first property of the first plants of t	
Total PeCDD	Q.	0.00000151		b. Estimated maximum possible concentration.		Military
Total HxCDD	£	0.00000240		c. Method detection limit.		-
Total HpCDD	ON ON	0.00000194	•	d. Lower control limit - upper control limit.		***************************************
Total TCDF	N Q	0.00000152		:		
Total PeCDF	S	0.00000235				
Total HxCDF	S	0.00000117				
Total HpCDF	ΩN	0.00000191				
A					The state of the s	A CONTRACTOR OF THE PROPERTY O

JMH Analyst:

Martha M. Maier 07-May-2005 09:58 Approved By:



OPR Results			ANALYSIS OF THE PROPERTY OF TH		EPA	EPA Method 1613
Магпх: Aqueous		QC Batch No.:	6763	Lab Sample: 0-OPR001	den	
Sample Size: 1.000 L		Date Extracted:	4-May-05	Date Analyzed DB-5: 6-May-05	Date Analyzed DB-225:	ed DB-225: NA
Analyte	Spike Conc.	Spike Conc. Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	TCT-NCT
2,3,7,8-TCDD	10.0	10.7	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	56.3	25 - 164
1,2,3,7,8-PeCDD	50.0	54.8	35 - 71	13C-1,2,3,7,8-PeCDD	56.2	25 - 181
1,2,3,4,7,8-HxCDD	20.0	50.6	35 - 82	13C-1,2,3,4,7,8-HxCDD	71.4	32 - 141
1,2,3,6,7,8-HxCDD	20.0	52.5	38 - 67	13C-1,2,3,6,7,8-HxCDD	81.0	28 - 130
1,2,3,7,8,9-HxCDD	50.0	47.5	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	70.7	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	51.0	35 - 70	13C-0CDD	43.9	17 - 157
OCDD	100	106	78 - 144	13C-2,3,7,8-TCDF	54.4	24 - 169
2,3,7,8-1CDF	10.0	10.7	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	55.2	24 - 185
1,2,3,7,8-PeCDF	50.0	52.1	40 - 67	13C-2,3,4,7,8-PeCDF	54.9	21 - 178
2,3,4,7,8-recur	20.0	52.6	34 - 80	13C-1,2,3,4,7,8-HxCDF	74.9	26 - 152
1,2,3,4,7,8-HXCDF	20.0	50.6	36 - 67	13C-1,2,3,6,7,8-HxCDF	78.5	26 - 123
1,2,3,6,7,8-HXCDF	50.0	52.7	42 - 65	13C-2,3,4,6,7,8-HxCDF	77.1	28 - 136
2,3,4,6,7,8-HXCDF	50.0	51.9	35 - 78	13C-1,2,3,7,8,9-HxCDF	73.0	29 - 147
1,2,3,7,8,9-HXCDF	50.0	52.3	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	68.3	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	49.6	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	77.5	26 - 138
1,4,5,4,7,8,9-HpCDF	20.0	51.9	39 - 69	13C-OCDF	55.3	17 - 157
OCDI	100	101	. 63 - 170	CRS 37CI-2,3,7,8-TCDD	67.8	35 - 197

Analyst: JMH

Approved By:

Martha M. Maier 07-May-2005 09:58



Sample ID:	IOD1251-01	0.1			Market and the state of the sta		- Anne Carrier and Anne	EPA Method 1613
Client Data	,			Sample Data		Laboratory Data	*****	
Name:	Del Mar Au	Del Mar Analytical, Irvine IOD1351	***************************************	Matrix:	Aqueous	Lab Sample: 26064-001	Date Received:	19. Anr. 05
Date Collected	16-Apr-05			Sample Size:	0.949 L	QC Batch No.: 6763	Date Extracted:	
Time Collected:	0855	AND THE RESERVE OF THE PERSON NAMED OF THE PER				Date Analyzed DB-5: 6-May-05	Date Analyz	Date Analyzed DB-225: NA
Analyte ·	Conc.	(ug/L)	DF a	EMPCb	Qualifiers	Labeled Standard	%R LCL	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD		ND	0.000000882	382		<u>IS</u> 13C-2,3,7,8-TCDD	63.1 25	1
1,2,3,7,8-PeCDD	_	QN	0.00000161	, ,	· · · · · · · · · · · · · · · · · · ·	13C-1.2.3.7.8-PeCDD		25 181
1,2,3,4,7,8-HxCDD	QC	QN	0.00000315	5		13C-1,2,3,4,7,8-HxCDD		32 - 141
1,2,3,6,7,8-HxCDD	QC	ND	0.00000303	33		13C-1,2,3,6,7,8-HxCDD		28 - 130
1,2,3,7,8,9-HxCDD	Ö	S	0.00000291	11		13C-1,2,3,4,6,7,8-HpCDD		23 - 140
1,2,3,4,6,7,8-HpCDD	CDD	QN	0.00000286	9:		13C-OCDD		17 - 157
OCDO		S	0.0000101			13C-2,3,7,8-TCDF		24 - 169
2,3,7,8-TCDF		QN	0.00000144	4		13C-1,2,3,7,8-PeCDF		24 - 185
1,2,3,7,8-PeCDF		2	0.00000233	က္	-	13C-2,3,4,7,8-PeCDF		21 - 178
2,3,4,7,8-PeCDF		2	0.00000213	Э		13C-1,2,3,4,7,8-HxCDF		26 - 152
1,2,3,4,7,8-HxCDF	)F	S	0.000000879	62		13C-1,2,3,6,7,8-HxCDF		26 - 123
1,2,3,6,7,8-HxCDF	Ή	Q.	0.000000896	96		13C-2,3,4,6,7,8-HxCDF		28 - 136
2,3,4,6,7,8-HxCDF	¥	S S	0.00000118	∞	****	13C-1,2,3,7,8,9-HxCDF		29 - 147
1,2,3,7,8,9-HxCDF	¥	N N	0.00000232	2		13C-1,2,3,4,6,7,8-HpCDF		28 143
1,2,3,4,6,7,8-HpCDF	:DF	S	0.00000164	4		13C-1.2.3.4.7.8.9-HpCDF		26 138
1,2,3,4,7,8,9-HpCDF	:DF	R	0.00000195	2		13C-OCDF		17 . 157
OCDF		ND	0.00000736	9		CRS 37Cl-2,3,7,8-TCDD		35 - 197
Totals						Footnotes		
Total TCDD		QX	0.000000882	82		a. Sample specific estimated detection limit		
Total PeCDD		S	0.00000161	<del></del>		b. Estimated maximum possible concentration		
Total HxCDD		SD	0.00000302	2		c. Method detection limit.		
Total HpCDD		Ą	0.00000286	9		d. Lower control limit - upper control limit		
Total TCDF		S	0.00000144	w				
Total PeCDF		S	0.00000223	~				
Total HxCDF		N ON	0.00000125	<b>د</b>				
Total HpCDF		N ON	0.00000178	*				
	Annual production of the commence of the comme	**************************************			<b>-</b>	THE PROPERTY OF THE PROPERTY O	***************************************	**************************************

Analyst: JMH

Martha M. Maier 07-May-2005 09:58

Approved By:



## APPENDIX



## **DATA QUALIFIERS & ABBREVIATIONS**

В	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
H	The signal-to-noise ratio is greater than 10:1.
1	Chemical Interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
P	Homologue totals include any coplanar PCBs detected at concentrations less than the reporting limit.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated detection limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit - concentrations that correspond to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

The control limits are "interim limits only" until in-house limits are utilized.

#### **CURRENT CERTIFICATIONS**



NELAP — (Primary AA: California, Certificate No. 02102CA)

Department of the Navy

U.S. Army Corps of Engineers

U.S. EPA Region 5

Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)

Commonwealth of Kentucky — (Certificate No. 90063)

Commonwealth of Virginia — (Certificate No. 00013)

State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)

State of Arizona — (Certificate No. AZ0639)

State of Arkansas, Department of Health — (Approval granted through CA certification)

State of Arkansas, Department of Environmental Quality

State of California — (Certificate No. 1640)

State of Colorado

State of Connecticut — (Certificate No. PH-0182)

State of Florida — (Certificate No. 87456)

State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)

State of Louisiana, Department of Environmental Quality

State of Maine

State of Michigan (Certificate No. 81178087)

State of Mississippi — (Approval granted through CA certification)

State of Nevada — (Certificate No. CA413)

State of New Jersey — (Certificate No. CA003)

State of New York, Department of Health — (Certificate No. 11411)

State of North Carolina — (Certification No. 06700)

State of North Dakota, Department of Health — (Certificate No. R-078)

State of New Mexico

State of Oklahoma - (D9919)

State of Oregon - (Certificate No. CA413)

State of Pennsylvania — (Certificate No. 68-490)

State of South Carolina — (Certificate No. 87002001)

State of Tennessee — (Certificate No. 02996)

State of Texas — (Certificate No. TX247-1000A

State of Utah — (Certificate No. E-201)

State of Washington - (Certification No. C091)

State of Wisconsin — (Certificate No. 998036160)

State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)



17461 Derian Ave. Stifte 100, Irvine, CA 92614 1014 E. Cooley Dr., Suite A, Cotton, CA 92324

9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 9830 South 61st Street, Suite B-120, Phoenix, AZ 85044

44 Ph (460) / 20 Ph (702) 76

Ph (949) 261-1022

Fax (909) 370-1046

(619) 505-9596 Fax (619) 505-96

# **SUBCONTRACT ORDER - PROJECT # IOD1251**

	G LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine		Alta Analytical
17461 Derian Avenue. Suite	100	1104 Windfield Way
Irvine, CA 92614		Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640  Alta Analytical 2 606 4  C 7 °C
Phone: (949) 261-1022		Phone :(916) 933-1640
Fax: (949) 261-1228		Fax: (916) 673-0106
Project Manager: Michele Ha	rper	
Standard TAT is requested	unless specific due date is requested	=> Due Date: Initials:
Analysis	Expiration	Comments
	A.A.p. atton	Comments
Sample ID: IOD1251-01 Wat	er Sampled: 04/16/05 08:55	Instant Nofication
1613-Dioxin-HR	04/23/05 08:55	J flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	05/14/05 08:55	Excel EDD email to pm, Include Std logs for Lvl IV
Containers Supplied:	•	
1 L Amber (IOD1251-01G)	~	
1 L Amber (IOD1251-01H)		
		· · · · · · · · · · · · · · · · · · ·

			 		SAMPLE	INT	EGRI'	TY:				
All containers intact: Custody Seals Present:		Yes Yes A	 No .	•	: labels/COC agree: s Preserved Properly:		Yes Yes		No No	Samples Received On Ice:: Samples Received at (temp):	□ Yes	□ No
- Samu	De la companya de la	$\sqrt{}$	1/	-18-05	1700	Be	the	ik	9/	Benedict 4/19	los	0858
Released By		)		Date	Time	Recei	ved By	ý		Date L	T	ime
Released By	************			Date	Time	Recei	ved B	y		_ Date	Ţ	ime

Attachment 10.B.1

#### SAMPLE LOG-IN CHECKLIST

260/04

1. Date Samples Arrived: 4/19/05 0852 Initials:	Location	on: W	R-	7
2. Time / Date logged in: 1770 4/19/05 Initials:	Locati	on: W	R-7	)
3. Samples Arrived By: (circle) FedEx UPS World Courier	Other:			
4. Shipping Preservation: (circle) Ice Blue Ice Dry Ice / No	ne Temp °C O -	<u> </u>	•	
5. Shipping Container(s) Intact"? If not, describe condition in comm	ent section.	YES	NO	NA
Shipping Container(s) Custody Seals Present?     Intact? If not intact, describe condition in comment section.				
7. Shipping Documentation Present? (circle) Shipping Label Tracking Number 7929 0047 2266	Airbill			
Sample Custody Seal(s) Present? No. of Seals or Intact? If not intact, describe condition in comment section.	Seal No.		<b>✓</b>	/
9. Sample Container Intact? If no, indicate sample condition in com	ment section.	\ \ \		
10. Chain of Custody (COC) or other Sample Documentation Present	t?	1//		
11. COC/Documentation Acceptable? If no, complete COC Anomaly	Form.	1		
12. Shipping Container (circle): ALTA Client Retain	or Return or D	isposed		
13. Container(s) and/or Bottle(s) Requested?			1	
	eservation? Y or N or None Noted			~

ALTA Analytical Laboratory El Dorado Hills, CA 95762

# CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

Suite 500 Lakewood, CO 80226 Lakoratory Alta Reviewer K. Shadowlight Analysis/Method Dioxins  ACTION ITEMS*  1. Case Narrative Deficiencies  2. Out of Scope Analyses Analyses Not Conducted  4. Missing Hardcopy Deliverables  5. Incorrect Hardcopy Deliverables  6. Deviations from Analysis Protocol, e.g., Holding Times GG/MS Tune/Inst. Performance Calibration Method blanks Surrogates Marrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance		MEC Earth & Environmenta	1	Package ID	T711DF45
Lakewood, CO 80226 Laboratory Alta Reviewer K. Shadowlight Analysis/Method Dioxins  ACTION ITEMS*  1. Case Narrative Deficiencies  2. Out of Scope Analyses  3. Analyses Not Conducted  4. Missing Hardcopy Deliverables  5. Incorrect Hardcopy Deliverables  6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Marrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation			ard	Task Order	
Laboratory Alta Reviewer K. Shadowlight Reviewer K. Shadowlight Analysis/Method Dioxins  ACTION ITEMS*  1. Case Narrative Deficiencies  2. Out of Scope Analyses  3. Analyses Not Conducted  4. Missing Hardcopy Deliverables  5. Incorrect Hardcopy Deliverables  6. Deviations from Analysis Protocol, e.g., *Detect below the EPA 1613 Minimum level  Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation				SDG No.	IOD1172, IOD1251
Reviewer K. Shadowlight Reviewer K. Shadowlight Analysis/Method Dioxins  ACTION ITEMS*  1. Case Narrative Deficiencies  2. Out of Scope Analyses  3. Analyses Not Conducted  4. Missing Hardcopy Deliverables  5. Incorrect Hardcopy Deliverables  6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Marrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation  Date: May 11, 2005 Reviewer's Signature.  Reviewer's Signat	La				
Analysis/Method Dioxins  ACTION ITEMS*  1. Case Narrative Deficiencies  2. Out of Scope Analyses  3. Analyses Not Conducted  4. Missing Hardcopy Deliverables  5. Incorrect Hardcopy Deliverables  6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation  Reviewer's Signature Reviewer					
ACTION ITEMS*  1. Case Narrative Deficiencies  2. Out of Scope Analyses  3. Analyses Not Conducted  4. Missing Hardcopy Deliverables  5. Incorrect Hardcopy Deliverables  6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation					
1. Case Narrative Deficiencies  2. Out of Scope Analyses  3. Analyses Not Conducted  4. Missing Hardcopy Deliverables  5. Incorrect Hardcopy Deliverables  6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation		Analysis/Method Dioxins		I LKS Gai	
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4. Missing Hardcopy Deliverables  5. Incorrect Hardcopy Deliverables  6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation		· maryses			
4. Missing Hardcopy Deliverables  5. Incorrect Hardcopy Deliverables  6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation		··			
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5. Incorrect Hardcopy Deliverables  6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation					
5. Incorrect Hardcopy Deliverables  6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation					
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Deliverables  6. Deviations from Analysis Protocol, e.g.,  Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation  Quantitation  Quantitation  Qualifications were assigned for the following:  * Detect below the EPA 1613 Minimum level					
Deliverables  6. Deviations from Analysis Protocol, e.g.,  Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation  Quantitation  Quantitation  Qualifications were assigned for the following:  * Detect below the EPA 1613 Minimum level					
Deliverables  6. Deviations from Analysis Protocol, e.g.,  Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation  Quantitation  Quantitation  Qualifications were assigned for the following:  * Detect below the EPA 1613 Minimum level	5.	Incorrect Hardcopy			
Protocol, e.g.,  Holding Times  GC/MS Tune/Inst. Performance  Calibration  Method blanks  Surrogates  Matrix Spike/Dup LCS  Field QC  Internal Standard Performance  Compound Identification and  Quantitation  * Detect below the EPA 1613 Minimum level  * Detect below the EPA 1613 Minimum level  * Detect below the EPA 1613 Minimum level			***************************************		
Protocol, e.g.,  Holding Times  GC/MS Tune/Inst. Performance  Calibration  Method blanks  Surrogates  Matrix Spike/Dup LCS  Field QC  Internal Standard Performance  Compound Identification and  Quantitation  * Detect below the EPA 1613 Minimum level  * Detect below the EPA 1613 Minimum level  * Detect below the EPA 1613 Minimum level	6.	<b>Deviations from Analysis</b>	Qualifications were assigned	Frank C. H.	
Holding Times  GC/MS Tune/Inst. Performance Calibration  Method blanks Surrogates  Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation			* Detect below the EPA 161	3 Minimum land	
GC/MS Tune/Inst, Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation			Detect below the LAA 101.	o ivinimum level	
Calibration  Method blanks  Surrogates  Matrix Spike/Dup LCS  Field QC  Internal Standard Performance  Compound Identification and  Quantitation					
Surrogates  Matrix Spike/Dup LCS  Field QC  Internal Standard Performance  Compound Identification and  Quantitation				· · · · · · · · · · · · · · · · · · ·	
Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation		Method blanks			
Field QC Internal Standard Performance Compound Identification and Quantitation		Surrogates			
Internal Standard Performance  Compound Identification and  Quantitation		Matrix Spike/Dup LCS			
Compound Identification and Quantitation	j	Field QC			
Quantitation	1	Internal Standard Performance			
	(	Compound Identification and			
System Performance	(	Quantitation			
COMMENTS ^b	COM	MENTS ^b			
			£	***************************************	
Subcontracted analytical laboratory is not meeting contract and/or method requirements.	^a Subc	ontracted analytical laboratory is not or	neeting contract and/or method requires	Denfs	
b Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	" Diffe	rences in protocol have been adopted b	y the laboratory but no action against t	he laboratory is required.	

# Data Qualifier Reference Table

Ovalie		
Qualifier	Organics	Inorganies
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
IJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

# Qualification Code Reference Table

Qualifier	Organics	Inorganics
Н	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards us for the calibration was incorrect
С	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within conti
В	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was n within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
1	Not applicable.	ICP Serial Dilution %D were not with
A	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
4	Presumed contamination from trip blank.	Not applicable.
	False positive – reported compound was not present. Not applicable.	
	False negative – compound was present but not reported.	Not applicable.
	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
	Reported result or other information was incorrect.	Reported result or other information was incorrect.
	TIC identity or reported retention time has been changed.	Not applicable.
	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
√Q	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



# DATA VALIDATION REPORT

# NPDES Monitoring

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: IOD1172, IOD1251

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

**NPDES** SDG No.:IOD1172, IOD1251 Analysis: D/F

### 1. INTRODUCTION

Task Order Title:

NPDES Monitoring

Contract Task Order #:

313150010

Sample Delivery Group #:

IOD1172, IOD1251

Project Manager:

B. McIlvaine

Matrix:

Water

2

Analysis:

Dioxins/Furans

QC Level:

Level IV

No. of Samples:

No. of Reanalyses/Dilutions:

Reviewer:

K. Shadowlight

Date of Review:

May 11, 2005

1

The samples listed in Table 1 were validated based on the guidelines outlined in the AMEC Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 1), EPA Method 1613, and the National National Functional Guidelines For Chlorinated Dioxin/Furan Data Review (8/02). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Project: NPDES SDG No.:IOD1172, IOD1251 Analysis: D/F

DATA VALIDATION REPORT

# Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 001	IOD1251-01	26064-001	water	1613
Outfall 002	IOD1172-01	26065-001	water	1613

Project: SDG No.:10D1172, 10D1251 Analysis: D/F

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

# 2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The samples were shipped to Alta for dioxin/furan analysis and were received below the temperature limits of 4°C ±2°C at 0.7°C; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheet, the samples were received intact and in good condition at both laboratories. No qualifications were required.

#### 2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The cooler received by Alta had custody seals present and intact; however, custody seals were not present on the sample containers. The EPA IDs were added to the sample result summaries by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The samples were extracted and analyzed within one year of collection. No qualifications were required.

## 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

### 2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

## 2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

**NPDES** SDG No.:IOD1172, IOD1251 Analysis:

#### 2.3 CALIBRATION

#### 2.3.1 Initial Calibration

The initial calibration was analyzed 04/23/05. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs ≤20% for the 16 native compounds (calibration by isotope dilution) and ≤35% for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

#### 2.4 BLANKS

One method blank (6763-MB001) was extracted and analyzed with the samples in these SDGs. There were no target compound detects reported in the method blank. A review of the method blank raw data and chromatograms indicated no false negatives. No qualifications were required.

# 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One Ongoing Precision Recovery (OPR) sample (6763-OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

#### 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

## 2.7.1 Field Blanks and Equipment Rinsates

The samples in these SDGs had no associated field QC samples. No qualifications were required.

#### 2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

### 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

#### 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

# 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detect above the low point of the calibration curve but below the EPA Method 1613 minimum level was denoted by the laboratory with an "A," flag and was qualified as estimated, "J." The results and reporting limits were reported in ug/L. No further qualifications were required.

	Sample ID: IOD1251-01	Dut fall	3 ==				The state of the s
	Client Data		1				EPA Method 1613
	Name: Del Mar Analytical Irvino	Luno		Sample Data		Laboratory Data	THE COLUMN TO THE PROPERTY OF
		200		Matrix:	Aqueous	Lab Sample: 26064-001	Date Received:
	Date Collected: 16-Apr-05 Time Collected: 0855			Sample Size:	0.949 L	_	Date Extracted: 4-May-05
	A. M. A. C.					Date Analyzed DB-5: 6-May-05	Date Analyzed DB-225: NA
W.	Analyte Conc. (ug/L)		DI a	EMPCb	Qualifiers	Labeled Standard	proprieta d'é
	2,3,7,8-TCDD ND		0.000000882	182		300000000000000000000000000000000000000	
	1,2,3,7,8-PeCDD ND		0.00000161	-			63.1 25 - 164
	Q		0.000003			13C-1,2,3,7,8-PeCDD	64.0 25 - 181
			0.0000000			13C-1,2,3,4,7,8-HxCDD	74.9 32 - 141
			0.000000			13C-1,2,3,6,7,8-HxCDD	86.9 28 - 130
	Q		0.0000000 0.0000000			13C-1,2,3,4,6,7,8-HpCDD	73.9 23 140
			0.0000020	9		13C-OCDD	44.7 17-157
	2,3,7,8-TCDF	-	0.0000101	•		13C-2,3,7,8-TCDF	63.2 24 - 169
	OF.		4.0000014	<b>†</b> (		13C-1,2,3,7,8-PeCDF	60.9 24 - 185
			0.000000.0 0.000000.0	- T		13C-2,3,4,7,8-PeCDF	60.0 21 - 178
	)F		0.00000213	ر ا		13C-1,2,3,4,7,8-HxCDF	81.8 26 - 152
			0.000000000000000000000000000000000000	× × ×		13C-1,2,3,6,7,8-HxCDF	86.3 26 - 123
			0.0000000	2 2		13C-2,3,4,6,7,8-HxCDF	82.1 28 - 136
****			0.0000073	· ~		13C-1,2,3,7,8,9-HxCDF	78.3 29 - 147
	<u> </u>	· ~	0.000016			13C-1,2,3,4,6,7,8-HpCDF	71.9 28 - 143
			0.0000000	<b>.</b>		13C-1,2,3,4,7,8,9-HpCDF	82.4 26 - 138
	OCDF	0	0.00000736		**************************************	CRS 27G 2.7 G MODE	
	Totals					D. C.	72.6 35 - 197
<u> </u>	Total TCDD ND	0	0.00000082	C:		roulintes	
	Total PeCDD ND		0.0000161	į		a. Sample specific estimated detection limit.	
	Total HxCDD ND	° •	0.00000101 0.00000101			b. Estimated maximum possible concentration.	
	Total HpCDD ND	, c	200000000			c. Method detection limit.	
	Total TCDF ND	0	0.00000144			d. Lower control limit - upper control limit.	
	Total PeCDF ND	0	0.00000223				
	Total HxCDF ND	Ö	0.00000125		•		
	Total HpCDF ND	Ö	0.00000178		***************************************		
, J	Analyst: JMH						
	All Comments and Comments					Approved By	

5 300

Approved By:

TINET, T

Martha M. Maier 07-May-2005 09:58

Project 26064

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	10D1172-01 ()4+ (all 00)	400			manifest of the second of the	EPAN	EPA Method 1613
Cuent Data		Sample Date	***************************************	***************************************			
	Del Mar Analytical, Irvine	THE TOTAL TOTAL		Laboratory Data			
	10D1172	Matrix	Aqueons	Lab Sample: 26065-001	-001 Date Received:	ceived:	10 A Of
Date Collected: 15.	15-Apr-05	Sample Size:	0.948 L	-		racted:	4-May-05
	ł			Date Analyzed DB-5: 6-May-05		Date Analyzed DB-225; NA	25: NA
A I A I A	Conc. (ug/L)	DL a EMPC	Qualifiers	Labeled Standard	%R	p 1311 13 1	917
2,3,7,8-TCDD	QN	0.00000142		Section Sectio	NO.	- 1	Unaimers
1,2,3,7,8-PeCDD	S	0.00000133			9.19	25 - 164	
1,2,3,4,7,8-HxCDD	N	0.00000328		13C-1,2,3,7,8-PeCDD	63.8	25 - 181	
1,2,3,6,7,8-HxCDD	2	0.0000000		13C-1,2,3,4,7,8-HxCDD	68.5	32 - 141	
1,2,3,7,8,9-HxCDD		0.0000049		13C-1,2,3,6,7,8-HxCDD	75.9	28 - 130	
1234678-HnCDD		0.00000294		13C-1,2,3,4,6,7,8-HpCDD	75.3	23 - 140	
NO OCH		0.00000551		13C-OCDD	62.9	17.157	
********	0.0000262		A	13C-2,3,7,8-TCDF	817	24 160	
4,2,7,6,1CDF	2	0.00000178	***********	13C-12378-PeCDE	0.10	24 - 109	
1,2,3,7,8-PeCDF	Q.	0.00000205		120.24.40.410.12	00.0	24 - 185	
2,3,4,7,8-PeCDF	Q	0.00000196		130 131 101 101 11 11 11 11 11 11 11 11 11 11	28.8	21 - 178	
1,2,3,4,7,8-HxCDF	QN	0.000000728		13C-1,2,3,4,7,8-HXCDF	73.8	26 - 152	
1,2,3,6,7,8-HxCDF	S	0.000000713	:	13C-1,2,3,6,7,8-HxCDF	76.0	26 - 123	
2,3,4,6,7,8-HxCDF	QN	0.000000852		13C-2,3,4,6,7,8-HxCDF	77.8	28 - 136	
1.2,3,7,8,9-HxCDF	QN	0.00000162		13C-1,2,3,7,8,9-HxCDF	73.4	29 - 147	
1,2,3,4,6,7,8-HpCDF	2	0.00000161		13C-1,2,3,4,6,7,8-HpCDF	75.7	28 - 143	
1,2,3,4,7,8,9-HpCDF		0.0000104		13C-1,2,3,4,7,8,9-HpCDF	80.2	26 - 138	
OCDF		0.00000130		13C-OCDF	69.2	17 - 157	
Totals	The state of the s	v.cocco311		CKS 37CI-2,3,7,8-TCDD	73.5	35 - 197	
Total Ton	THE PROPERTY OF THE PROPERTY O			Footnotes			
Total Door		0.00000142		a. Sample specific estimated detection limit	111		THE PERSON WHEN THE PERSON WHE
Total ret. DD	2	0.00000133		5 Estimated maximum			
Total HxCDD	S	0.00000306		Method deserving their	tton.		
Total HpCDD	S	0.00000531		A S TOTAL WINDS AND A STREET,			
Total TCDF	QN	0.00000178		a. Lower control limit - upper control limit.	<u>.</u>		
Total PeCDF	ON	0.00000200					
Total HxCDF	2	0.00000039					
T. 1 17 Out 1			_				-

3 8 3

Analyst: JMH

Martha M. Maier 07-May-2005 10:07 Approved By:

AMES VALIDATED EVEL IN



## CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA AMEC Earth & Environmental

Package ID T711VO103

550 South Wadsworth Boulevan	d Tackage ID 1/11 VOIUS
Suite 500	185k Older 313130010
Lakewood, CO 80226	SDG No. IOD1251
	No. of Analyses 2
Laboratory Del Mar	Date: May 23, 2005
Reviewer M. Poko	
Analysis/Method Volatiles	M. finns
ACTION ITEMS*	
1. Case Narrative	
Deficiencies	
2. Out of Scope	
Analyses	
· Amazy Gud	
3. Analyses Not Conducted	
3. Analyses Not Conducted	
4 34	
4. Missing Hardcopy	
Deliverables	
5. Incorrect Hardcopy	
Deliverables	
6. Deviations from Analysis	Qualification required for calibration outlier.
Protocol, e.g.,	
Holding Times	
GC/MS Tune/Inst. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and	
Quantitation	
System Performance	
OMMENTS ^b	
Subcontracted analytical laboratory is not me	eting contract and/or method requirements.
Differences in protocol have been adopted by	the laboratory but no action against the laboratory is required.



# DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOD1251

Prepared by

AMEC Denver Operations 550 South Wadsworth Boulevard, Suite 500 Lakewood, Colorado 80226

SDG: Analysis: **NPDES** 

VOC

IOD1251

#### 1. INTRODUCTION

Task Order Title:

**NPDES Monitoring** 

Contract Task Order #:

313150010 IOD1251

SDG#:

B. McIlvaine

Project Manager: Matrix:

Water

Analysis:

Volatiles

QC Level:

Level IV

No. of Samples:

2

No. of Reanalyses/Dilutions:

0 M. Pokorny

Reviewer: Date of Review:

May 23, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2), EPA Method 624, SW846 Method 8260B, and the National Functional Guidelines For Organic Data Review (2/94). Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Project: SDG: Analysis:

NPDES IOD1251 VOC

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 001	Outfall 001	IOD1251-01	water	624
Trip Blank	Trip Blank	IOD1251-02	water	624
	Outfall 001	Outfall 001 Outfall 001	Outfall 001 Outfall 001 IOD1251-01	Outfall 001 Outfall 001 IOD1251-01 water  Trip Blank Trip Blank IOD1251-02

**NPDES** IOD1251 Analysis:

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

## 2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. The samples were properly preserved. The COC noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC was signed and dated by both field and laboratory personnel. The COC accounted for the analyses presented in this SDG. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

#### 2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

#### 2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation reports were consistent with those specified in EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection time. The BFB summary report was verified from the raw data and no discrepancies between the summary report and the raw data were noted. No qualifications were required.

#### 2.3 CALIBRATION

One initial calibration dated 04/22/05 was associated with this SDG. The average RRFs were ≥0.05 for the target compounds listed on the sample result summaries. The %RSDs were ≤35% for all applicable target compounds. One continuing calibration dated 04/29/05 was associated with the sample analyses in this SDG. The %D for trichlorofluoromethane exceeded 20% in the continuing calibration; therefore, the nondetect result for trichlorofluoromethane was qualified as estimated, "UJ," in sample Outfall 001. No qualifications were required for the Trip Blank. The RRFs were ≥0.05 for the target compounds listed on the sample result summaries. A representative number of %RSDs and average RRFs from the initial calibration, and %Ds and RRFs from the continuing calibration were recalculated from the raw data, and no calculation or transcription errors were found. No further qualifications were required.

#### 2.4 BLANKS

One water method blank (5D29021-BLK1) was associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

# 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water blank spike (5D29021-BS1) was associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

### 2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

## 2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed for this SDG. Evaluation of method accuracy was based on blank spike results. No qualifications were required.

#### 2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site sample. Following are findings associated with field QC samples:

#### 2.8.1 Trip Blanks

Sample Trip Blank was the trip blank associated with this SDG. There were no target compounds detected above the MDLs in the trip blank. No qualifications were required.

## 2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

#### 2.8.3 Field Duplicates

There were no field duplicate samples associated with this SDG.

## 2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in this SDG were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and  $\pm0.50$  minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

## 2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for 15 volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

# 2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standard and by the MDL study. As there were no sample detects in this SDG, compound quantitation was verified by recalculating a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in µg/L (ppb). No calculation or transcription errors were noted. No qualifications were required.

## 2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for this SDG. No qualifications were required.

### 2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.