SDG 8696
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract IUK2640

ABOUT THE DATA SUMMARY SECTION

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

LAB SAMPLE SUMMARY

SDG 8696
Contact Joseph Verville

Client Test America, Inc.
Contract IUK2640

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S111064-01	IUK2640-02	Boeing - SSFL	WATER			IUK2640	11/20/11 17:50
S111064-02	IUK2640-03 (TRIP-BLANK)	Boeing - SSFL	WATER			IUK2640	11/21/11 00:00
S111064-03	Lab Control Sample		WATER				
S111064-04	Method Blank		WATER				
S111064-05	Duplicate (S111064-01)	Boeing - SSFL	WATER				11/20/11 17:50

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

QC SUMMARY

SDG 8696
Contact Joseph Verville

Client Test America, Inc.
Contract IUK2640

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8696	IUK2640	IUK2640-02	WATER		10.0 L			S111064-01	8696-001
		IUK2640-03 (TRIP-BLANK)	WATER		10.0 L			S111064-02	8696-002
		Method Blank	WATER					S111064-04	8696-004
		Lab Control Sample	WATER					S111064-03	8696-003
		Duplicate (S111064-01)	WATER		10.0 L			S111064-05	8696-005

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

PREP BATCH SUMMARY

SDG 8696
Contact Joseph Verville

Client Test America, Inc.
Contract IUK2640

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Beta Counting												
AC	WATER	Radium-228 in Water	7281-188	10.4	2			1	1	1/1		
SR	WATER	Strontium-90 in Water	7281-188	10.4	2			1	1	1/1		
Gas Proportional Counting												
80A	WATER	Gross Alpha in Water	7281-188	20.6	2			1	1	1/1		
80B	WATER	Gross Beta in Water	7281-188	11.0	2			1	1	1/1		
Gamma Spectroscopy												
GAM	WATER	Gamma Emitters in Water	7281-188	7.0	2			1	1	1/1		
Kinetic Phosphorimetry, ug												
U_T	WATER	Uranium, Total	7281-188		2			1	1	1/1		
Liquid Scintillation Counting												
H	WATER	Tritium in Water	7281-188	10.0	1			1	1	1/1		
Radon Counting												
RA	WATER	Radium-226 in Water	7281-188	16.4	2			1	1	1/1		

Blank, LCS, Duplicate and Spike planchets are those in the same preparation batch as some Client sample.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

LAB WORK SUMMARY

SDG 8696
Contact Joseph Verville

Client Test America, Inc.
Contract IUK2640

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY / SAS no	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
S111064-01	IUK2640-02		8696-001	80A/80		12/05/11	12/07/11	KWP	Gross Alpha in Water
11/20/11	Boeing - SSFL	WATER	8696-001	80B/80		12/05/11	12/07/11	KWP	Gross Beta in Water
	IUK2640		8696-001	AC		12/06/11	12/07/11	KWP	Radium-228 in Water
			8696-001	GAM		11/29/11	12/01/11	CSS	Gamma Emitters in Water
			8696-001	H		12/06/11	12/08/11	KWP	Tritium in Water
			8696-001	RA		12/06/11	12/08/11	KWP	Radium-226 in Water
			8696-001	SR		12/02/11	12/08/11	KWP	Strontium-90 in Water
			8696-001	U_T		12/01/11	12/01/11	CSS	Uranium, Total
S111064-02	IUK2640-03 (TRIP-BLANK)		8696-002	80A/80		12/05/11	12/07/11	KWP	Gross Alpha in Water
11/21/11	Boeing - SSFL	WATER	8696-002	80B/80		12/05/11	12/07/11	KWP	Gross Beta in Water
	IUK2640		8696-002	AC		12/06/11	12/07/11	KWP	Radium-228 in Water
			8696-002	GAM		11/29/11	12/01/11	CSS	Gamma Emitters in Water
			8696-002	RA		12/06/11	12/08/11	KWP	Radium-226 in Water
			8696-002	SR		12/02/11	12/08/11	KWP	Strontium-90 in Water
			8696-002	U_T		12/01/11	12/01/11	CSS	Uranium, Total
S111064-03	Lab Control Sample		8696-003	80A/80		12/06/11	12/07/11	KWP	Gross Alpha in Water
		WATER	8696-003	80B/80		12/06/11	12/07/11	KWP	Gross Beta in Water
			8696-003	AC		12/06/11	12/07/11	KWP	Radium-228 in Water
			8696-003	GAM		11/30/11	12/01/11	CSS	Gamma Emitters in Water
			8696-003	H		12/06/11	12/08/11	KWP	Tritium in Water
			8696-003	RA		12/06/11	12/08/11	KWP	Radium-226 in Water
			8696-003	SR		12/02/11	12/08/11	KWP	Strontium-90 in Water
			8696-003	U_T		12/01/11	12/01/11	CSS	Uranium, Total
S111064-04	Method Blank		8696-004	80A/80		12/05/11	12/07/11	KWP	Gross Alpha in Water
		WATER	8696-004	80B/80		12/05/11	12/07/11	KWP	Gross Beta in Water
			8696-004	AC		12/06/11	12/07/11	KWP	Radium-228 in Water
			8696-004	GAM		11/30/11	12/01/11	CSS	Gamma Emitters in Water
			8696-004	H		12/06/11	12/08/11	KWP	Tritium in Water
			8696-004	RA		12/06/11	12/08/11	KWP	Radium-226 in Water
			8696-004	SR		12/02/11	12/08/11	KWP	Strontium-90 in Water
			8696-004	U_T		12/01/11	12/01/11	CSS	Uranium, Total

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

WORK SUMMARY, cont.

SDG 8696
Contact Joseph Verville

Client Test America, Inc.
Contract IUK2640

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY	SAS no	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
S111064-05	Duplicate (S111064-01)			8696-005	80A/80		12/05/11	12/07/11	KWP	Gross Alpha in Water
11/20/11	Boeing - SSFL		WATER	8696-005	80B/80		12/05/11	12/07/11	KWP	Gross Beta in Water
				8696-005	AC		12/06/11	12/07/11	KWP	Radium-228 in Water
				8696-005	GAM		11/30/11	12/01/11	CSS	Gamma Emitters in Water
				8696-005	H		12/06/11	12/08/11	KWP	Tritium in Water
				8696-005	RA		12/06/11	12/08/11	KWP	Radium-226 in Water
				8696-005	SR		12/02/11	12/08/11	KWP	Strontium-90 in Water
				8696-005	U_T		12/01/11	12/01/11	CSS	Uranium, Total

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAS no	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
80A/80		Gross Alpha in Water	900.0	2			1	1	1	5
80B/80		Gross Beta in Water	900.0	2			1	1	1	5
AC		Radium-228 in Water	904.0	2			1	1	1	5
GAM		Gamma Emitters in Water	901.1	2			1	1	1	5
H		Tritium in Water	906.0	1			1	1	1	4
RA		Radium-226 in Water	903.1	2			1	1	1	5
SR		Strontium-90 in Water	905.0	2			1	1	1	5
U_T		Uranium, Total	D5174	2			1	1	1	5
TOTALS				15			8	8	8	39

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

8696-004 **Method Blank**

METHOD BLANK

SDG	8696	Client	Test America, Inc.
Contact	Joseph Verville	Contract	IUK2640
Lab sample id	S111064-04	Client sample id	Method Blank
Dept sample id	8696-004	Material/Matrix	WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	0.070	0.28	0.504	3.00	U	80A
Gross Beta	12587472	-0.245	0.49	0.833	4.00	U	80B
Tritium	10028178	-5.17	8.5	14.8	500	U	H
Radium-226	13982633	-0.053	0.36	0.674	1.00	U	RA
Radium-228	15262201	-0.138	0.22	0.609	1.00	U	AC
Strontium-90	10098972	-0.216	0.38	0.928	2.00	U	SR
Uranium, Total		0	0.007	0.017	1.00	U	U_T
Potassium-40	13966002	U		35.2	25.0	U	GAM
Cesium-137	10045973	U		1.88	20.0	U	GAM

QC-BLANK #80642

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	12/12/11

EBERLINE ANALYTICAL

SDG 8696

8696-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG 8696 | Client Test America, Inc.

Contact Joseph Verville | Contract IUK2640

Lab sample id S111064-03 | Client sample id Lab Control Sample

Dept sample id 8696-003 | Material/Matrix WATER

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	39.1	2.3	0.616	3.00		80A	33.7	1.3	116	75-125	70-130
Gross Beta	27.1	1.3	1.13	4.00		80B	28.6	1.1	95	88-112	70-130
Tritium	209	14	14.6	500	J	H	226	9.0	92	88-112	80-120
Radium-226	50.1	2.7	0.727	1.00		RA	55.7	2.2	90	84-116	80-120
Radium-228	5.92	0.42	0.614	1.00		AC	5.55	0.22	107	86-114	60-140
Strontium-90	19.4	1.5	0.669	2.00		SR	18.9	0.76	103	86-114	80-120
Uranium, Total	64.2	7.3	0.168	1.00		U_T	62.5	2.5	103	88-112	80-120
Cobalt-60	133	3.8	1.85	10.0		GAM	136	5.4	98	92-108	80-120
Cesium-137	147	3.5	2.34	20.0		GAM	148	5.9	99	92-108	80-120

QC-LCS #80641

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

8696-005 IUK2640-02

DUPLICATE

SDG 8696
Contact Joseph Verville

DUPLICATE
Lab sample id S111064-05
Dept sample id 8696-005

ORIGINAL
Lab sample id S111064-01
Dept sample id 8696-001
Received

Client Test America, Inc.
Contract IUK2640

Client sample id IUK2640-02
Location/Matrix Boeing - SSFL WATER
Collected/Volume 11/20/11 17:50 10.0 L
Chain of custody id IUK2640

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	0.508	0.26	0.299	3.00	J	80A	0.368	0.19	0.209	J	32	119	0.8
Gross Beta	1.45	0.54	0.820	4.00	J	80B	1.64	0.60	0.912	J	12	82	0.5
Tritium	-39.2	88	152	500	U	H	-20.4	89	152	U	-		0.3
Radium-226	0.400	0.43	0.698	1.00	U	RA	0.392	0.46	0.747	U	-		0
Radium-228	0.042	0.32	0.753	1.00	U	AC	0.400	0.25	0.602	U	-		1.8
Strontium-90	-0.067	0.34	0.781	2.00	U	SR	0.039	0.37	0.798	U	-		0.4
Uranium, Total	0.379	0.042	0.017	1.00	J	U_T	0.365	0.040	0.017	J	4	23	0.5
Potassium-40	U		22.5	25.0	U	GAM	U		18.0	U	-		0.3
Cesium-137	U		1.08	20.0	U	GAM	U		1.25	U	-		0.2

QC-DUP#1 80643

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

8696-001 IUK2640-02

DATA SHEET

SDG	8696	Client	Test America, Inc.
Contact	Joseph Verville	Contract	IUK2640
Lab sample id	S111064-01	Client sample id	IUK2640-02
Dept sample id	8696-001	Location/Matrix	Boeing - SSFL WATER
Received		Collected/Volume	11/20/11 17:50 10.0 L
		Chain of custody id	IUK2640

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	0.368	0.19	0.209	3.00	J	80A
Gross Beta	12587472	1.64	0.60	0.912	4.00	J	80B
Tritium	10028178	-20.4	89	152	500	U	H
Radium-226	13982633	0.392	0.46	0.747	1.00	U	RA
Radium-228	15262201	0.400	0.25	0.602	1.00	U	AC
Strontium-90	10098972	0.039	0.37	0.798	2.00	U	SR
Uranium, Total		0.365	0.040	0.017	1.00	J	U_T
Potassium-40	13966002	U		18.0	25.0	U	GAM
Cesium-137	10045973	U		1.25	20.0	U	GAM

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	12/12/11

EBERLINE ANALYTICAL

SDG 8696

8696-002

IUK2640-03 (TRIP-BLANK)

DATA SHEET

SDG 8696 | Client Test America, Inc.
Contact Joseph Verville | Contract IUK2640

Lab sample id S111064-02 | Client sample id IUK2640-03 (TRIP-BLANK)
Dept sample id 8696-002 | Location/Matrix Boeing - SSFL WATER
Received | Collected/Volume 11/21/11 00:00 10.0 L
Chain of custody id IUK2640

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	0.018	0.11	0.246	3.00	U	80A
Gross Beta	12587472	-0.153	0.44	0.757	4.00	U	80B
Radium-226	13982633	0.294	0.42	0.708	1.00	U	RA
Radium-228	15262201	-0.166	0.20	0.578	1.00	U	AC
Strontium-90	10098972	0.227	0.40	0.809	2.00	U	SR
Uranium, Total		0	0.007	0.017	1.00	U	U_T
Potassium-40	13966002	U		13.2	25.0	U	GAM
Cesium-137	10045973	U		1.15	20.0	U	GAM

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

LAB METHOD SUMMARY

RADIUM-228 IN WATER

BETA COUNTING

Test AC Matrix WATER
SDG 8696
Contact Joseph Verville

Client Test America, Inc.
Contract IUK2640

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Radium-228	
Preparation batch 7281-188						
S111064-01			8696-001	IUK2640-02	U	
S111064-02			8696-002	IUK2640-03 (TRIP-BLANK)	U	
S111064-03			8696-003	Lab Control Sample	ok	
S111064-04			8696-004	Method Blank	U	
S111064-05			8696-005	Duplicate (S111064-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7281-188			2σ prep error 10.4 %	Reference Lab Notebook No. 7281 pg.132												
S111064-01			IUK2640-02	0.602	1.80			100		150			16	12/06/11	12/06	GRB-201
S111064-02			IUK2640-03 (TRIP-BLANK)	0.578	1.80			81		150			15	12/06/11	12/06	GRB-202
S111064-03			Lab Control Sample	0.614	1.80			76		150				12/06/11	12/06	GRB-203
S111064-04			Method Blank	0.609	1.80			79		150				12/06/11	12/06	GRB-204
S111064-05			Duplicate (S111064-01)	0.753	1.80			80		150			16	12/06/11	12/06	GRB-206
Nominal values and limits from method				1.00	1.80			30-105		50			180			

PROCEDURES REFERENCE 904.0
DWP-894 Sequential Separation of Actinium-228 and Radium-226 in Drinking Water (>1 Liter Aliquot), rev 5

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.631 ± 0.139
YIELD 83 ± 19

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER

BETA COUNTING

Test SR Matrix WATER
SDG 8696
Contact Joseph Verville

Client Test America, Inc.
Contract IUK2640

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Strontium-90	
Preparation batch 7281-188						
S111064-01			8696-001	IUK2640-02	U	
S111064-02			8696-002	IUK2640-03 (TRIP-BLANK)	U	
S111064-03			8696-003	Lab Control Sample	ok	
S111064-04			8696-004	Method Blank	U	
S111064-05			8696-005	Duplicate (S111064-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	2.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7281-188			2σ prep error 10.4 %	Reference Lab Notebook No. 7281 pg.132												
S111064-01			IUK2640-02	0.798	0.600			82		50			12	12/02/11	12/02	GRB-206
S111064-02			IUK2640-03 (TRIP-BLANK)	0.809	0.600			76		50			11	12/02/11	12/02	GRB-207
S111064-03			Lab Control Sample	0.669	0.500			81		50				12/02/11	12/02	GRB-204
S111064-04			Method Blank	0.928	0.500			79		50				12/02/11	12/02	GRB-207
S111064-05			Duplicate (S111064-01)	0.781	0.600			79		50			12	12/02/11	12/02	GRB-207
Nominal values and limits from method				2.00	0.500			30-105		50			180			

PROCEDURES REFERENCE 905.0
CP-380 Strontium in Water Samples, rev 5

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.797 ± 0.184
YIELD 79 ± 5

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

LAB METHOD SUMMARY

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

Test 80A Matrix WATER
SDG 8696
Contact Joseph Verville

Client Test America, Inc.
Contract IUK2640

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
Preparation batch 7281-188					
S111064-01	80		8696-001	IUK2640-02	0.368 J
S111064-02	80		8696-002	IUK2640-03 (TRIP-BLANK)	U
S111064-03	80		8696-003	Lab Control Sample	ok
S111064-04	80		8696-004	Method Blank	U
S111064-05	80		8696-005	Duplicate (S111064-01)	ok J
Nominal values and limits from method				RDLs (pCi/L)	3.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7281-188 2σ prep error 20.6 % Reference Lab Notebook No. 7281 pg.132																
S111064-01	80		IUK2640-02	0.209	0.300			14		400			15	12/01/11	12/05	GRB-101
S111064-02	80		IUK2640-03 (TRIP-BLANK)	0.246	0.300			0		400			14	12/01/11	12/05	GRB-104
S111064-03	80		Lab Control Sample	0.616	0.300			64		400				12/01/11	12/06	GRB-107
S111064-04	80		Method Blank	0.504	0.300			64		400				12/01/11	12/05	GRB-111
S111064-05	80		Duplicate (S111064-01)	0.299	0.300			14		400			15	12/01/11	12/05	GRB-112
Nominal values and limits from method				3.00	0.300			0-250		100			180			

PROCEDURES REFERENCE 900.0
DWP-121 Gross Alpha and Gross Beta in Drinking Water, rev 10

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.375 ± 0.353
RESIDUE 31 ± 61

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

LAB METHOD SUMMARY

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Test 80B Matrix WATER
SDG 8696
Contact Joseph Verville

Client Test America, Inc.
Contract IUK2640

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
Preparation batch 7281-188						
S111064-01	80		8696-001	IUK2640-02	1.64	J
S111064-02	80		8696-002	IUK2640-03 (TRIP-BLANK)	U	
S111064-03	80		8696-003	Lab Control Sample	ok	
S111064-04	80		8696-004	Method Blank	U	
S111064-05	80		8696-005	Duplicate (S111064-01)	ok	J
Nominal values and limits from method				RDLs (pCi/L)	4.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7281-188 2σ prep error 11.0 % Reference Lab Notebook No. 7281 pg.132																
S111064-01	80		IUK2640-02	0.912	0.300			14		400			15	12/01/11	12/05	GRB-101
S111064-02	80		IUK2640-03 (TRIP-BLANK)	0.757	0.300			0		400			14	12/01/11	12/05	GRB-104
S111064-03	80		Lab Control Sample	1.13	0.300			64		400				12/01/11	12/06	GRB-107
S111064-04	80		Method Blank	0.833	0.300			64		400				12/01/11	12/05	GRB-111
S111064-05	80		Duplicate (S111064-01)	0.820	0.300			14		400			15	12/01/11	12/05	GRB-112
Nominal values and limits from method				4.00	0.300			0-250		100			180			

PROCEDURES REFERENCE 900.0
DWP-121 Gross Alpha and Gross Beta in Drinking Water, rev 10

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.890 ± 0.290
RESIDUE 31 ± 61

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

Test GAM Matrix WATER
SDG 8696
Contact Joseph Verville

Client Test America, Inc.
Contract IUK2640

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137	
Preparation batch 7281-188							
S111064-01			8696-001	IUK2640-02		U	
S111064-02			8696-002	IUK2640-03 (TRIP-BLANK)		U	
S111064-03			8696-003	Lab Control Sample	ok	ok	
S111064-04			8696-004	Method Blank		U	
S111064-05			8696-005	Duplicate (S111064-01)		-	U
Nominal values and limits from method				RDLs (pCi/L)	10.0	20.0	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7281-188			2σ prep error 7.0 %	Reference Lab Notebook No. 7281 pg.132												
S111064-01			IUK2640-02		2.00					752			9	11/28/11	11/29	01,04,00
S111064-02			IUK2640-03 (TRIP-BLANK)		2.00					734			8	11/28/11	11/29	MB,08,00
S111064-03			Lab Control Sample		2.00					1040				11/28/11	11/30	01,01,00
S111064-04			Method Blank		2.00					1041				11/28/11	11/30	MB,05,00
S111064-05			Duplicate (S111064-01)		2.00					1040			10	11/28/11	11/30	01,02,00
Nominal values and limits from method				6.00	2.00					400			180			

PROCEDURES REFERENCE 901.1
DWP-100 Preparation of Drinking Water Samples for Gamma Spectroscopy, rev 5

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

LAB METHOD SUMMARY

URANIUM, TOTAL

KINETIC PHOSPHORIMETRY, UG

Test U T Matrix WATER
SDG 8696
Contact Joseph Verville

Client Test America, Inc.
Contract IUK2640

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Uranium, Total
Preparation batch 7281-188					
S111064-01			8696-001	IUK2640-02	0.365 J
S111064-02			8696-002	IUK2640-03 (TRIP-BLANK)	U
S111064-03			8696-003	Lab Control Sample	ok
S111064-04			8696-004	Method Blank	U
S111064-05			8696-005	Duplicate (S111064-01)	ok J
Nominal values and limits from method				RDLs (pCi/L)	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7281-188			2σ prep error	Reference Lab Notebook No. 7281 pg.132												
S111064-01			IUK2640-02	0.017	0.0200								11	12/01/11	12/01	KPA-001
S111064-02			IUK2640-03 (TRIP-BLANK)	0.017	0.0200								10	12/01/11	12/01	KPA-001
S111064-03			Lab Control Sample	0.168	0.0200									12/01/11	12/01	KPA-001
S111064-04			Method Blank	0.017	0.0200									12/01/11	12/01	KPA-001
S111064-05			Duplicate (S111064-01)	0.017	0.0200								11	12/01/11	12/01	KPA-001
Nominal values and limits from method				1.00	0.0200								180			

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.047 ± 0.135
YIELD ____ ± ____

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

Test H Matrix WATER
SDG 8696
Contact Joseph Verville

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Client Test America, Inc.
Contract IUK2640

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
Preparation batch 7281-188						
S111064-01			8696-001	IUK2640-02	U	
S111064-03			8696-003	Lab Control Sample	ok	J
S111064-04			8696-004	Method Blank	U	
S111064-05			8696-005	Duplicate (S111064-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	500	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7281-188			2σ prep error 10.0 %	Reference Lab Notebook No. 7281 pg.132												
S111064-01			IUK2640-02	152	0.0100			100		150			16	12/05/11	12/06	LSC-007
S111064-03			Lab Control Sample	14.6	1.00			10		150				12/05/11	12/06	LSC-007
S111064-04			Method Blank	14.8	1.00			10		150				12/05/11	12/06	LSC-007
S111064-05			Duplicate (S111064-01)	152	0.0100			100		150			16	12/05/11	12/06	LSC-007
Nominal values and limits from method				500	0.0100					100			180			

PROCEDURES REFERENCE 906.0
DWP-212 Tritium in Drinking Water by Distillation, rev 8

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 83.4 ± 159
YIELD 55 ± 104

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/12/11

EBERLINE ANALYTICAL

SDG 8696

LAB METHOD SUMMARY

RADIUM-226 IN WATER

RADON COUNTING

Test RA Matrix WATER
SDG 8696
Contact Joseph Verville

Client Test America, Inc.
Contract IUK2640

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Radium-226	
Preparation batch 7281-188						
S111064-01			8696-001	IUK2640-02	U	
S111064-02			8696-002	IUK2640-03 (TRIP-BLANK)	U	
S111064-03			8696-003	Lab Control Sample	ok	
S111064-04			8696-004	Method Blank	U	
S111064-05			8696-005	Duplicate (S111064-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7281-188			2σ prep error 16.4 %	Reference Lab Notebook No. 7281 pg.132												
S111064-01			IUK2640-02	0.747	0.100			100	82				16	12/06/11	12/06	RN-010
S111064-02			IUK2640-03 (TRIP-BLANK)	0.708	0.100			100	82				15	12/06/11	12/06	RN-012
S111064-03			Lab Control Sample	0.727	0.100			100	80					12/06/11	12/06	RN-014
S111064-04			Method Blank	0.674	0.100			100	121					12/06/11	12/06	RN-016
S111064-05			Duplicate (S111064-01)	0.698	0.100			100	121				16	12/06/11	12/06	RN-015
Nominal values and limits from method				1.00	0.100					100			180			

PROCEDURES REFERENCE 903.1
DWP-881A Ra-226 Screening in Drinking Water, rev 6

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.711 ± 0.056
YIELD 100 ± 0

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 12/12/11

SDG 8696
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUK2640

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

* LAB SAMPLE ID is the lab's primary identification for a sample.

* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.

* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.

* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

  QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 12/12/11

SDG 8696
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUK2640

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

* The preparation batches are shown in the same order as the Method Summary Reports are printed.

* Only analyses of planchets relevant to the SDG are included.

* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.

* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

  These qualifiers should be reviewed as follows:

  X Some data has been manually entered or modified. Transcription errors are possible.

  P One or more results are 'preliminary'. The data is not ready for final reporting.

  2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

  Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 12/12/11

SDG 8696
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUK2640

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.

* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.

* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.

* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.

* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUK2640

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

  The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.

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SDG 8696
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract IUK2640

DATA SHEET

J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA

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Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract IUK2640

DATA SHEET

may not be a good estimate of the 'real' minimum detectable activity.

* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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Protocol TA
Version Ver 1.0
Form DVD-RG
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SDG 8696
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUK2640

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.

* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

  An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The error of RESULT, including that introduced by rounding the result prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

* The recovery is underlined if it is outside either of these ranges.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 12/12/11

SDG 8696
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUK2640

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

  If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

  For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

  If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

  This value reported for this limit is at most 999.

* The second limit for the RPD is the larger of:

  1. A fixed percentage specified in the protocol.

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Version Ver 1.0
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GUIDE, cont.

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Contract IUK2640

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

* The RPD is underlined if it is greater than either limit.

* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

  Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 12/12/11

SDG 8696
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUK2640

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

  An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

Lab id EAS
Protocol TA
Version Ver 1.0
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Contact Joseph Verville

GUIDE, cont.

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Contract IUK2640

MATRIX SPIKE

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

* The recovery is underlined (out of spec) if it is outside either of these ranges.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 12/12/11

SDG 8696
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUK2640

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

  There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

  The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

  The J and X flags are as on the data sheet.

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data' means no amount ADDED was specified. 'LOW' and 'HIGH'

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 12/12/11

SDG 8696
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract IUK2640

METHOD SUMMARY

correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.

* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

  MDAs are underlined if greater than the printed RDL.

* Aliquots are underlined if less than the nominal value specified for the method.

* Prepareation factors are underlined if greater than the nominal value specified for the method.

* Dilution factors are underlined if greater than the nominal value specified for the method.

* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.

* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.

* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

* Count times are underlined if less than the nominal value

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 12/12/11

SDG 8696
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract IUK2640

METHOD SUMMARY

specified for the method.

* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.

* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.

* Days Held are underlined if greater than the holding time specified in the protocol.

* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 12/12/11

SDG 8696
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract IUK2640

METHOD SUMMARY

No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 12/12/11

Subcontract Order - TestAmerica Irvine (IUK2640)

86916

SENDING LABORATORY:

TestAmerica Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Debby Wilson

RECEIVING LABORATORY:

Eberline Services - SUB
2030 Wright Avenue
Richmond, CA 94804
Phone :(510) 235-2633
Fax: (510) 235-0438
Project Location: California
Receipt Temperature: _____ °C Ice: Y / N

Standard TAT is requested unless specific due date is requested. => Due Date: _____ Initials: _____

Analysis	Units	Expires	Comments
Sample ID: IUK2640-02 (Outfall 009 (Composite) - Water)		Sampled: 11/20/11 17:50	
Gamma Spec-O	mg/kg	11/19/12 17:50	Out Eberline, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	05/18/12 17:50	Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	05/18/12 17:50	Out Eberline Boeing permit, DO NOT FILTER!
Radium, Combined-O	pCi/L	11/19/12 17:50	Out Eberline Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	11/19/12 17:50	Out Eberline, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	11/19/12 17:50	Out Eberline, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	11/19/12 17:50	Out Eberline, Boeing permit, DO NOT FILTER!
Containers Supplied:			
2.5 gal Poly (I)	500 mL Amber (J)		
Sample ID: IUK2640-03 (Trip Blank - Water)		Sampled: 11/21/11 00:00	
Gamma Spec-O	mg/kg	11/20/12 00:00	Out Eberline, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	05/19/12 00:00	Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	05/19/12 00:00	Out Eberline Boeing permit, DO NOT FILTER!
Radium, Combined-O	pCi/L	11/20/12 00:00	Out Eberline Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	11/20/12 00:00	Out Eberline, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	11/20/12 00:00	Out Eberline, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	11/20/12 00:00	Out Eberline, Boeing permit, DO NOT FILTER!
Containers Supplied:			
2.5 gal Poly (A)			

Released By	11/22/11 17:00 Date/Time	FedEx Received By	11/22/11 17:00 Date/Time
FEDEX Released By	Date/Time	Alex Kellum Received By	11/23/11 9:30 Date/Time

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA

Date/Time received 11/28/11 09:30 CoC No. 14K2640

Container I.D. No. ice chest Requested TAT (Days) 21 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [✓] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [✓] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [ ] No [ ] N/A [✓]
4. Custody seals on sample containers dated & signed? Yes [ ] No [ ] N/A [✓]
5. Packing material is: Wet [ ] Dry [ ] N/A ✓
6. Number of samples in shipping container: 2 Sample Matrix WATER
7. Number of containers per sample: _____ (Or see CoC ✓)
8. Samples are in correct container Yes [✓] No [ ]
9. Paperwork agrees with samples? Yes [✓] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [✓]
11. Samples are: In good condition [✓] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [✓] Not preserved [ ] pH 2/6 Preservative _____
13. Describe any anomalies:

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by JK Date: 11/28/11 Time: 10:50

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
ALL Samples < 80							

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 99574 Calibration date 15 JUL 2010

APPENDIX G

Section 9

Outfall 009 – December 12, 2011

MEC^X Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: IUL1224

Prepared by

MEC^X, LP
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Boeing SSFL NPDES
Contract Task Order:	1261.100D.00
Sample Delivery Group:	IUL1224
Project Manager:	B. Kelly
Matrix:	Water
QC Level:	IV
No. of Samples:	2
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 009 (Grab)	IUL1224-01	N/A	Water	12/12/2011 11:00:00 AM	1664A
Outfall 009 (Composite)	IUL1224-02	G1L160426-001	Water	12/12/2011 2:47:00 PM	300.0, 900. 901.1, 903.1, 904, 905, 906, 245.1, 245.1 Diss, 1613B, ASTM D5174, SM 2540C, SM2540D, SM 4500CN-E

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratories within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. One cross-out on the COC was not initialed or dated. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	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. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
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 data are unusable. 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. 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.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	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
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
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.
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 as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
$	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.

Qualification Code Reference Table Cont.

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 reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: L. Calvin
Date Reviewed: January 5, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0), USEPA Method 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review* (8/02).

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.

- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.

    - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. 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%.

    - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.

- Calibration: Calibration criteria were met.

    - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs $\leq$20% for the 15 native compounds (calibration by isotope dilution) and $\leq$35% for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.

    - 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.

- Blanks: The method blank had detects above the EDL for all target compounds and totals with the exception of 2,3,7,8-TCDD, 2,3,7,8-TCDF, and their associated totals. Some method blank results were reported as EMPCs; however, due to the extent of the method blank contamination, the reviewer deemed it appropriate to use all method blank results to qualify sample results. The method blank concentration of OCDD was insufficient to

qualify the sample result. Sample results for the remaining individual isomer method blank contaminants were qualified as nondetected, "U," at the EDL if reported below the EDL, or at the level of contamination. With the exception of total HpCDF, detected total results were also qualified as nondetected, "U," as the peaks comprising the totals in the sample were present at comparable concentrations in the method blank. Total HpCDF was qualified as estimated, "J," as only a portion of the total was considered method blank contamination.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613.

- 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 samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: This SDG had no identified field duplicate samples.

- Internal Standards Performance: The labeled internal standard recoveries for the sample were within the acceptance criteria listed in Table 7 of Method 1613.

- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.

- Compound Quantification and Reported Detection Limits: Compound quantification was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J." Individual isomer EMPCs qualified as nondetected for method blank contamination were not further qualified as EMPCs. The total for HpCDF was qualified as estimated, "J," as the total included an individual isomer originally reported as an EMPC. Any detects reported between the estimated detection limit (EDL) and the reporting limit (RL) were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Nondetects are valid to the EDL.

B. EPA METHODS 200.8, and 245.1—Metals and Mercury

Reviewed By: P. Meeks
Date Reviewed: January 5, 2012

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Methods 200.8, 245.1*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: Analytical holding times, six months for ICP-MS metals and 28 days for mercury, were met.

- Tuning: The mass calibration and resolution checks criteria were met. All tuning solution %RSDs were ≤5%, and all masses of interest were calibrated to ≤ 0.1 amu and ≤0.9 amu at 10% peak height.

- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were ≥0.995 and all initial and continuing calibration recoveries were within 90-110% for the ICP and ICP-MS metals and 85-115% for mercury. CRDL/CRI recoveries were within the control limits of 70-130%.

- Blanks: Thallium was detected in a bracketing CCB at 0.20 ®g/L; therefore, total thallium in the sample was qualified was nondetected, “U,” at the reporting limit. Method blanks and CCBs had no other detects.

- Interference Check Samples: Recoveries were within the laboratory-established control limits. Copper and cadmium were detected in the ICSA at concentrations above the reporting limits. The reviewer could not confirm that these detections were due to contaminations in the ICSA solution.

- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratory-established QC limits.

- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.

- Matrix Spike/Matrix Spike Duplicate: A matrix spike was performed for the total 6020 analytes and MS/MSD analyses were performed for all dissolved analytes. Recoveries and RPDs were within laboratory-established QC limits.

- Serial Dilution: No serial dilution analyses were performed.

- Internal Standards Performance: All sample internal standard intensities were within 60-125% of the intensity in the calibration blank.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- 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 samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

C. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks
Date Reviewed: January 10, 2012

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.1, 904.0, 905.0, and 906.0, ASTM Method D-5174,* and the *National Functional Guidelines for Inorganic Data Review* (10/04).

- Holding Times: The tritium sample was analyzed within 180 days of collection. The remaining aliquots were preserved within five days of collection.

- Calibration: The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

  The gross alpha detector efficiency was marginally below 20%; therefore, gross alpha detected in the sample was qualified as estimated, "J." The remaining detector efficiencies were greater than 20%. The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. All KPA calibration check standard recoveries were within 90-110% and were deemed acceptable.

- Blanks: There were no analytes detected in the method blanks or the KPA CCBs.

- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratory-established control limits.

- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG. All RPDs were within the laboratory-established control limits.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.

- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

- 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 samples. Following are findings associated with field QC samples:
    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

D. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks
Date Reviewed: January 5, 2012

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0), EPA Methods SM 2540C, SM 2540D, SM 4500CN-E , 300.0 and 1664A*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: Analytical holding times were met.

- Calibration: Initial calibration r^2 values were $\geq$0.995 and all initial and continuing calibration recoveries were within 90-110%. The cyanide reporting limit check sample recovery was 43%; therefore, nondetected cyanide in the sample was qualified as estimated, "UJ." The remaining reporting limit check samples recoveries affecting site sample results were within the reasonable control limits of 70-130%. Balance calibration check logs were acceptable.

- Blanks: Method blanks and CCBs had no applicable detects.

- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratory-established QC limits. The 1664A LCS/LCSD RPD was within the laboratory-established control limit.

- Laboratory Duplicates: No laboratory duplicate analyses were performed on the samples in this SDG.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the samples in this SDG. Method accuracy was evaluated based on LCS results.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- 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 samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms IUL1224

Analysis Method 8697

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total		0.05	1	0.016	pCi/L	Jb	J	DNQ

Analysis Method 900

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	0.621	3	0.409	pCi/L	Jb	J	C, DNQ
Gross Beta	12587472	1.59	4	0.896	pCi/L	Jb	J	DNQ

Analysis Method 901.1

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	ND	20	1.6	pCi/L	U	U	
Potassium-40	13966002	ND	25	19.5	pCi/L	U	U	

Analysis Method 903.1

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.078	1	0.563	pCi/L	U	U	

Analysis Method 904

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	0.035	1	0.451	pCi/L	U	U	

Analysis Method 905

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	0.094	2	1.05	pCi/L	U	U	

Analysis Method 906

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-33.7	500	156	pCi/L	U	U	

Analysis Method EPA 1664A

Sample Name Outfall 009 (Grab) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUL1224-01 **Sample Date:** 12/12/2011 11:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hexane Extractable Material (Oil & Grease)		ND	4.7	1.3	mg/l		U	

Analysis Method EPA 200.8

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	0.67	2.0	0.30	ug/l	Ja	J	DNQ
Cadmium	7440-43-9	ND	1.0	0.10	ug/l		U	
Copper	7440-50-8	2.3	2.0	0.50	ug/l			
Lead	7439-92-1	1.3	1.0	0.20	ug/l			
Thallium	7440-28-0	ND	1.0	0.20	ug/l	Ja	U	B

Analysis Method EPA 200.8-Diss

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	0.55	2.0	0.30	ug/l	Ja	J	DNQ
Cadmium	7440-43-9	ND	1.0	0.10	ug/l		U	
Copper	7440-50-8	1.5	2.0	0.50	ug/l	Ja	J	DNQ
Lead	7439-92-1	0.21	1.0	0.20	ug/l	Ja	J	DNQ
Thallium	7440-28-0	ND	1.0	0.20	ug/l		U	

Analysis Method EPA 245.1

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

Analysis Method EPA 245.1-Diss

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

Analysis Method EPA 300.0

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Chloride	16887-00-6	1.2	0.50	0.30	mg/l			
Nitrate/Nitrite-N	NA	0.40	0.26	0.15	mg/l			
Sulfate	14808-79-8	36	0.50	0.30	mg/l			

Analysis Method EPA-5 1613B

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.00005	0.0000006	ug/L	J, B	U	B
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.00005	0.0000008	ug/L	J, Q, B	U	B
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.0000011	ug/L	J, B	U	B
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.00005	0.000001	ug/L	J, B	U	B
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.0000011	ug/L	J, B	U	B
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000009	ug/L	J, B	U	B
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.000001	ug/L	J, B	U	B
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.00005	0.0000008	ug/L	J, B	U	B
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.0000011	ug/L	J, B	U	B
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.0000019	ug/L	J, Q, B	U	B
1,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.0000027	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000008	ug/L	J, B	U	B
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.0000032	ug/L	J, B	U	B
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.0000011	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000021	ug/L		U	
OCDD	3268-87-9	0.0002	0.0001	0.0000026	ug/L	B		
OCDF	39001-02-0	ND	0.0001	0.0000013	ug/L	J, B	U	B
Total HpCDD	37871-00-4	ND	0.00005	0.0000006	ug/L	J, B	U	B
Total HpCDF	38998-75-3	0.000018	0.00005	0.0000009	ug/L	J, Q, B	J	B, DNQ, *III
Total HxCDD	34465-46-8	ND	0.00005	0.0000009	ug/L	J, Q, B	U	B
Total HxCDF	55684-94-1	ND	0.00005	0.000001	ug/L	J, B	U	B
Total PeCDD	36088-22-9	ND	0.00005	0.0000019	ug/L	J, Q, B	U	B
Total PeCDF	30402-15-4	ND	0.00005	0.000003	ug/L	J, B	U	B
Total TCDD	41903-57-5	ND	0.00001	0.0000011	ug/L		U	
Total TCDF	55722-27-5	ND	0.00001	0.0000021	ug/L		U	

Analysis Method SM 2540D

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	TSS	6.0	10	1.0	mg/l	Ja	J	DNQ

Analysis Method SM2540C

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Dissolved Solids	NA	69	10	1.0	mg/l			

Analysis Method SM4500CN-E

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUL1224-02 **Sample Date:** 12/12/2011 2:47:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Cyanide	57-12-5	ND	5.0	2.2	ug/l		UJ	R

APPENDIX G

Section 10

Outfall 009 – December 12, 13, & 14, 2011

Test America Analytical Laboratory Report

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project: Routine Outfall 009
Routine Outfall 009

Sampled: 12/12/11-12/14/11
Received: 12/12/11
Issued: 01/09/12 13:50

NELAP #01108CA California ELAP#2706 CSDLAC #10256 AZ #AZ0671 NV #CA01531

SAMPLE CROSS REFERENCE

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

ADDITIONAL INFORMATION: WATER, 1613B, Dioxins/Furans with Totals
Sample: 1
Some analytes in this sample and the associated method blank have an ion abundance ratio that is outside of criteria. The analytes are considered as an "estimated maximum possible concentration" (EMPC) because the quantitation is based on the theoretical ion abundance ratio. Analytical results are reported with a "Q" flag

Some analytes are reported at a concentration below the estimated detection limit (EDL). The data is reported as a positive detection because the peaks elute at the correct retention time for both characteristic ions and have a signal to noise ratio greater than the method required 2.5:1.

LABORATORY ID	CLIENT ID	MATRIX
IUL1224-01	Outfall 009 (Grab)	Water
IUL1224-02	Outfall 009 (Composite)	Water
IUL1224-03	Trip Blank	Water

I certify under penalty of perjury that the information contained in this report and all attachments was produced in accordance with the indicated methods and laboratory standard operating procedures, except as noted, and are complete and accurate to the best of my knowledge and belief. Subcontract laboratory reports that are attached have been evaluated for completeness and quality control acceptability.

Reviewed By:

Debby Wilson

TestAmerica Irvine

Debby Wilson
Project Manager

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Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUL1224-01 (Outfall 009 (Grab) - Water)					**Sampled: 12/12/11**				
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	11L3591	1.3	4.7	ND	1	DA	12/28/11	

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Routine Outfall 009
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Received: 12/12/11

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUL1224-02 (Outfall 009 (Composite) - Water)					**Sampled: 12/12/11**				
Reporting Units: ug/l									
Mercury	EPA 245.1	11L2451	0.10	0.20	ND	1	DB	12/19/11	
Antimony	EPA 200.8	11L2241	0.30	2.0	**0.67**	1	kb1	12/17/11	Ja
Cadmium	EPA 200.8	11L2241	0.10	1.0	ND	1	kb1	12/17/11	
Copper	EPA 200.8	11L2241	0.50	2.0	**2.3**	1	kb1	12/17/11	
Lead	EPA 200.8	11L2241	0.20	1.0	**1.3**	1	kb1	12/17/11	
Thallium	EPA 200.8	11L2241	0.20	1.0	**0.23**	1	kb1	12/17/11	Ja

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Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUL1224-02 (Outfall 009 (Composite) - Water) - cont.					**Sampled: 12/12/11**				
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	11L2458	0.10	0.20	ND	1	DB	12/20/11	
Antimony	EPA 200.8-Diss	11L2298	0.30	2.0	**0.55**	1	RDC	12/19/11	Ja
Cadmium	EPA 200.8-Diss	11L2298	0.10	1.0	ND	1	RDC	12/19/11	
Copper	EPA 200.8-Diss	11L2298	0.50	2.0	**1.5**	1	RDC	12/19/11	Ja
Lead	EPA 200.8-Diss	11L2298	0.20	1.0	**0.21**	1	RDC	12/19/11	Ja
Thallium	EPA 200.8-Diss	11L2298	0.20	1.0	ND	1	RDC	12/19/11	

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Project ID: Routine Outfall 009
Routine Outfall 009
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Sampled: 12/12/11-12/14/11
Received: 12/12/11

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUL1224-02 (Outfall 009 (Composite) - Water) - cont.					**Sampled: 12/12/11**				
Reporting Units: mg/l									
Chloride	EPA 300.0	11L1659	0.30	0.50	**1.2**	1	NN	12/14/11	
Nitrate/Nitrite-N	EPA 300.0	11L1659	0.15	0.26	**0.40**	1	NN	12/14/11	
Sulfate	EPA 300.0	11L1659	0.30	0.50	**36**	1	NN	12/14/11	
Total Dissolved Solids	SM2540C	11L1739	1.0	10	**69**	1	MC	12/14/11	
Total Suspended Solids	SM 2540D	11L2132	1.0	10	**6.0**	1	DK1	12/16/11	Ja
Sample ID: IUL1224-02 (Outfall 009 (Composite) - Water)					**Sampled: 12/12/11**				
Reporting Units: ug/l									
Total Cyanide	SM4500CN-E	11L2744	2.2	5.0	ND	1	PxI	12/20/11	

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Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

EPA-5 1613Bx

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUL1224-02 (Outfall 009 (Composite) - Water) - cont.					**Sampled: 12/12/11**				
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	1353086	0.00000066	0.00005	**0.000019**	0.97	SO	12/21/11	J, B
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	1353086	0.00000081	0.00005	**0.000008**	0.97	SO	12/21/11	J, Q, B
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	1353086	0.0000011	0.00005	**0.0000048**	0.97	SO	12/21/11	J, B
1,2,3,4,7,8-HxCDD	EPA-5 1613B	1353086	0.000001	0.00005	**0.0000043**	0.97	SO	12/21/11	J, B
1,2,3,4,7,8-HxCDF	EPA-5 1613B	1353086	0.0000011	0.00005	**0.0000033**	0.97	SO	12/21/11	J, B
1,2,3,6,7,8-HxCDD	EPA-5 1613B	1353086	0.0000009	0.00005	**0.0000046**	0.97	SO	12/21/11	J, B
1,2,3,6,7,8-HxCDF	EPA-5 1613B	1353086	0.000001	0.00005	**0.0000027**	0.97	SO	12/21/11	J, B
1,2,3,7,8,9-HxCDD	EPA-5 1613B	1353086	0.00000081	0.00005	**0.000004**	0.97	SO	12/21/11	J, B
1,2,3,7,8,9-HxCDF	EPA-5 1613B	1353086	0.0000011	0.00005	**0.0000034**	0.97	SO	12/21/11	J, B
1,2,3,7,8-PeCDD	EPA-5 1613B	1353086	0.0000019	0.00005	**0.000002**	0.97	SO	12/21/11	J, Q, B
1,2,3,7,8-PeCDF	EPA-5 1613B	1353086	0.0000027	0.00005	ND	0.97	SO	12/21/11	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	1353086	0.00000087	0.00005	**0.0000034**	0.97	SO	12/21/11	J, B
2,3,4,7,8-PeCDF	EPA-5 1613B	1353086	0.0000032	0.00005	**0.0000022**	0.97	SO	12/21/11	J, B
2,3,7,8-TCDD	EPA-5 1613B	1353086	0.0000011	0.00001	ND	0.97	SO	12/21/11	
2,3,7,8-TCDF	EPA-5 1613B	1353086	0.0000021	0.00001	ND	0.97	SO	12/21/11	
OCDD	EPA-5 1613B	1353086	0.0000026	0.0001	**0.0002**	0.97	SO	12/21/11	B
OCDF	EPA-5 1613B	1353086	0.0000013	0.0001	**0.000021**	0.97	SO	12/21/11	J, B
Total HpCDD	EPA-5 1613B	1353086	0.00000066	0.00005	**0.00004**	0.97	SO	12/21/11	J, B
Total HpCDF	EPA-5 1613B	1353086	0.00000096	0.00005	**0.000018**	0.97	SO	12/21/11	J, Q, B
Total HxCDD	EPA-5 1613B	1353086	0.0000009	0.00005	**0.000015**	0.97	SO	12/21/11	J, Q, B
Total HxCDF	EPA-5 1613B	1353086	0.000001	0.00005	**0.000013**	0.97	SO	12/21/11	J, B
Total PeCDD	EPA-5 1613B	1353086	0.0000019	0.00005	**0.000002**	0.97	SO	12/21/11	J, Q, B
Total PeCDF	EPA-5 1613B	1353086	0.000003	0.00005	**0.0000022**	0.97	SO	12/21/11	J, B
Total TCDD	EPA-5 1613B	1353086	0.0000011	0.00001	ND	0.97	SO	12/21/11	
Total TCDF	EPA-5 1613B	1353086	0.0000021	0.00001	ND	0.97	SO	12/21/11	
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)					*86 %*				
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)					*79 %*				
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)					*84 %*				
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)					*78 %*				
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)					*75 %*				
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)					*80 %*				
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)					*78 %*				
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)					*85 %*				
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)					*85 %*				
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)					*79 %*				
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)					*83 %*				
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)					*74 %*				
Surrogate: 13C-2,3,7,8-TCDD (25-164%)					*83 %*				
Surrogate: 13C-2,3,7,8-TCDF (24-169%)					*82 %*				
Surrogate: 13C-OCDD (17-157%)					*78 %*				
Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)					*98 %*				

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Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

8697

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUL1224-02 (Outfall 009 (Composite) - Water) - cont.					**Sampled: 12/12/11**				
Reporting Units: pCi/L									
Uranium, Total	8697	8697	0.016	1	**0.05**	1	CSS	12/28/11	Jb

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Project ID: Routine Outfall 009
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Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

8697

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUL1224-03 (Trip Blank - Water)					**Sampled: 12/14/11**				
Reporting Units: pCi/L									
Uranium, Total	8697	8697	0.016	1	**0.003**	1	CSS	12/28/11	U

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Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

900

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUL1224-02 (Outfall 009 (Composite) - Water)					**Sampled: 12/12/11**				
Reporting Units: pCi/L									
Gross Alpha	900	8697	0.409	3	**0.621**	1	DVP	12/29/11	Jb
Gross Beta	900	8697	0.896	4	**1.59**	1	DVP	12/29/11	Jb
Sample ID: IUL1224-03 (Trip Blank - Water)					**Sampled: 12/14/11**				
Reporting Units: pCi/L									
Gross Alpha	900	8697	0.274	3	-0.03	1	DVP	12/29/11	U
Gross Beta	900	8697	1.07	4	-0.317	1	DVP	12/29/11	U

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901.1

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUL1224-02 (Outfall 009 (Composite) - Water)					**Sampled: 12/12/11**				
Reporting Units: pCi/L									
Cesium-137	901.1	8697	1.6	20	ND	1	LS	12/27/11	U
Potassium-40	901.1	8697	19.5	25	ND	1	LS	12/27/11	U
Sample ID: IUL1224-03 (Trip Blank - Water)					**Sampled: 12/14/11**				
Reporting Units: pCi/L									
Cesium-137	901.1	8697	1.21	20	ND	1	LS	12/27/11	U
Potassium-40	901.1	8697	24.9	25	ND	1	LS	12/27/11	U

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Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

903.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUL1224-02 (Outfall 009 (Composite) - Water)					**Sampled: 12/12/11**				
Reporting Units: pCi/L									
Radium-226	903.1	8697	0.563	1	**0.078**	1	TM	12/29/11	U
Sample ID: IUL1224-03 (Trip Blank - Water)					**Sampled: 12/14/11**				
Reporting Units: pCi/L									
Radium-226	903.1	8697	0.566	1	-0.033	1	TM	12/29/11	U

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Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

904

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUL1224-02 (Outfall 009 (Composite) - Water)					**Sampled: 12/12/11**				
Reporting Units: pCi/L									
Radium-228	904	8697	0.451	1	**0.035**	1	ASM	01/03/12	U
Sample ID: IUL1224-03 (Trip Blank - Water)					**Sampled: 12/14/11**				
Reporting Units: pCi/L									
Radium-228	904	8697	0.448	1	-0.123	1	ASM	01/03/12	U

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Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

905

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUL1224-02 (Outfall 009 (Composite) - Water)					**Sampled: 12/12/11**				
Reporting Units: pCi/L									
Strontium-90	905	8697	1.05	2	**0.094**	1	WL	12/29/11	U
Sample ID: IUL1224-03 (Trip Blank - Water)					**Sampled: 12/14/11**				
Reporting Units: pCi/L									
Strontium-90	905	8697	0.994	2	-0.139	1	WL	12/29/11	U

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Sampled: 12/12/11-12/14/11
Received: 12/12/11

906

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUL1224-02 (Outfall 009 (Composite) - Water)					**Sampled: 12/12/11**				
Reporting Units: pCi/L									
Tritium	906	8697	156	500	-33.7	1	WL	12/21/11	U

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Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 009 (Composite) (IUL1224-02) - Water					
EPA 300.0	2	12/12/2011 14:47	12/12/2011 18:15	12/13/2011 22:00	12/14/2011 00:57
Filtration	1	12/12/2011 14:47	12/12/2011 18:15	12/14/2011 15:17	12/14/2011 15:35

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Sampled: 12/12/11-12/14/11
Received: 12/12/11

METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11L3591 Extracted: 12/28/11												
Blank Analyzed: 12/28/2011 (11L3591-BLK1)												
Hexane Extractable Material (Oil & Grease)	ND	5.0	1.4	mg/l	DA							
LCS Analyzed: 12/28/2011 (11L3591-BS1)												**MNR1**
Hexane Extractable Material (Oil & Grease)	19.0	5.0	1.4	mg/l	DA	20.0		95	78-114			
LCS Dup Analyzed: 12/28/2011 (11L3591-BSD1)												
Hexane Extractable Material (Oil & Grease)	18.5	5.0	1.4	mg/l	DA	20.0		92	78-114	3	11	

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Sampled: 12/12/11-12/14/11
Received: 12/12/11

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11L2241 Extracted: 12/16/11												
Blank Analyzed: 12/17/2011 (11L2241-BLK1)												
Antimony	ND	2.0	0.30	ug/l	kb1							
Cadmium	ND	1.0	0.10	ug/l	kb1							
Copper	ND	2.0	0.50	ug/l	kb1							
Lead	ND	1.0	0.20	ug/l	kb1							
Thallium	ND	1.0	0.20	ug/l	kb1							
LCS Analyzed: 12/17/2011 (11L2241-BS1)												
Antimony	83.4	2.0	0.30	ug/l	kb1	80.0		104	85-115			
Cadmium	81.1	1.0	0.10	ug/l	kb1	80.0		101	85-115			
Copper	83.2	2.0	0.50	ug/l	kb1	80.0		104	85-115			
Lead	75.7	1.0	0.20	ug/l	kb1	80.0		95	85-115			
Thallium	75.8	1.0	0.20	ug/l	kb1	80.0		95	85-115			
Matrix Spike Analyzed: 12/17/2011 (11L2241-MS1)						**Source: IUL1234-08**						
Antimony	85.5	2.0	0.30	ug/l	kb1	80.0	0.671	106	70-130			
Cadmium	82.3	1.0	0.10	ug/l	kb1	80.0	ND	103	70-130			
Copper	83.8	2.0	0.50	ug/l	kb1	80.0	2.30	102	70-130			
Lead	79.0	1.0	0.20	ug/l	kb1	80.0	0.850	98	70-130			
Thallium	79.4	1.0	0.20	ug/l	kb1	80.0	0.229	99	70-130			
Matrix Spike Analyzed: 12/17/2011 (11L2241-MS2)						**Source: IUL1224-02**						
Antimony	86.3	2.0	0.30	ug/l	kb1	80.0	0.671	107	70-130			
Cadmium	82.7	1.0	0.10	ug/l	kb1	80.0	ND	103	70-130			
Copper	85.4	2.0	0.50	ug/l	kb1	80.0	2.33	104	70-130			
Lead	81.8	1.0	0.20	ug/l	kb1	80.0	1.27	101	70-130			
Thallium	81.9	1.0	0.20	ug/l	kb1	80.0	0.233	102	70-130			
Matrix Spike Dup Analyzed: 12/17/2011 (11L2241-MSD1)						**Source: IUL1234-08**						
Antimony	84.1	2.0	0.30	ug/l	kb1	80.0	0.671	104	70-130	2	20	
Cadmium	80.7	1.0	0.10	ug/l	kb1	80.0	ND	101	70-130	2	20	
Copper	84.7	2.0	0.50	ug/l	kb1	80.0	2.30	103	70-130	1	20	
Lead	79.8	1.0	0.20	ug/l	kb1	80.0	0.850	99	70-130	1	20	
Thallium	80.6	1.0	0.20	ug/l	kb1	80.0	0.229	100	70-130	1	20	

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Routine Outfall 009
Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11L2451 Extracted: 12/18/11												
Blank Analyzed: 12/19/2011 (11L2451-BLK1)												
Mercury	ND	0.20	0.10	ug/l	DB							
LCS Analyzed: 12/19/2011 (11L2451-BS1)												
Mercury	8.26	0.20	0.10	ug/l	DB	8.00		103	85-115			
Matrix Spike Analyzed: 12/19/2011 (11L2451-MS1)						**Source: IUL1331-01**						
Mercury	7.80	0.20	0.10	ug/l	DB	8.00	ND	98	70-130			
Matrix Spike Dup Analyzed: 12/19/2011 (11L2451-MSD1)						**Source: IUL1331-01**						
Mercury	7.76	0.20	0.10	ug/l	DB	8.00	ND	97	70-130	0.5	20	

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Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11L2298 Extracted: 12/16/11												
Blank Analyzed: 12/19/2011 (11L2298-BLK1)												
Antimony	ND	2.0	0.30	ug/l	RDC							
Cadmium	ND	1.0	0.10	ug/l	RDC							
Copper	ND	2.0	0.50	ug/l	RDC							
Lead	ND	1.0	0.20	ug/l	RDC							
Thallium	ND	1.0	0.20	ug/l	RDC							
LCS Analyzed: 12/19/2011 (11L2298-BS1)												
Antimony	80.8	2.0	0.30	ug/l	RDC	80.0		101	85-115			
Cadmium	79.1	1.0	0.10	ug/l	RDC	80.0		99	85-115			
Copper	76.4	2.0	0.50	ug/l	RDC	80.0		96	85-115			
Lead	81.8	1.0	0.20	ug/l	RDC	80.0		102	85-115			
Thallium	73.8	1.0	0.20	ug/l	RDC	80.0		92	85-115			
Matrix Spike Analyzed: 12/19/2011 (11L2298-MS1)						**Source: IUL1224-02**						
Antimony	83.3	2.0	0.30	ug/l	RDC	80.0	0.548	103	70-130			
Cadmium	80.0	1.0	0.10	ug/l	RDC	80.0	ND	100	70-130			
Copper	78.6	2.0	0.50	ug/l	RDC	80.0	1.50	96	70-130			
Lead	81.3	1.0	0.20	ug/l	RDC	80.0	0.206	101	70-130			
Thallium	72.6	1.0	0.20	ug/l	RDC	80.0	ND	91	70-130			
Matrix Spike Analyzed: 12/19/2011 (11L2298-MS2)						**Source: IUL1234-10**						
Antimony	80.8	2.0	0.30	ug/l	RDC	80.0	0.586	100	70-130			
Cadmium	79.4	1.0	0.10	ug/l	RDC	80.0	ND	99	70-130			
Copper	79.1	2.0	0.50	ug/l	RDC	80.0	2.83	95	70-130			
Lead	80.7	1.0	0.20	ug/l	RDC	80.0	0.330	101	70-130			
Thallium	76.0	1.0	0.20	ug/l	RDC	80.0	ND	95	70-130			
Matrix Spike Dup Analyzed: 12/19/2011 (11L2298-MSD1)						**Source: IUL1224-02**						
Antimony	84.5	2.0	0.30	ug/l	RDC	80.0	0.548	105	70-130	2	20	
Cadmium	80.8	1.0	0.10	ug/l	RDC	80.0	ND	101	70-130	1	20	
Copper	79.8	2.0	0.50	ug/l	RDC	80.0	1.50	98	70-130	2	20	
Lead	82.2	1.0	0.20	ug/l	RDC	80.0	0.206	103	70-130	1	20	
Thallium	74.1	1.0	0.20	ug/l	RDC	80.0	ND	93	70-130	2	20	

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Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11L2458 Extracted: 12/19/11												
Blank Analyzed: 12/20/2011 (11L2458-BLK1)												
Mercury	ND	0.20	0.10	ug/l	DB							
LCS Analyzed: 12/20/2011 (11L2458-BS1)												
Mercury	8.56	0.20	0.10	ug/l	DB	8.00		107	85-115			
Matrix Spike Analyzed: 12/20/2011 (11L2458-MS1)						**Source: IUL1224-02**						
Mercury	8.62	0.20	0.10	ug/l	DB	8.00	ND	108	70-130			
Matrix Spike Dup Analyzed: 12/20/2011 (11L2458-MSD1)						**Source: IUL1224-02**						
Mercury	8.62	0.20	0.10	ug/l	DB	8.00	ND	108	70-130	0.03	20	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11L1659 Extracted: 12/13/11												
Blank Analyzed: 12/13/2011 (11L1659-BLK1)												
Chloride	ND	0.50	0.30	mg/l	NN							
Nitrate/Nitrite-N	ND	0.26	0.15	mg/l	NN							
Sulfate	ND	0.50	0.30	mg/l	NN							
LCS Analyzed: 12/13/2011 (11L1659-BS1)												
Chloride	4.84	0.50	0.30	mg/l	NN	5.00		97	90-110			*M-3*
Sulfate	9.76	0.50	0.30	mg/l	NN	10.0		98	90-110			
Matrix Spike Analyzed: 12/13/2011 (11L1659-MS1)						**Source: IUL1265-01**						
Chloride	92.1	5.0	3.0	mg/l	NN	50.0	43.0	98	80-120			
Sulfate	159	5.0	3.0	mg/l	NN	100	64.1	95	80-120			
Matrix Spike Analyzed: 12/13/2011 (11L1659-MS2)						**Source: IUL1358-01**						
Sulfate	25.1	0.50	0.30	mg/l	NN	10.0	14.4	107	80-120			
Matrix Spike Dup Analyzed: 12/13/2011 (11L1659-MSD1)						**Source: IUL1265-01**						
Chloride	91.1	5.0	3.0	mg/l	NN	50.0	43.0	96	80-120	1	20	
Sulfate	159	5.0	3.0	mg/l	NN	100	64.1	95	80-120	0.3	20	
Batch: 11L1739 Extracted: 12/14/11												
Blank Analyzed: 12/14/2011 (11L1739-BLK1)												
Total Dissolved Solids	ND	10	1.0	mg/l	MC							
LCS Analyzed: 12/14/2011 (11L1739-BS1)												
Total Dissolved Solids	1000	10	1.0	mg/l	MC	1000		100	90-110			

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Sampled: 12/12/11-12/14/11
Received: 12/12/11

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11L1739 Extracted: 12/14/11												
Duplicate Analyzed: 12/14/2011 (11L1739-DUP1)							**Source: IUL1316-02**					
Total Dissolved Solids	566	10	1.0	mg/l	MC		571			0.9	10	
Batch: 11L2132 Extracted: 12/16/11												
Blank Analyzed: 12/16/2011 (11L2132-BLK1)												
Total Suspended Solids	ND	10	1.0	mg/l	DK1							
LCS Analyzed: 12/16/2011 (11L2132-BS1)												
Total Suspended Solids	990	10	1.0	mg/l	DK1	1000		99	85-115			
Duplicate Analyzed: 12/16/2011 (11L2132-DUP1)							**Source: IUL1234-03**					
Total Suspended Solids	10.0	10	1.0	mg/l	DK1		10.0			0	10	
Batch: 11L2744 Extracted: 12/20/11												
Blank Analyzed: 12/20/2011 (11L2744-BLK1)												
Total Cyanide	ND	5.0	2.2	ug/l	PxI							
LCS Analyzed: 12/20/2011 (11L2744-BS1)												
Total Cyanide	95.6	5.0	2.2	ug/l	PxI	100		96	90-110			
Matrix Spike Analyzed: 12/20/2011 (11L2744-MS1)							**Source: IUL1262-01**					
Total Cyanide	92.6	5.0	2.2	ug/l	PxI	100	ND	93	70-115			
Matrix Spike Dup Analyzed: 12/20/2011 (11L2744-MSD1)							**Source: IUL1262-01**					
Total Cyanide	99.4	5.0	2.2	ug/l	PxI	100	ND	99	70-115	7	15	

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Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1353086 Extracted: 12/19/11												
Blank Analyzed: 12/20/2011 (G1L190000086B)						**Source:**						
1,2,3,4,6,7,8-HpCDD	0.000015	0.00005	.000001	ug/L	SO				-			*J*
1,2,3,4,6,7,8-HpCDF	0.000017	0.00005	.000001	ug/L	SO				-			*J*
1,2,3,4,7,8,9-HpCDF	0.000015	0.00005	.000002	ug/L	SO				-			*J*
1,2,3,4,7,8-HxCDD	0.0000092	0.00005	.000001	ug/L	SO				-			*J, Q*
1,2,3,4,7,8-HxCDF	0.000012	0.00005	.000002	ug/L	SO				-			*J*
1,2,3,6,7,8-HxCDD	0.000011	0.00005	.000001	ug/L	SO				-			*J*
1,2,3,6,7,8-HxCDF	0.00001	0.00005	.000002	ug/L	SO				-			*J*
1,2,3,7,8,9-HxCDD	0.0000099	0.00005	.000001	ug/L	SO				-			*J*
1,2,3,7,8,9-HxCDF	0.000011	0.00005	.000002	ug/L	SO				-			*J*
1,2,3,7,8-PeCDD	0.000008	0.00005	.000003	ug/L	SO				-			*J*
1,2,3,7,8-PeCDF	0.0000086	0.00005	.000006	ug/L	SO				-			*J, Q*
2,3,4,6,7,8-HxCDF	0.000011	0.00005	.000002	ug/L	SO				-			*J*
2,3,4,7,8-PeCDF	0.0000069	0.00005	.000006	ug/L	SO				-			*J, Q*
2,3,7,8-TCDD	ND	0.00001	.000003	ug/L	SO				-			
2,3,7,8-TCDF	ND	0.00001	.000006	ug/L	SO				-			
OCDD	0.000035	0.0001	.000003	ug/L	SO				-			*J*
OCDF	0.000033	0.0001	.000002	ug/L	SO				-			*J*
Total HpCDD	0.000017	0.00005	.000001	ug/L	SO				-			*J*
Total HpCDF	0.000032	0.00005	.000002	ug/L	SO				-			*J*
Total HxCDD	0.00003	0.00005	.000001	ug/L	SO				-			*J, Q*
Total HxCDF	0.000044	0.00005	.000002	ug/L	SO				-			*J*
Total PeCDD	0.000008	0.00005	.000003	ug/L	SO				-			*J*
Total PeCDF	0.000015	0.00005	.000006	ug/L	SO				-			*J, Q*
Total TCDD	ND	0.00001	.000003	ug/L	SO				-			
Total TCDF	ND	0.00001	.000006	ug/L	SO				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	*0.0011*			*ug/L*	SO	*0.002*		*54*	*23-140*			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	*0.0011*			*ug/L*	SO	*0.002*		*53*	*28-143*			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	*0.001*			*ug/L*	SO	*0.002*		*52*	*26-138*			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	*0.0012*			*ug/L*	SO	*0.002*		*60*	*32-141*			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	*0.0011*			*ug/L*	SO	*0.002*		*53*	*26-152*			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	*0.001*			*ug/L*	SO	*0.002*		*52*	*28-130*			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	*0.00099*			*ug/L*	SO	*0.002*		*50*	*26-123*			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	*0.0011*			*ug/L*	SO	*0.002*		*56*	*29-147*			
Surrogate: 13C-1,2,3,7,8-PeCDD	*0.0012*			*ug/L*	SO	*0.002*		*61*	*25-181*			
Surrogate: 13C-1,2,3,7,8-PeCDF	*0.0011*			*ug/L*	SO	*0.002*		*53*	*24-185*			

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Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1353086 Extracted: 12/19/11												
Blank Analyzed: 12/20/2011 (G1L190000086B)						**Source:**						
Surrogate: 13C-2,3,4,6,7,8-HxCDF	*0.0011*			*ug/L*	SO	*0.002*		*56*	*28-136*			
Surrogate: 13C-2,3,4,7,8-PeCDF	*0.0011*			*ug/L*	SO	*0.002*		*53*	*21-178*			
Surrogate: 13C-2,3,7,8-TCDD	*0.0011*			*ug/L*	SO	*0.002*		*54*	*25-164*			
Surrogate: 13C-2,3,7,8-TCDF	*0.001*			*ug/L*	SO	*0.002*		*52*	*24-169*			
Surrogate: 13C-OCDD	*0.002*			*ug/L*	SO	*0.004*		*51*	*17-157*			
Surrogate: 37Cl4-2,3,7,8-TCDD	*0.00077*			*ug/L*	SO	*0.0008*		*97*	*35-197*			
LCS Analyzed: 12/20/2011 (G1L190000086C)						**Source:**						
1,2,3,4,6,7,8-HpCDD	0.00105	0.00005	.000003	ug/L	SO	0.001		105	70-140			*B*
1,2,3,4,6,7,8-HpCDF	0.00106	0.00005	.000008	ug/L	SO	0.001		106	82-122			*B*
1,2,3,4,7,8,9-HpCDF	0.0011	0.00005	0.000011	ug/L	SO	0.001		110	78-138			*B*
1,2,3,4,7,8-HxCDD	0.00101	0.00005	.000002	ug/L	SO	0.001		101	70-164			*B*
1,2,3,4,7,8-HxCDF	0.00107	0.00005	.000003	ug/L	SO	0.001		107	72-134			*B*
1,2,3,6,7,8-HxCDD	0.000982	0.00005	0.000002	ug/L	SO	0.001		98	76-134			*B*
1,2,3,6,7,8-HxCDF	0.00103	0.00005	.000003	ug/L	SO	0.001		103	84-130			*B*
1,2,3,7,8,9-HxCDD	0.000966	0.00005	.000001	ug/L	SO	0.001		97	64-162			*B*
1,2,3,7,8,9-HxCDF	0.00105	0.00005	.000003	ug/L	SO	0.001		105	78-130			*B*
1,2,3,7,8-PeCDD	0.000972	0.00005	.000006	ug/L	SO	0.001		97	70-142			*B*
1,2,3,7,8-PeCDF	0.00104	0.00005	.000008	ug/L	SO	0.001		104	80-134			*B*
2,3,4,6,7,8-HxCDF	0.00105	0.00005	.000002	ug/L	SO	0.001		105	70-156			*B*
2,3,4,7,8-PeCDF	0.00109	0.00005	.000009	ug/L	SO	0.001		109	68-160			*B*
2,3,7,8-TCDD	0.000206	0.00001	.000004	ug/L	SO	0.0002		103	67-158			
2,3,7,8-TCDF	0.000233	0.00001	.000007	ug/L	SO	0.0002		117	75-158			
OCDD	0.00206	0.0001	.000005	ug/L	SO	0.002		103	78-144			*B*
OCDF	0.002	0.0001	.000004	ug/L	SO	0.002		100	63-170			*B*
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	*0.000838*			*ug/L*	SO	*0.002*		*42*	*26-166*			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	*0.000727*			*ug/L*	SO	*0.002*		*36*	*21-158*			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	*0.000774*			*ug/L*	SO	*0.002*		*39*	*20-186*			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	*0.000848*			*ug/L*	SO	*0.002*		*42*	*21-193*			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	*0.000763*			*ug/L*	SO	*0.002*		*38*	*19-202*			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	*0.000796*			*ug/L*	SO	*0.002*		*40*	*25-163*			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	*0.000746*			*ug/L*	SO	*0.002*		*37*	*21-159*			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	*0.000784*			*ug/L*	SO	*0.002*		*39*	*17-205*			
Surrogate: 13C-1,2,3,7,8-PeCDD	*0.000916*			*ug/L*	SO	*0.002*		*46*	*21-227*			
Surrogate: 13C-1,2,3,7,8-PeCDF	*0.000783*			*ug/L*	SO	*0.002*		*39*	*21-192*			

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Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1353086 Extracted: 12/19/11												
LCS Analyzed: 12/20/2011 (G1L190000086C)						**Source:**						
Surrogate: 13C-2,3,4,6,7,8-HxCDF	*0.000786*			*ug/L*	SO	*0.002*		*39*	*22-176*			
Surrogate: 13C-2,3,4,7,8-PeCDF	*0.000757*			*ug/L*	SO	*0.002*		*38*	*13-328*			
Surrogate: 13C-2,3,7,8-TCDD	*0.000803*			*ug/L*	SO	*0.002*		*40*	*20-175*			
Surrogate: 13C-2,3,7,8-TCDF	*0.000774*			*ug/L*	SO	*0.002*		*39*	*22-152*			
Surrogate: 13C-OCDD	*0.00171*			*ug/L*	SO	*0.004*		*43*	*13-199*			
Surrogate: 37Cl4-2,3,7,8-TCDD	*0.000784*			*ug/L*	SO	*0.0008*		*98*	*31-191*			

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Project ID: Routine Outfall 009
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Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

METHOD BLANK/QC DATA

8697

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8697 Extracted: 12/28/11												
LCS Analyzed: 12/28/2011 (S112037-03)						**Source:**						
Uranium, Total	57	1	0.158	pCi/L	CSS	56.5		101	80-120			
Blank Analyzed: 12/28/2011 (S112037-04)						**Source:**						
Uranium, Total	ND	1	0.016	pCi/L	CSS				-			*U*
Duplicate Analyzed: 12/28/2011 (S112037-05)						**Source: IUL1224-02**						
Uranium, Total	0.045	1	0.016	pCi/L	CSS		0.05		-	11		*Jb*

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Report Number: IUL1224

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Received: 12/12/11

METHOD BLANK/QC DATA

900

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8697 Extracted: 12/28/11												
LCS Analyzed: 12/29/2011 (S112037-03)						**Source:**						
Gross Alpha	41.9	3	0.485	pCi/L	DVP	33.7		124	70-130			
Gross Beta	26.4	4	0.821	pCi/L	DVP	28.5		93	70-130			
Blank Analyzed: 01/03/2012 (S112037-04)						**Source:**						
Gross Alpha	0.002	3	0.549	pCi/L	DVP				-			*U*
Gross Beta	-0.237	4	0.822	pCi/L	DVP				-			*U*
Duplicate Analyzed: 12/29/2011 (S112037-05)						**Source: IUL1224-02**						
Gross Alpha	0.58	3	0.401	pCi/L	DVP		0.621		-	7		*Jb*
Gross Beta	1.81	4	0.822	pCi/L	DVP		1.59		-	13		*Jb*

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Received: 12/12/11

METHOD BLANK/QC DATA

901.1

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8697 Extracted: 12/22/11												
LCS Analyzed: 12/27/2011 (S112037-03)						**Source:**						
Cobalt-60	106	10	2.03	pCi/L	LS	112		95	80-120			
Cesium-137	119	20	2.39	pCi/L	LS	124		96	80-120			
Blank Analyzed: 12/27/2011 (S112037-04)						**Source:**						
Cesium-137	ND	20	1.27	pCi/L	LS				-			*U*
Potassium-40	ND	25	18.5	pCi/L	LS				-			*U*
Duplicate Analyzed: 12/27/2011 (S112037-05)						**Source: IUL1224-02**						
Cesium-137	ND	20	1.16	pCi/L	LS		0		-	0		*U*
Potassium-40	ND	25	12.4	pCi/L	LS		0		-	0		*U*

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Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

METHOD BLANK/QC DATA

903.1

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8697 Extracted: 12/29/11												
LCS Analyzed: 12/29/2011 (S112037-03)						**Source:**						
Radium-226	63	1	0.79	pCi/L	TM	55.7		113	80-120			
Blank Analyzed: 12/29/2011 (S112037-04)						**Source:**						
Radium-226	-0.005	1	0.594	pCi/L	TM				-			*U*
Duplicate Analyzed: 12/29/2011 (S112037-05)						**Source: IUL1224-02**						
Radium-226	0.057	1	0.541	pCi/L	TM		0.078		-	0		*U*

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Project ID: Routine Outfall 009
Routine Outfall 009
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Sampled: 12/12/11-12/14/11
Received: 12/12/11

METHOD BLANK/QC DATA

904

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8697 Extracted: 01/03/12												
LCS Analyzed: 01/03/2012 (S112037-03)						**Source:**						
Radium-228	5.47	1	0.448	pCi/L	ASM	5.5		99	60-140			
Blank Analyzed: 01/03/2012 (S112037-04)						**Source:**						
Radium-228	-0.183	1	0.439	pCi/L	ASM				-			*U*
Duplicate Analyzed: 01/03/2012 (S112037-05)						**Source: IUL1224-02**						
Radium-228	0.091	1	0.43	pCi/L	ASM		0.035		-	0		*U*

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Received: 12/12/11

METHOD BLANK/QC DATA

905

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8697 Extracted: 12/28/11												
LCS Analyzed: 12/28/2011 (S112037-03)						**Source:**						
Strontium-90	20	2	0.559	pCi/L	WL	18.8		106	80-120			
Blank Analyzed: 12/29/2011 (S112037-04)						**Source:**						
Strontium-90	0.118	2	0.99	pCi/L	WL				-			*U*
Duplicate Analyzed: 12/29/2011 (S112037-05)						**Source: IUL1224-02**						
Strontium-90	0.344	2	1	pCi/L	WL		0.094		-	0		*U*

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Received: 12/12/11

METHOD BLANK/QC DATA

906

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8697 Extracted: 12/20/11												
LCS Analyzed: 12/21/2011 (S112037-03)						**Source:**						
Tritium	224	500	15.6	pCi/L	WL	226		99	80-120			*Jb*
Blank Analyzed: 12/21/2011 (S112037-04)						**Source:**						
Tritium	-1.57	500	15.9	pCi/L	WL				-			*U*
Duplicate Analyzed: 12/21/2011 (S112037-05)						**Source: IUL1224-02**						
Tritium	8	500	163	pCi/L	WL		-33.7		-	0		*U*

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Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

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
IUL1224-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0	4.7	15

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
IUL1224-02	Cadmium-200.8	Cadmium	ug/l	0.057	1.0	3.1
IUL1224-02	Chloride - 300.0	Chloride	mg/l	1.18	0.50	150
IUL1224-02	Copper-200.8	Copper	ug/l	2.33	2.0	14
IUL1224-02	Lead-200.8	Lead	ug/l	1.27	1.0	5.2
IUL1224-02	Nitrogen, NO3+NO2 -N EPA 300.0	Nitrate/Nitrite-N	mg/l	0.40	0.26	8
IUL1224-02	Sulfate-300.0	Sulfate	mg/l	36	0.50	300
IUL1224-02	TDS - SM2540C	Total Dissolved Solids	mg/l	69	10	950

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

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Report Number: IUL1224

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DATA QUALIFIERS AND DEFINITIONS

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J	Estimated result. Result is less than the reporting limit.
Ja	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Jb	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
M-3	Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
MNR1	There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
Q	Estimated maximum possible concentration (EMPC).
U	The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUL1224

Sampled: 12/12/11-12/14/11
Received: 12/12/11

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EPA 1664A	Water	X	X
EPA 200.8-Diss	Water	X	N/A
EPA 200.8	Water	X	N/A
EPA 245.1-Diss	Water	X	N/A
EPA 245.1	Water	X	N/A
EPA 300.0	Water	X	N/A
Filtration	Water	N/A	N/A
SM 2540D	Water	X	X
SM2540C	Water	X	N/A
SM4500CN-E	Water	X	N/A

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

Subcontracted Laboratories

TestAmerica Irvine

Debby Wilson
Project Manager

TestAmerica
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Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec
Samples: IUL1224-02, IUL1224-03

Analysis Performed: Gross Alpha
Samples: IUL1224-02, IUL1224-03

Analysis Performed: Gross Beta
Samples: IUL1224-02, IUL1224-03

Analysis Performed: Radium, Combined
Samples: IUL1224-02, IUL1224-03

Analysis Performed: Strontium 90
Samples: IUL1224-02, IUL1224-03

Analysis Performed: Tritium
Samples: IUL1224-02

Analysis Performed: Uranium, Combined
Samples: IUL1224-02, IUL1224-03

Method Performed: 8697
Samples: IUL1224-02, IUL1224-03

Method Performed: 900
Samples: IUL1224-02, IUL1224-03

Method Performed: 901.1
Samples: IUL1224-02, IUL1224-03

Method Performed: 903.1
Samples: IUL1224-02, IUL1224-03

Method Performed: 904
Samples: IUL1224-02, IUL1224-03

Method Performed: 905
Samples: IUL1224-02, IUL1224-03

Method Performed: 906
Samples: IUL1224-02

TestAmerica Irvine

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 009
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Sampled: 12/12/11-12/14/11
Received: 12/12/11

TestAmerica West Sacramento *NELAC Cert #1119CA, Nevada Cert #CA44*

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B

Samples: IUL1224-02

TestAmerica Irvine

Debby Wilson
Project Manager

CHAIN OF CUSTODY FORM

I VL1224

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Routine Outfall 009** **GRAB** Stormwater at SW-13
Project Manager: Bronwyn Kelly Sampler: Rick BAÑAGA	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	ANALYSIS REQUIRED: Oil & Grease (1664-HEM)														Comments
Outfall 009	W	1L Amber	2	12-12-2011 11:00	HCl	1A, 1B	X														

Field readings:
(Log in and include in report Temp and pH)

Temp °F = 53°

pH = 6.9

Time of readings = 11:00

MS 12/13/11 0825

These Samples are the Grab Portion of Outfall 009 for this storm event. Composite samples will follow and are to be added to this work order.

Relinquished By	Date/Time:	Received By	Date/Time:
	12-12-2011 14:25		12-12-11 14:25
Relinquished By	Date/Time:	Received By	Date/Time:
	12-12-11 18:15		
Relinquished By	Date/Time:	Received By	Date/Time:
		Stephnie Ann	12/12/11 18:15

Turn-around time: (Check)

24 Hour: _____ 72 Hour: _____ 10 Day: _____

48 Hour: _____ 5 Day: _____ Normal: X

Sample Integrity: (Check)

Intact: ✓ On Ice: X

Data Requirements: (Check)

No Level IV: _____ All Level IV: _____ NPDES Level IV: X

4.3c

12M03

CHAIN OF CUSTODY FORM

I UL 1224

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Routine Outfall 009** **COMPOSITE** - HIGH Stormwater at SW-13
Project Manager: Bronwyn Kelly Sampler: Rick BANACH	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl	TCDD (and all congeners)	Cl⁻, SO_4, NO_3+NO_2-N	TDS, TSS	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1)	Chronic Toxicity	Cyanide							Comments
Outfall 009	W	1L Poly	1	12-12-2011 14:47	HNO_3	2A	X														
Outfall 009 Dup	W	1L Poly	1		HNO_3	2B	X														
Outfall 009	W	1L Amber	2		None	3A, 3B		X													
Outfall 009	W	500 mL Poly	2		None	4A, 4B			X												
Outfall 009	W	500 mL Poly	1		None	5				X											
Outfall 009	W	1L Poly	1		None	6					X										Filter w/in 24hrs of receipt at lab
Outfall 009	W	2.5 Gal Cube	1	12-12-2011 14:47	None	7A						X									~~Unfiltered and unpreserved~~ analysis
		500 mL Amber	1		None	7B															
~~Outfall 009~~	~~W~~	~~1 Gal Poly~~	~~1~~		~~None~~	~~8~~							X								~~Only test if first or second rain events of the year~~
Outfall 009	W	500 mL Poly	1	12-12-2011 14:47	NaOH	9								X							

COC Page 2 of 2 list the Composite Samples for Outfall 009 for this storm event.

These must be added to the same work order for COC Page 1 of 2 for Outfall 009 for the same event.

Relinquished By	Date/Time:	Received By	Date/Time:
	12-13-11 15:15		12-13-11 15:15
Relinquished By	Date/Time:	Received By	Date/Time:
	12-13-11 18:20		
Relinquished By	Date/Time:	Received By	Date/Time:
		Stephanie Avila	12/13/11 1820

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: _____
48 Hour: _____ 5 Day: _____ Normal: X

Sample Integrity: (Check)
Intact: _____ On Ice: X

Data Requirements: (Check)
No Level IV: _____ All Level IV: _____ NPDES Level IV: X

1.5 C
2.3 C

13 M 04

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
2030 Wright Avenue
Richmond, California 94804-3849
Phone (510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

January 9, 2012

Ms. Debby Wilson
Test America Irvine
17461 Derian Ave., Ste. 100
Irvine, CA 92614

Reference: **Test America-Irvine IUL1224**
Eberline Analytical Report S112037-8697
Sample Delivery Group 8697

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for two water samples received under Test America Job No. IUL1224. The samples were received on December 15, 2011.

Please call me, if you have any questions concerning the enclosed report.

Sincerely,

Joseph Verville
Client Services Manager

NJV/kwp

Enclosure: Level IV CLP-like Data Package CD

1.0 General Comments

Sample delivery group 8697 consists of the analytical results and supporting documentation for two water samples. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The samples were received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

Tritium and gamma analyses were performed on the samples as received i.e. the samples were not filtered. The analytical volumes for all other analyses were subjected to a full nitric acid/hydrofluoric acid dissolution, and analyses were performed on the dissolution volumes.

2.0 Quality Control

Quality Control Samples consisted of laboratory control samples (LCS), method blanks, and duplicate analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

3.0 Method Errors

The error for each result is an estimate of the significant random uncertainties incurred in the measurement process. These are propagated to each final result. They include the counting (Poisson) uncertainty, as well as those intrinsic errors due to carrier or tracer standardization, aliquoting, counter efficiencies, weights, or volumes. The following method errors were propagated to the count error to calculate the 2σ error (Total):

Analysis	Method Error
Gross alpha	20.6%
Gross beta	11.0%
Tritium	10.0%
Sr-90	10.4%
Ra-226	16.4%
Ra-228	10.4%
Uranium,Total	
Gamma Spec.	7.0%

4.0 Analysis Notes

4.1 Gross Alpha/Gross Beta Analysis – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.2 Tritium Analysis – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.3 Strontium-90 Analysis – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.4 Radium-226 Analysis – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

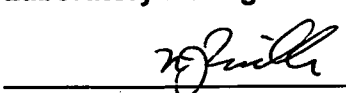
4.5 Radium-228 Analysis - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits

4.6 Total Uranium Analysis - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.7 Gamma Spectroscopy – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

5.0 Case Narrative Certification Statement

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



Joseph Verville
Client Services Manager

1/9/12
Date

EBERLINE ANALYTICAL
SDG 8697

SDG 8697
Contact Joseph Verville

Client Test America, Inc.
Contract IUL1224

SUMMARY DATA SECTION

TABLE OF CONTENTS

Prepared by

Reviewed by

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

SDG 8697
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUL1224

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DUPLICATES

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 01/09/12

SDG 8697
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract IUL1224

ABOUT THE DATA SUMMARY SECTION

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

LAB SAMPLE SUMMARY

SDG 8697
Contact Joseph Verville

Client Test America, Inc.
Contract IUL1224

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S112037-01	IUL1224-02	Boeing - SSFL	WATER			IUL1224	12/12/11 14:47
S112037-02	IUL1224-03 (TRIP-BLANK)	Boeing - SSFL	WATER			IUL1224	12/14/11 12:00
S112037-03	Lab Control Sample		WATER				
S112037-04	Method Blank		WATER				
S112037-05	Duplicate (S112037-01)	Boeing - SSFL	WATER				12/12/11 14:47

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

QC SUMMARY

SDG 8697
Contact Joseph Verville

Client Test America, Inc.
Contract IUL1224

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8697	IUL1224	IUL1224-02	WATER		10.0 L			S112037-01	8697-001
		IUL1224-03 (TRIP-BLANK)	WATER		10.0 L			S112037-02	8697-002
		Method Blank	WATER					S112037-04	8697-004
		Lab Control Sample	WATER					S112037-03	8697-003
		Duplicate (S112037-01)	WATER		10.0 L			S112037-05	8697-005

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

PREP BATCH SUMMARY

SDG 8697
Contact Joseph Verville

Client Test America, Inc.
Contract IUL1224

TEST	MATRIX	METHOD	PREPARATION ERROR BATCH	2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Beta Counting												
AC	WATER	Radium-228 in Water	7281-204	10.4	2			1	1	1/1		
SR	WATER	Strontium-90 in Water	7281-204	10.4	2			1	1	1/1		
Gas Proportional Counting												
80A	WATER	Gross Alpha in Water	7281-204	20.6	2			1	1	1/1		
80B	WATER	Gross Beta in Water	7281-204	11.0	2			1	1	1/1		
Gamma Spectroscopy												
GAM	WATER	Gamma Emitters in Water	7281-204	7.0	2			1	1	1/1		
Kinetic Phosphorimetry, ug												
U_T	WATER	Uranium, Total	7281-204		2			1	1	1/1		
Liquid Scintillation Counting												
H	WATER	Tritium in Water	7281-204	10.0	1			1	1	1/1		
Radon Counting												
RA	WATER	Radium-226 in Water	7281-204	16.4	2			1	1	1/1		

Blank, LCS, Duplicate and Spike planchets are those in the same preparation batch as some Client sample.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

SDG 8697
Contact Joseph Verville

LAB WORK SUMMARY

Client Test America, Inc.
Contract IUL1224

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY / SAS no	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
S112037-01	IUL1224-02		8697-001	80A/80		12/29/11	01/04/12	BW	Gross Alpha in Water
12/12/11	Boeing - SSFL	WATER	8697-001	80B/80		12/29/11	01/04/12	BW	Gross Beta in Water
	IUL1224		8697-001	AC		01/03/12	01/04/12	KWP	Radium-228 in Water
			8697-001	GAM		12/27/11	12/29/11	BW	Gamma Emitters in Water
			8697-001	H		12/21/11	12/27/11	BW	Tritium in Water
			8697-001	RA		12/29/11	12/29/11	BW	Radium-226 in Water
			8697-001	SR		12/29/11	01/05/12	BW	Strontium-90 in Water
			8697-001	U_T		12/28/11	12/29/11	BW	Uranium, Total
S112037-02	IUL1224-03 (TRIP-BLANK)		8697-002	80A/80		12/29/11	01/04/12	BW	Gross Alpha in Water
12/14/11	Boeing - SSFL	WATER	8697-002	80B/80		12/29/11	01/04/12	BW	Gross Beta in Water
	IUL1224		8697-002	AC		01/03/12	01/04/12	KWP	Radium-228 in Water
			8697-002	GAM		12/27/11	12/29/11	BW	Gamma Emitters in Water
			8697-002	RA		12/29/11	12/29/11	BW	Radium-226 in Water
			8697-002	SR		12/29/11	01/05/12	BW	Strontium-90 in Water
			8697-002	U_T		12/28/11	12/29/11	BW	Uranium, Total
S112037-03	Lab Control Sample		8697-003	80A/80		12/29/11	01/04/12	BW	Gross Alpha in Water
		WATER	8697-003	80B/80		12/29/11	01/04/12	BW	Gross Beta in Water
			8697-003	AC		01/03/12	01/04/12	KWP	Radium-228 in Water
			8697-003	GAM		12/27/11	12/29/11	BW	Gamma Emitters in Water
			8697-003	H		12/21/11	12/27/11	BW	Tritium in Water
			8697-003	RA		12/29/11	12/29/11	BW	Radium-226 in Water
			8697-003	SR		12/28/11	01/05/12	BW	Strontium-90 in Water
			8697-003	U_T		12/28/11	12/29/11	BW	Uranium, Total
S112037-04	Method Blank		8697-004	80A/80		01/03/12	01/04/12	BW	Gross Alpha in Water
		WATER	8697-004	80B/80		01/03/12	01/04/12	BW	Gross Beta in Water
			8697-004	AC		01/03/12	01/04/12	KWP	Radium-228 in Water
			8697-004	GAM		12/27/11	12/29/11	BW	Gamma Emitters in Water
			8697-004	H		12/21/11	12/27/11	BW	Tritium in Water
			8697-004	RA		12/29/11	12/29/11	BW	Radium-226 in Water
			8697-004	SR		12/29/11	01/05/12	BW	Strontium-90 in Water
			8697-004	U_T		12/28/11	12/29/11	BW	Uranium, Total

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

WORK SUMMARY, cont.

SDG 8697
Contact Joseph Verville

Client Test America, Inc.
Contract IUL1224

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY	SAS no	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
S112037-05	Duplicate (S112037-01)			8697-005	80A/80		12/29/11	01/04/12	BW	Gross Alpha in Water
12/12/11	Boeing - SSFL		WATER	8697-005	80B/80		12/29/11	01/04/12	BW	Gross Beta in Water
				8697-005	AC		01/03/12	01/04/12	KWP	Radium-228 in Water
				8697-005	GAM		12/27/11	12/29/11	BW	Gamma Emitters in Water
				8697-005	H		12/21/11	12/27/11	BW	Tritium in Water
				8697-005	RA		12/29/11	12/29/11	BW	Radium-226 in Water
				8697-005	SR		12/29/11	01/05/12	BW	Strontium-90 in Water
				8697-005	U_T		12/28/11	12/29/11	BW	Uranium, Total

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAS no	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
80A/80		Gross Alpha in Water	900.0	2			1	1	1	5
80B/80		Gross Beta in Water	900.0	2			1	1	1	5
AC		Radium-228 in Water	904.0	2			1	1	1	5
GAM		Gamma Emitters in Water	901.1	2			1	1	1	5
H		Tritium in Water	906.0	1			1	1	1	4
RA		Radium-226 in Water	903.1	2			1	1	1	5
SR		Strontium-90 in Water	905.0	2			1	1	1	5
U_T		Uranium, Total	D5174	2			1	1	1	5
TOTALS				15			8	8	8	39

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

8697-004 Method Blank

METHOD BLANK

SDG	8697	Client	Test America, Inc.
Contact	Joseph Verville	Contract	IUL1224
Lab sample id	S112037-04	Client sample id	Method Blank
Dept sample id	8697-004	Material/Matrix	WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	0.002	0.30	0.549	3.00	U	80A
Gross Beta	12587472	-0.237	0.49	0.822	4.00	U	80B
Tritium	10028178	-1.57	9.3	15.9	500	U	H
Radium-226	13982633	-0.005	0.33	0.594	1.00	U	RA
Radium-228	15262201	-0.183	0.20	0.439	1.00	U	AC
Strontium-90	10098972	0.118	0.45	0.990	2.00	U	SR
Uranium, Total		0	0.007	0.016	1.00	U	U_T
Potassium-40	13966002	U		18.5	25.0	U	GAM
Cesium-137	10045973	U		1.27	20.0	U	GAM

QC-BLANK #80753

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/09/12

EBERLINE ANALYTICAL

SDG 8697

8697-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG 8697 | Client Test America, Inc.

Contact Joseph Verville | Contract IUL1224

Lab sample id S112037-03 | Client sample id Lab Control Sample

Dept sample id 8697-003 | Material/Matrix WATER

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	41.9	2.3	0.485	3.00		80A	33.7	1.3	124	73-127	70-130
Gross Beta	26.4	1.1	0.821	4.00		80B	28.5	1.1	93	88-112	70-130
Tritium	224	15	15.6	500	J	H	226	9.0	99	87-113	80-120
Radium-226	63.0	2.3	0.790	1.00		RA	55.7	2.2	113	81-119	80-120
Radium-228	5.47	0.32	0.448	1.00		AC	5.50	0.22	99	87-113	60-140
Strontium-90	20.0	1.4	0.559	2.00		SR	18.8	0.75	106	86-114	80-120
Uranium, Total	57.0	6.4	0.158	1.00		U_T	56.5	2.3	101	88-112	80-120
Cobalt-60	106	3.8	2.03	10.0		GAM	112	4.5	95	92-108	80-120
Cesium-137	119	3.6	2.39	20.0		GAM	124	5.0	96	92-108	80-120

QC-LCS #80752

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

8697-005 IUL1224-02

DUPLICATE

SDG 8697
Contact Joseph Verville
Client Test America, Inc.
Contract IUL1224

DUPLICATE		ORIGINAL	
Lab sample id	S112037-05	Lab sample id	S112037-01
Dept sample id	8697-005	Dept sample id	8697-001
		Received	

Client sample id IUL1224-02
Location/Matrix Boeing - SSFL WATER
Collected/Volume 12/12/11 14:47 10.0 L
Chain of custody id IUL1224

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	0.580	0.32	0.401	3.00	J	80A	0.621	0.32	0.409	J	7	121	0.2
Gross Beta	1.81	0.55	0.822	4.00	J	80B	1.59	0.59	0.896	J	13	75	0.5
Tritium	8.00	96	163	500	U	H	-33.7	91	156	U	-		0.6
Radium-226	0.057	0.30	0.541	1.00	U	RA	0.078	0.32	0.563	U	-		0.1
Radium-228	0.091	0.16	0.430	1.00	U	AC	0.035	0.17	0.451	U	-		0.5
Strontium-90	0.344	0.49	1.00	2.00	U	SR	0.094	0.48	1.05	U	-		0.7
Uranium, Total	0.045	0.009	0.016	1.00	J	U_T	0.050	0.009	0.016	J	11	40	0.8
Potassium-40	U		12.4	25.0	U	GAM	U		19.5	U	-		0.6
Cesium-137	U		1.16	20.0	U	GAM	U		1.60	U	-		0.4

QC-DUP#1 80754

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

8697-001 IUL1224-02

DATA SHEET

SDG	8697	Client	Test America, Inc.
Contact	Joseph Verville	Contract	IUL1224
Lab sample id	S112037-01	Client sample id	IUL1224-02
Dept sample id	8697-001	Location/Matrix	Boeing - SSFL WATER
Received		Collected/Volume	12/12/11 14:47 10.0 L
		Chain of custody id	IUL1224

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	0.621	0.32	0.409	3.00	J	80A
Gross Beta	12587472	1.59	0.59	0.896	4.00	J	80B
Tritium	10028178	-33.7	91	156	500	U	H
Radium-226	13982633	0.078	0.32	0.563	1.00	U	RA
Radium-228	15262201	0.035	0.17	0.451	1.00	U	AC
Strontium-90	10098972	0.094	0.48	1.05	2.00	U	SR
Uranium, Total		0.050	0.009	0.016	1.00	J	U_T
Potassium-40	13966002	U		19.5	25.0	U	GAM
Cesium-137	10045973	U		1.60	20.0	U	GAM

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/09/12

EBERLINE ANALYTICAL

SDG 8697

8697-002 IUL1224-03 (TRIP-BLANK)

DATA SHEET

SDG	8697	Client	Test America, Inc.
Contact	Joseph Verville	Contract	IUL1224
Lab sample id	S112037-02	Client sample id	IUL1224-03 (TRIP-BLANK)
Dept sample id	8697-002	Location/Matrix	Boeing - SSFL WATER
Received		Collected/Volume	12/14/11 12:00 10.0 L
		Chain of custody id	IUL1224

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	-0.030	0.14	0.274	3.00	U	80A
Gross Beta	12587472	-0.317	0.65	1.07	4.00	U	80B
Radium-226	13982633	-0.033	0.31	0.566	1.00	U	RA
Radium-228	15262201	-0.123	0.16	0.448	1.00	U	AC
Strontium-90	10098972	-0.139	0.39	0.994	2.00	U	SR
Uranium, Total		0.003	0.007	0.016	1.00	U	U_T
Potassium-40	13966002	U		24.9	25.0	U	GAM
Cesium-137	10045973	U		1.21	20.0	U	GAM

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/09/12

EBERLINE ANALYTICAL

SDG 8697

LAB METHOD SUMMARY

RADIUM-228 IN WATER

BETA COUNTING

Test AC Matrix WATER
SDG 8697
Contact Joseph Verville

Client Test America, Inc.
Contract IUL1224

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Radium-228	
Preparation batch 7281-204						
S112037-01			8697-001	IUL1224-02	U	
S112037-02			8697-002	IUL1224-03 (TRIP-BLANK)	U	
S112037-03			8697-003	Lab Control Sample	ok	
S112037-04			8697-004	Method Blank	U	
S112037-05			8697-005	Duplicate (S112037-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7281-204			2σ prep error 10.4 %	Reference Lab Notebook 7281 pg. 204												
S112037-01			IUL1224-02	0.451	1.80			81		150			22	01/03/12	01/03	GRB-217
S112037-02			IUL1224-03 (TRIP-BLANK)	0.448	1.80			80		150			20	01/03/12	01/03	GRB-220
S112037-03			Lab Control Sample	0.448	1.80			80		150				01/03/12	01/03	GRB-221
S112037-04			Method Blank	0.439	1.80			75		150				01/03/12	01/03	GRB-222
S112037-05			Duplicate (S112037-01)	0.430	1.80			82		150			22	01/03/12	01/03	GRB-223
Nominal values and limits from method				1.00	1.80			30-105		50			180			

PROCEDURES REFERENCE 904.0
DWP-894 Sequential Separation of Actinium-228 and Radium-226 in Drinking Water (>1 Liter Aliquot), rev 5

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.443 ± 0.017
YIELD 80 ± 5

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER

BETA COUNTING

Test SR Matrix WATER
SDG 8697
Contact Joseph Verville

Client Test America, Inc.
Contract IUL1224

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Strontium-90	
Preparation batch 7281-204						
S112037-01			8697-001	IUL1224-02	U	
S112037-02			8697-002	IUL1224-03 (TRIP-BLANK)	U	
S112037-03			8697-003	Lab Control Sample	ok	
S112037-04			8697-004	Method Blank	U	
S112037-05			8697-005	Duplicate (S112037-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	2.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7281-204			2σ prep error 10.4 %	Reference Lab Notebook 7281 pg. 204												
S112037-01			IUL1224-02	1.05	0.500			95		50			17	12/28/11	12/29	GRB-201
S112037-02			IUL1224-03 (TRIP-BLANK)	0.994	0.500			88		50			15	12/28/11	12/29	GRB-202
S112037-03			Lab Control Sample	0.559	0.500			92		50				12/28/11	12/28	GRB-220
S112037-04			Method Blank	0.990	0.500			90		50				12/28/11	12/29	GRB-204
S112037-05			Duplicate (S112037-01)	1.00	0.500			93		50			17	12/28/11	12/29	GRB-225
Nominal values and limits from method				2.00	0.500			30-105		50			180			

PROCEDURES REFERENCE 905.0
CP-380 Strontium in Water Samples, rev 5

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.919 ± 0.405
YIELD 92 ± 5

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

LAB METHOD SUMMARY

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

Test 80A Matrix WATER
SDG 8697
Contact Joseph Verville

Client Test America, Inc.
Contract IUL1224

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
Preparation batch 7281-204					
S112037-01	80		8697-001	IUL1224-02	0.621 J
S112037-02	80		8697-002	IUL1224-03 (TRIP-BLANK)	U
S112037-03	80		8697-003	Lab Control Sample	ok
S112037-04	80		8697-004	Method Blank	U
S112037-05	80		8697-005	Duplicate (S112037-01)	ok J
Nominal values and limits from method				RDLs (pCi/L)	3.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7281-204 2σ prep error 20.6 % Reference Lab Notebook 7281 pg. 204																
S112037-01	80		IUL1224-02	0.409	0.300			20		400			17	12/28/11	12/29	GRB-105
S112037-02	80		IUL1224-03 (TRIP-BLANK)	0.274	0.300			0		400			15	12/28/11	12/29	GRB-107
S112037-03	80		Lab Control Sample	0.485	0.300			60		400				12/28/11	12/29	GRB-109
S112037-04	80		Method Blank	0.549	0.300			60		400				12/28/11	01/03	GRB-109
S112037-05	80		Duplicate (S112037-01)	0.401	0.300			20		400			17	12/28/11	12/29	GRB-112
Nominal values and limits from method				3.00	0.300			0-250		100			180			

PROCEDURES REFERENCE 900.0
DWP-121 Gross Alpha and Gross Beta in Drinking Water, rev 10

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.424 ± 0.206
RESIDUE 32 ± 54

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

LAB METHOD SUMMARY

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Test 80B Matrix WATER
SDG 8697
Contact Joseph Verville

Client Test America, Inc.
Contract IUL1224

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
Preparation batch 7281-204						
S112037-01	80		8697-001	IUL1224-02	1.59	J
S112037-02	80		8697-002	IUL1224-03 (TRIP-BLANK)	U	
S112037-03	80		8697-003	Lab Control Sample	ok	
S112037-04	80		8697-004	Method Blank	U	
S112037-05	80		8697-005	Duplicate (S112037-01)	ok	J
Nominal values and limits from method				RDLs (pCi/L)	4.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7281-204			2σ prep error 11.0 %	Reference Lab Notebook 7281 pg. 204												
S112037-01	80		IUL1224-02	0.896	0.300			20		400			17	12/28/11	12/29	GRB-105
S112037-02	80		IUL1224-03 (TRIP-BLANK)	1.07	0.300			0		400			15	12/28/11	12/29	GRB-107
S112037-03	80		Lab Control Sample	0.821	0.300			60		400				12/28/11	12/29	GRB-109
S112037-04	80		Method Blank	0.822	0.300			60		400				12/28/11	01/03	GRB-109
S112037-05	80		Duplicate (S112037-01)	0.822	0.300			20		400			17	12/28/11	12/29	GRB-112
Nominal values and limits from method				4.00	0.300			0-250		100			180			

PROCEDURES REFERENCE 900.0
DWP-121 Gross Alpha and Gross Beta in Drinking Water, rev 10

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.886 ± 0.215
RESIDUE 32 ± 54

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

Test GAM Matrix WATER
SDG 8697
Contact Joseph Verville

Client Test America, Inc.
Contract IUL1224

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137	
Preparation batch 7281-204							
S112037-01			8697-001	IUL1224-02		U	
S112037-02			8697-002	IUL1224-03 (TRIP-BLANK)		U	
S112037-03			8697-003	Lab Control Sample	ok	ok	
S112037-04			8697-004	Method Blank		U	
S112037-05			8697-005	Duplicate (S112037-01)		-	U
Nominal values and limits from method				RDLs (pCi/L)	10.0	20.0	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7281-204			2σ prep error 7.0 %		Reference Lab Notebook 7281 pg. 204											
S112037-01			IUL1224-02		2.00					400			15	12/22/11	12/27	MB,08,00
S112037-02			IUL1224-03 (TRIP-BLANK)		2.00					794			13	12/22/11	12/27	01,02,00
S112037-03			Lab Control Sample		2.00					795				12/22/11	12/27	01,03,00
S112037-04			Method Blank		2.00					795				12/22/11	12/27	01,04,00
S112037-05			Duplicate (S112037-01)		2.00					795			15	12/22/11	12/27	MB,08,00
Nominal values and limits from method				6.00	2.00					400			180			

PROCEDURES REFERENCE 901.1
DWP-100 Preparation of Drinking Water Samples for Gamma Spectroscopy, rev 5

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

Test U T Matrix WATER
SDG 8697
Contact Joseph Verville

LAB METHOD SUMMARY

URANIUM, TOTAL

KINETIC PHOSPHORIMETRY, UG

Client Test America, Inc.
Contract IUL1224

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Uranium, Total	
Preparation batch 7281-204						
S112037-01			8697-001	IUL1224-02	0.050	J
S112037-02			8697-002	IUL1224-03 (TRIP-BLANK)	U	
S112037-03			8697-003	Lab Control Sample	ok	
S112037-04			8697-004	Method Blank	U	
S112037-05			8697-005	Duplicate (S112037-01)	ok	J
Nominal values and limits from method				RDLs (pCi/L)	1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7281-204			2σ prep error	Reference Lab Notebook 7281 pg. 204												
S112037-01			IUL1224-02	0.016	0.0200								16	12/28/11	12/28	KPA-001
S112037-02			IUL1224-03 (TRIP-BLANK)	0.016	0.0200								14	12/28/11	12/28	KPA-001
S112037-03			Lab Control Sample	0.158	0.0200									12/28/11	12/28	KPA-001
S112037-04			Method Blank	0.016	0.0200									12/28/11	12/28	KPA-001
S112037-05			Duplicate (S112037-01)	0.016	0.0200								16	12/28/11	12/28	KPA-001
Nominal values and limits from method				1.00	0.0200								180			

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.044 ± 0.127
YIELD ____ ± ____

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

Test H Matrix WATER
SDG 8697
Contact Joseph Verville

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Client Test America, Inc.
Contract IUL1224

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
Preparation batch 7281-204						
S112037-01			8697-001	IUL1224-02	U	
S112037-03			8697-003	Lab Control Sample	ok	J
S112037-04			8697-004	Method Blank	U	
S112037-05			8697-005	Duplicate (S112037-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	500	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7281-204			2σ prep error 10.0 %	Reference Lab Notebook 7281 pg. 204												
S112037-01			IUL1224-02	156	0.0100			100		150			9	12/20/11	12/21	LSC-004
S112037-03			Lab Control Sample	15.6	1.00			10		150				12/20/11	12/21	LSC-004
S112037-04			Method Blank	15.9	1.00			10		150				12/20/11	12/21	LSC-004
S112037-05			Duplicate (S112037-01)	163	0.0100			100		150			9	12/20/11	12/21	LSC-004
Nominal values and limits from method				500	0.0100					100			180			

PROCEDURES REFERENCE 906.0
DWP-212 Tritium in Drinking Water by Distillation, rev 8

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 87.6 ± 166
YIELD 55 ± 104

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

LAB METHOD SUMMARY

RADIUM-226 IN WATER

RADON COUNTING

Test RA Matrix WATER
SDG 8697
Contact Joseph Verville

Client Test America, Inc.
Contract IUL1224

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Radium-226	
Preparation batch 7281-204						
S112037-01			8697-001	IUL1224-02	U	
S112037-02			8697-002	IUL1224-03 (TRIP-BLANK)	U	
S112037-03			8697-003	Lab Control Sample	ok	
S112037-04			8697-004	Method Blank	U	
S112037-05			8697-005	Duplicate (S112037-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7281-204			2σ prep error 16.4 %	Reference Lab Notebook 7281 pg. 204												
S112037-01			IUL1224-02	0.563	0.100			100		160			17	12/29/11	12/29	RN-012
S112037-02			IUL1224-03 (TRIP-BLANK)	0.566	0.100			100		160			15	12/29/11	12/29	RN-013
S112037-03			Lab Control Sample	0.790	0.100			100		160				12/29/11	12/29	RN-009
S112037-04			Method Blank	0.594	0.100			100		160				12/29/11	12/29	RN-010
S112037-05			Duplicate (S112037-01)	0.541	0.100			100		160			17	12/29/11	12/29	RN-014
Nominal values and limits from method				1.00	0.100					100			180			

PROCEDURES REFERENCE 903.1
DWP-881A Ra-226 Screening in Drinking Water, rev 6

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.611 ± 0.204
YIELD 100 ± 0

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 01/09/12

EBERLINE ANALYTICAL

SDG 8697

SDG 8697
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUL1224

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

* LAB SAMPLE ID is the lab's primary identification for a sample.

* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.

* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.

* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

  QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 01/09/12

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PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

* The preparation batches are shown in the same order as the Method Summary Reports are printed.

* Only analyses of planchets relevant to the SDG are included.

* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.

* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

  These qualifiers should be reviewed as follows:

  X Some data has been manually entered or modified. Transcription errors are possible.

  P One or more results are 'preliminary'. The data is not ready for final reporting.

  2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

  Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.

* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.

* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.

* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.

* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

  The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.

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J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA

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may not be a good estimate of the 'real' minimum detectable activity.

* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.

* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

  An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The error of RESULT, including that introduced by rounding the result prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

* The recovery is underlined if it is outside either of these ranges.

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DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

  If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

  For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

  If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

  This value reported for this limit is at most 999.

* The second limit for the RPD is the larger of:

  1. A fixed percentage specified in the protocol.

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2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

* The RPD is underlined if it is greater than either limit.

* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

  Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

  An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

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MATRIX SPIKE

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

* The recovery is underlined (out of spec) if it is outside either of these ranges.

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METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

  There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

  The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

  The J and X flags are as on the data sheet.

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data' means no amount ADDED was specified. 'LOW' and 'HIGH'

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correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.

* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

  MDAs are underlined if greater than the printed RDL.

* Aliquots are underlined if less than the nominal value specified for the method.

* Prepareation factors are underlined if greater than the nominal value specified for the method.

* Dilution factors are underlined if greater than the nominal value specified for the method.

* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.

* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.

* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

* Count times are underlined if less than the nominal value

METHOD SUMMARY

specified for the method.

* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.

* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.

* Days Held are underlined if greater than the holding time specified in the protocol.

* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included.

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No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

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Subcontract Order - TestAmerica Irvine (IUL1224)

8697 -SI-12-37

SENDING LABORATORY:

TestAmerica Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Debby Wilson

RECEIVING LABORATORY:

Eberline Services - SUB
2030 Wright Avenue
Richmond, CA 94804
Phone :(510) 235-2633
Fax: (510) 235-0438
Project Location: California
Receipt Temperature: _____ °C Ice: Y / N

Standard TAT is requested unless specific due date is requested. => Due Date: _____ Initials: _____

Analysis	Units	Expires	Comments
Sample ID: IUL1224-02 (Outfall 009 (Composite) - Water)		Sampled: 12/12/11 14:47	
Gamma Spec-O	mg/kg	12/11/12 14:47	Out Eberline, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	06/09/12 14:47	Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	06/09/12 14:47	Out Eberline Boeing permit, DO NOT FILTER!
Radium, Combined-O	pCi/L	12/11/12 14:47	Out Eberline Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	12/11/12 14:47	Out Eberline, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	12/11/12 14:47	Out Eberline, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	12/11/12 14:47	Out Eberline, Boeing permit, DO NOT FILTER!
Containers Supplied:			
2.5 gal Poly (I)	500 mL Amber (J)		
Sample ID: IUL1224-03 (Trip Blank - Water)		Sampled: 12/14/11 12:00	
Gamma Spec-O	mg/kg	12/13/12 12:00	Out Eberline, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	06/11/12 12:00	Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	06/11/12 12:00	Out Eberline Boeing permit, DO NOT FILTER!
Radium, Combined-O	pCi/L	12/13/12 12:00	Out Eberline Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	12/13/12 12:00	Out Eberline, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	12/13/12 12:00	Out Eberline, Boeing permit, DO NOT FILTER!
Containers Supplied:			
2.5 gal Poly (A)			

Released By	Date/Time	Received By	Date/Time
	12/14/11 1700	Fed-Ex	12/14/11 17
FED EX			12/15/11 0930

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EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City: IRVINE State: CA

Date/Time received: 2/15/11 0930 CoC No.: IUL1224

Container I.D. No.: ICE CHEST Requested TAT (Days): STD P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [ ] No [ ] N/A [X]
2. Custody seals on shipping container dated & signed? Yes [ ] No [ ] N/A [X]
3. Custody seals on sample containers intact? Yes [ ] No [ ] N/A [X]
4. Custody seals on sample containers dated & signed? Yes [ ] No [ ] N/A [X]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 2 Sample Matrix: W
7. Number of containers per sample: _____ (Or see CoC X)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [X] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]?
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [X] Not preserved [X] pH <2/N/A Preservative HNO3
13. Describe any anomalies: NO SAMPLE ID LABEL ON TRIP BLANK
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by _____ Date: 2/15/11 Time: 1120

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
the Samples	<80						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 99574 Calibration date 15JUL11

APPENDIX G

Section 11

Outfall 019 – October 19 & 20, 2011

MEC^X Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: IUJ2388

Prepared by

MEC^X, LP
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Boeing SSFL NPDES
Contract Task Order:	1261.100D.00
Sample Delivery Group:	IUJ2388
Project Manager:	B. Kelly
Matrix:	Water
QC Level:	IV
No. of Samples:	2
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 019 (Composite)	IUJ2388-03	8692-001, G1J240410-001	Water	10/20/2011 1:41:00 PM	314.0, 8692, 900. 901.1, 903.1, 904, 905, 906, 200.7, 200.7-Diss, 245.1, 245.1 Diss, 300.0, 1613B, SM 2540C, SM5310B, SM2340B, SM2340B Diss, ASTM 5174
Outfall 019 (Grab)	IUJ2388-01	N/A	Water	10/19/2011 1:30:00 PM	EPA 120.1

II. Sample Management

No anomalies were observed regarding sample management. The samples were received within the temperature limit at TestAmerica-Irvine. The sub-contracted samples in this SDG were received at TestAmerica-West Sacramento within the temperature limits of 4°C ±2°C. Eberline did not note the temperature upon receipt; however, due to the nonvolatile nature of the analytes, no qualifications were required. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the samples were couriered to TestAmerica-Irvine, custody seals were not required. Custody seals were intact upon receipt at TestAmerica-West Sacramento and Eberline. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	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. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
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 data are unusable. 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. 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.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	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
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
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.
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 as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
$	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.

Qualification Code Reference Table Cont.

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 reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: L. Calvin
Date Reviewed: December 1, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0), USEPA Method 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review* (8/02).

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.

- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.

    - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. 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%.

    - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.

- Calibration: Calibration criteria were met.

    - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs ≤20% for the 15 native compounds (calibration by isotope dilution) and ≤35% for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.

    - 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.

- Blanks: The method blank had detects above the EDL for most target compounds (all except 1,2,3,7,8-PeCDD, 1,2,3,7,8-PeCDF, 2,3,4,7,8-PeCDF, 2,3,7,8-TCDD, 2,3,7,8-TCDF and the associated totals). Most method blank results were reported as EMPCs; however, due to the extent of the method blank contamination, the reviewer deemed it appropriate to use all method blank results to qualify sample results. Sample results for

the individual isomer method blank contaminants were qualified as nondetected, "U," at the level of contamination. Results for total HxCDF and total HxCDD were also qualified as nondetected, "U," as the peaks comprising the totals in the sample were present at comparable concentrations in the method blank. The remaining total results were qualified as estimated, "J," as only a portion of the total was considered method blank contamination.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613, and RPDs were within the laboratory control limit of ≤50%.

- 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 samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

- Internal Standards Performance: The labeled internal standard recoveries for the sample were within the acceptance criteria listed in Table 7 of Method 1613.

- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.

- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J." All individual isomers reported as EMPCs were subsequently qualified as nondetected for method blank contamination, and were therefore not further qualified as EMPCs. The totals for HpCDD and HpCDF were qualified as estimated, "J," as the totals included individual isomers originally reported as EMPCs. Any detects reported between the estimated detection limit (EDL) and the reporting limit (RL) were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Nondetects are valid to the EDL.

B. EPA METHODS 200.7 and 245.1—Metals and Mercury

Reviewed By: P. Meeks
Date Reviewed: December 1, 2011

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Methods 2007 and 245.1*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding times, six months for ICP metals and 28 days for mercury, were met.

- Tuning: Not applicable to this analysis.

- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were $\geq$0.995. Initial and continuing calibration recoveries were within 90-110% for the ICP metals and 85-115% for mercury. CRI/CRA recoveries were within the control limits of 70-130%.

- Blanks: Method blanks and CCBs had no detects.

- Interference Check Samples: Not applicable to this analysis.

- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratory-established QC limits.

- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for dissolved calcium, magnesium, and zinc, and total zinc. Control limits do not apply to samples with native concentrations greater than 4× the spike value. Recoveries and RPDs were within the method-established control limits. Mercury method accuracy was evaluated based on LCS results.

- Serial Dilution: No serial dilution analyses were performed.

- Internal Standards Performance: Not applicable to this analysis.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-“; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with

"DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- 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 samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

C. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks
Date Reviewed: December 1, 2011

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.1, 904.0, 905.0, and 906.0, ASTM Method D-5174,* and the *National Functional Guidelines for Inorganic Data Review* (10/04).

- Holding Times: The tritium sample was analyzed within 180 days of collection. All remaining aliquots were preserved within five days of collection and analyzed within 180 days of collection.

- Calibration: The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

  The gross alpha efficiency was less than 20%; therefore, nondetected gross alpha in the sample was qualified as estimated, "UJ." The remaining detector efficiencies were greater than 20%. The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. All KPA calibration check standard recoveries were within 90-110% and were deemed acceptable.

- Blanks: There were no analytes detected in the method blanks or the KPA CCBs.

- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratory-established control limits.

- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG. All RPDs were within the laboratory-established control limits.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.

- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

- 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 samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

D. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks
Date Reviewed: December 1, 2011

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0), EPA Methods 120.1, 180.1, 300.0, 314.0 and SM2540C, SM5310B*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: Analytical holding times were met.

- Calibration: Calibration criteria were met. All Initial calibration r^2 values were $\geq$0.995. The perchlorate IPC-MA recovery was within the control limits of 80-120%. The perchlorate ICCS recovery was within 75-125% and the perchlorate ICV and CCV recoveries were within 85-115%. The remaining ICV and CCV recoveries were within 90-110%. The balance calibration check log was acceptable.

- Blanks: The method blanks and CCBs had no detects.

- Blank Spikes and Laboratory Control Samples: Perchlorate recoveries were within 85-115%. The remaining recoveries were within laboratory-established QC limits.

- Laboratory Duplicates: A laboratory duplicate analysis was performed on the sample in this SDG for turbidity. The RPD was within the laboratory-established control limits.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for the anions. Both sulfate recoveries were below the control limit, both nitrate recoveries were above the control limit; therefore, sulfate and nitrate detected in the sample were qualified as estimated, "J." Nitrite was detected above the control limit in the MS, but was not detected in the sample. Method accuracy for perchlorate was evaluated based on LCS results.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- 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 samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms IUJ2388

Analysis Method 900

Sample Name Outfall 019 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	1.7	3	3.04	pCi/L	U	UJ	C
Gross Beta	12587472	11.8	4	1.9	pCi/L			

Analysis Method 901.1

Sample Name Outfall 019 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	ND	20	2.15	pCi/L	U	U	
Potassium-40	13966002	ND	25	41.3	pCi/L	U	U	

Analysis Method 903.1

Sample Name Outfall 019 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.5	1	0.676	pCi/L	U	U	

Analysis Method 904

Sample Name Outfall 019 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	0.178	1	0.529	pCi/L	U	U	

Analysis Method 905

Sample Name Outfall 019 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	0.245	2	1.01	pCi/L	U	U	

Analysis Method 906

Sample Name Outfall 019 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-130	500	185	pCi/L	U	U	

Analysis Method D5174

Sample Name Outfall 019 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total		0.221	1	0.019	pCi/L	Jb	J	DNQ

Analysis Method EPA 120.1

Sample Name Outfall 019 (Grab) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ2388-01 **Sample Date:** 10/19/2011 1:30:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Specific Conductance	NA	1100	1.0	1.0	umhos/c			

Analysis Method EPA 180.1

Sample Name Outfall 019 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Turbidity	Turb	0.070	1.0	0.040	NTU	Ja	J	DNQ

Analysis Method EPA 200.7

Sample Name Outfall 019 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Calcium	7440-70-2	210	0.10	0.050	mg/l	B-1		
Magnesium	7439-95-4	24	0.020	0.012	mg/l			
Zinc	7440-66-6	11.6	20.0	6.00	ug/l	Ja	J	DNQ

Analysis Method EPA 200.7-Diss

Sample Name Outfall 019 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Calcium	7440-70-2	200	0.10	0.050	mg/l	MHA		
Magnesium	7439-95-4	23	0.020	0.012	mg/l			
Zinc	7440-66-6	12.1	20.0	6.00	ug/l	Ja	J	DNQ

Analysis Method EPA 245.1

Sample Name Outfall 019 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

Analysis Method EPA 245.1-Diss

Sample Name Outfall 019 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

Analysis Method EPA 300.0

Sample Name Outfall 019 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Chloride	16887-00-6	250	25	15	mg/l	MHA		
Nitrate/Nitrite-N	NA	ND	1.3	0.75	mg/l		U	
Nitrate-N	14797-55-8	0.13	0.11	0.060	mg/l	M1	J	Q
Nitrite-N	14797-65-0	ND	0.75	0.45	mg/l	M1, RL3	U	
Sulfate	14808-79-8	150	25	15	mg/l	M2	J	Q

Analysis Method EPA 314.0

Sample Name Outfall 019 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797-73-0	ND	4.0	0.95	ug/l		U	

Analysis Method EPA-5 1613B

Sample Name Outfall 019 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.00005	0.0000009	ug/L	J, Ba	U	B
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.00005	0.0000007	ug/L	J, Ba	U	B
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.000001	ug/L	J, Q, Ba	U	B
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.00005	0.0000017	ug/L	J, Ba	U	B
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.0000013	ug/L	J, Q, Ba	U	B
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000017	ug/L	J, Ba	U	B
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000013	ug/L	J, Q, Ba	U	B
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.00005	0.0000014	ug/L	J, Q, Ba	U	B
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.0000013	ug/L	J, Ba	U	B
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.0000059	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.0000038	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000011	ug/L	J, Ba	U	B
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.000004	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.0000025	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000018	ug/L		U	
OCDD	3268-87-9	ND	0.0001	0.0000033	ug/L	J, Q, Ba	U	B
OCDF	39001-02-0	ND	0.0001	0.0000026	ug/L	J, Ba	U	B
Total HpCDD	37871-00-4	0.000012	0.00005	0.0000009	ug/L	J, Q, Ba	J	B, DNQ, *III
Total HpCDF	38998-75-3	0.000014	0.00005	0.0000008	ug/L	J, Q, Ba	J	B, DNQ, *III
Total HxCDD	34465-46-8	ND	0.00005	0.0000016	ug/L	J, Q, Ba	U	B
Total HxCDF	55684-94-1	ND	0.00005	0.0000013	ug/L	J, Q, Ba	U	B
Total PeCDD	36088-22-9	ND	0.00005	0.0000059	ug/L		U	
Total PeCDF	30402-15-4	ND	0.00005	0.0000038	ug/L		U	
Total TCDD	41903-57-5	ND	0.00001	0.0000025	ug/L		U	
Total TCDF	55722-27-5	ND	0.00001	0.0000018	ug/L		U	

Analysis Method SM2340B

Sample Name Outfall 019 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness (as CaCO3)	NA	630	0.33	0.17	mg/l			

Analysis Method SM2340B-Diss

Sample Name Outfall 019 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness as CaCO3		580	0.33	0.17	mg/l			

Analysis Method SM2540C

Sample Name Outfall 019 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Dissolved Solids	NA	1100	10	1.0	mg/l			

Analysis Method SM5310B

Sample Name Outfall 019 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ2388-03 **Sample Date:** 10/20/2011 1:41:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Organic Carbon	TOC	0.55	1.0	0.50	mg/l	Ja	J	DNQ

APPENDIX G

Section 12

Outfall 019 – October 19, 20, & 21, 2011

Test America Analytical Laboratory Report

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project: Quarterly Outfall 019
Quarterly Outfall 019

Sampled: 10/19/11-10/21/11
Received: 10/19/11
Issued: 11/17/11 11:37

NELAP #01108CA California ELAP#2706 CSDLAC #10256 AZ #AZ0671 NV #CA01531

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 4°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the TestAmerica Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

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

ADDITIONAL INFORMATION:

WATER, 1613B, Dioxins/Furans with Totals
Sample: 1
Some analytes in this sample and the associated method blank have an ion abundance ratio that is outside of criteria. The analytes are considered as an "estimated maximum possible concentration" (EMPC) because the quantitation is based on the theoretical ion abundance ratio. Analytical results are reported with a "Q" flag.

Some analytes in the associated Method Blank are reported at a concentration below the estimated detection limit (EDL). The data is reported as a positive detection because the peaks elute at the correct retention time for both characteristic ions and have a signal to noise ratio greater than the method required 2.5:1.

TestAmerica Irvine

Debby Wilson
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 019
Quarterly Outfall 019
Report Number: IUJ2388

Sampled: 10/19/11-10/21/11
Received: 10/19/11

LABORATORY ID	CLIENT ID	MATRIX
IUJ2388-01	Outfall 019 (Grab)	Water
IUJ2388-02	Trip Blanks	Water
IUJ2388-03	Outfall 019 (Composite)	Water
IUJ2388-04	Trip Blank	Water

I certify under penalty of perjury that the information contained in this report and all attachments was produced in accordance with the indicated methods and laboratory standard operating procedures, except as noted, and are complete and accurate to the best of my knowledge and belief. Subcontract laboratory reports that are attached have been evaluated for completeness and quality control acceptability.

Reviewed By:

Debby Wilson

TestAmerica Irvine

Debby Wilson
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 019
Quarterly Outfall 019
Report Number: IUJ2388

Sampled: 10/19/11-10/21/11
Received: 10/19/11

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-01 (Outfall 019 (Grab) - Water)					**Sampled: 10/19/11**				
Reporting Units: ug/l									
Benzene	EPA 624	11J3705	0.28	0.50	ND	1	VS	10/30/11	
Carbon tetrachloride	EPA 624	11J3705	0.28	0.50	ND	1	VS	10/30/11	L, C
Chloroform	EPA 624	11J3705	0.33	0.50	ND	1	VS	10/30/11	
1,1-Dichloroethane	EPA 624	11J3705	0.40	0.50	ND	1	VS	10/30/11	
1,2-Dichloroethane	EPA 624	11J3705	0.28	0.50	ND	1	VS	10/30/11	
1,1-Dichloroethene	EPA 624	11J3705	0.42	0.50	ND	1	VS	10/30/11	
cis-1,2-Dichloroethene	EPA 624	11J3705	0.32	0.50	ND	1	NA	10/30/11	
Ethylbenzene	EPA 624	11J3705	0.25	0.50	ND	1	VS	10/30/11	
Tetrachloroethene	EPA 624	11J3705	0.32	0.50	ND	1	VS	10/30/11	
Toluene	EPA 624	11J3705	0.36	0.50	ND	1	VS	10/30/11	
1,1,1-Trichloroethane	EPA 624	11J3705	0.30	0.50	ND	1	VS	10/30/11	L
1,1,2-Trichloroethane	EPA 624	11J3705	0.30	0.50	ND	1	VS	10/30/11	
Trichloroethene	EPA 624	11J3705	0.26	0.50	ND	1	VS	10/30/11	
Trichlorofluoromethane	EPA 624	11J3705	0.34	0.50	ND	1	VS	10/30/11	L
Trichlorotrifluoroethane (Freon 113)	EPA 624	11J3705	0.50	5.0	ND	1	VS	10/30/11	
Vinyl chloride	EPA 624	11J3705	0.40	0.50	ND	1	VS	10/30/11	
Xylenes, Total	EPA 624	11J3705	0.90	1.5	ND	1	VS	10/30/11	
Surrogate: 4-Bromofluorobenzene (80-120%)					*102 %*				
Surrogate: Dibromofluoromethane (80-120%)					*106 %*				
Surrogate: Toluene-d8 (80-120%)					*104 %*				
Sample ID: IUJ2388-02 (Trip Blanks - Water)					**Sampled: 10/19/11**				
Reporting Units: ug/l									
Benzene	EPA 624	11J3705	0.28	0.50	ND	1	VS	10/29/11	
Carbon tetrachloride	EPA 624	11J3705	0.28	0.50	ND	1	VS	10/29/11	L, C
Chloroform	EPA 624	11J3705	0.33	0.50	ND	1	VS	10/29/11	
1,1-Dichloroethane	EPA 624	11J3705	0.40	0.50	ND	1	VS	10/29/11	
1,2-Dichloroethane	EPA 624	11J3705	0.28	0.50	ND	1	VS	10/29/11	
1,1-Dichloroethene	EPA 624	11J3705	0.42	0.50	ND	1	VS	10/29/11	
cis-1,2-Dichloroethene	EPA 624	11J3705	0.32	0.50	ND	1	NA	10/29/11	
Ethylbenzene	EPA 624	11J3705	0.25	0.50	ND	1	VS	10/29/11	
Tetrachloroethene	EPA 624	11J3705	0.32	0.50	ND	1	VS	10/29/11	
Toluene	EPA 624	11J3705	0.36	0.50	ND	1	VS	10/29/11	
1,1,1-Trichloroethane	EPA 624	11J3705	0.30	0.50	ND	1	VS	10/29/11	L
1,1,2-Trichloroethane	EPA 624	11J3705	0.30	0.50	ND	1	VS	10/29/11	
Trichloroethene	EPA 624	11J3705	0.26	0.50	ND	1	VS	10/29/11	
Trichlorofluoromethane	EPA 624	11J3705	0.34	0.50	ND	1	VS	10/29/11	L
Trichlorotrifluoroethane (Freon 113)	EPA 624	11J3705	0.50	5.0	ND	1	VS	10/29/11	
Vinyl chloride	EPA 624	11J3705	0.40	0.50	ND	1	VS	10/29/11	
Xylenes, Total	EPA 624	11J3705	0.90	1.5	ND	1	VS	10/29/11	
Surrogate: 4-Bromofluorobenzene (80-120%)					*103 %*				

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Received: 10/19/11

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-02 (Trip Blanks - Water) - cont.					**Sampled: 10/19/11**				
Reporting Units: ug/l									
Surrogate: Dibromofluoromethane (80-120%)					*103 %*				
Surrogate: Toluene-d8 (80-120%)					*102 %*				

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water)					**Sampled: 10/20/11**				
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	11J3644	1.62	4.76	**1.70**	0.952	UP\	11/01/11	B, Ja
2,4-Dinitrotoluene	EPA 625	11J3644	0.190	4.76	ND	0.952	UP\	11/01/11	
N-Nitrosodimethylamine	EPA 625	11J3644	0.0952	4.76	ND	0.952	UP\	11/01/11	
Pentachlorophenol	EPA 625	11J3644	0.0952	4.76	ND	0.952	UP\	11/01/11	
2,4,6-Trichlorophenol	EPA 625	11J3644	0.0952	5.71	ND	0.952	UP\	11/01/11	
Surrogate: 2,4,6-Tribromophenol (40-120%)					*103 %*				
Surrogate: 2-Fluorobiphenyl (50-120%)					*84 %*				
Surrogate: 2-Fluorophenol (30-120%)					*74 %*				
Surrogate: Nitrobenzene-d5 (45-120%)					*85 %*				
Surrogate: Phenol-d6 (35-120%)					*81 %*				
Surrogate: Terphenyl-d14 (50-125%)					*98 %*				

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ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water) - cont.					**Sampled: 10/20/11**				
Reporting Units: ug/l									
alpha-BHC	EPA 608	11J3042	0.0024	0.0095	ND	0.952	DXD	10/24/11	
Surrogate: Decachlorobiphenyl (45-120%)					*84 %*				
Surrogate: Tetrachloro-m-xylene (35-115%)					*74 %*				

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HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-01 (Outfall 019 (Grab) - Water)					**Sampled: 10/19/11**				
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	11K0186	1.3	4.7	ND	1	DA	11/02/11	

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METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water)					**Sampled: 10/20/11**				
Reporting Units: mg/l									
Hardness (as CaCO3)	SM2340B	[CALC]		0.33	**630**	1	NH	10/26/11	
Calcium	EPA 200.7	11J3030	0.050	0.10	**210**	1	NH	10/26/11	B-1
Magnesium	EPA 200.7	11J3030	0.012	0.020	**24**	1	NH	10/26/11	
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water)					**Sampled: 10/20/11**				
Reporting Units: ug/l									
Mercury	EPA 245.1	11J2772	0.10	0.20	ND	1	DB	10/27/11	
Cadmium	EPA 200.8	11J3745	0.10	1.0	ND	1	NH	11/02/11	
Zinc	EPA 200.7	11J3674	6.00	20.0	**11.6**	1	NH	10/28/11	Ja
Copper	EPA 200.8	11J3745	0.500	2.00	ND	1	NH	11/02/11	
Lead	EPA 200.8	11J3745	0.20	1.0	**0.37**	1	NH	11/02/11	Ja
Selenium	EPA 200.8	11J3745	0.50	2.0	ND	1	NH	11/02/11	

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DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water) - cont.					**Sampled: 10/20/11**				
Reporting Units: mg/l									
Hardness as CaCO3	SM2340B-Diss	[CALC]		0.33	**580**	1	NH	10/25/11	
Calcium	EPA 200.7-Diss	11J3066	0.050	0.10	**200**	1	NH	10/25/11	MHA
Magnesium	EPA 200.7-Diss	11J3066	0.012	0.020	**23**	1	NH	10/25/11	
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water)					**Sampled: 10/20/11**				
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	11J2606	0.10	0.20	ND	1	DB	10/27/11	
Cadmium	EPA 200.8-Diss	11J3746	0.10	1.0	ND	1	KB1	11/01/11	
Zinc	EPA 200.7-Diss	11J3066	6.00	20.0	**12.1**	1	NH	10/25/11	Ja
Copper	EPA 200.8-Diss	11J3746	0.500	2.00	**0.794**	1	RDC	11/02/11	Ja
Lead	EPA 200.8-Diss	11J3746	0.20	1.0	**0.32**	1	KB1	11/01/11	Ja
Selenium	EPA 200.8-Diss	11J3746	0.50	2.0	ND	1	KB1	11/01/11	

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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water) - cont.					**Sampled: 10/20/11**				
Reporting Units: mg/l									
Ammonia-N (Distilled)	SM4500NH3-C	11J3426	0.500	0.500	**0.840**	1	NCP	10/26/11	
Biochemical Oxygen Demand	SM5210B	11J2761	0.50	2.0	ND	1	XL	10/26/11	
Chloride	EPA 300.0	11J2645	15	25	**250**	50	NN	10/21/11	MHA
Nitrate-N	EPA 300.0	11J2645	0.060	0.11	**0.13**	1	NN	10/21/11	M1
Nitrite-N	EPA 300.0	11J2645	0.45	0.75	ND	5	NN	10/21/11	M1, RL3
Nitrate/Nitrite-N	EPA 300.0	11J2645	0.75	1.3	ND	5	NN	10/21/11	
Sulfate	EPA 300.0	11J2645	15	25	**150**	50	NN	10/21/11	M2
Surfactants (MBAS)	SM5540-C	11J2650	0.050	0.10	ND	1	NCP	10/20/11	
Total Dissolved Solids	SM2540C	11J3111	1.0	10	**1100**	1	MC	10/25/11	
Total Organic Carbon	SM5310B	11J3296	0.50	1.0	**0.55**	1	FZ	10/26/11	Ja
Total Suspended Solids	SM 2540D	11J3262	1.0	10	ND	1	MC	10/25/11	

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Received: 10/19/11

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-01 (Outfall 019 (Grab) - Water)					**Sampled: 10/19/11**				
Reporting Units: ml/l									
Total Settleable Solids	SM2540F	11J2550	0.10	0.10	ND	1	RRZ	10/20/11	
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water)					**Sampled: 10/20/11**				
Reporting Units: NTU									
Turbidity	EPA 180.1	11J2746	0.040	1.0	**0.070**	1	LA	10/21/11	Ja
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water)					**Sampled: 10/20/11**				
Reporting Units: ug/l									
Perchlorate	EPA 314.0	11J2665	0.95	4.0	ND	1	mn	10/21/11	
Total Cyanide	SM4500CN-E	11K0164	2.2	5.0	ND	1	SLA	11/01/11	
Sample ID: IUJ2388-01 (Outfall 019 (Grab) - Water)					**Sampled: 10/19/11**				
Reporting Units: umhos/cm @ 25C									
Specific Conductance	EPA 120.1	11J2465	1.0	1.0	**1100**	1	MC	10/20/11	

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Project ID: Quarterly Outfall 019
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Report Number: IUJ2388

Sampled: 10/19/11-10/21/11
Received: 10/19/11

8692

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water)					**Sampled: 10/20/11**				
Reporting Units: pCi/L									
Uranium, Total	8692	8692		1	**0.221**	1	CSS	11/03/11	Jb
Sample ID: IUJ2388-04 (Trip Blank - Water)					**Sampled: 10/21/11**				
Reporting Units: pCi/L									
Uranium, Total	8692	8692		1	ND	1	CSS	11/03/11	U

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Received: 10/19/11

900

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water)					**Sampled: 10/20/11**				
Reporting Units: pCi/L									
Gross Alpha	900	8692		3	**1.7**	1	DVP	11/09/11	U
Gross Beta	900	8692		4	**11.8**	1	DVP	11/09/11	
Sample ID: IUJ2388-04 (Trip Blank - Water)					**Sampled: 10/21/11**				
Reporting Units: pCi/L									
Gross Alpha	900	8692		3	-0.006	1	DVP	11/09/11	U
Gross Beta	900	8692		4	-0.174	1	DVP	11/09/11	U

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901.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water)					**Sampled: 10/20/11**				
Reporting Units: pCi/L									
Cesium-137	901.1	8692		20	ND	1	RTM	11/01/11	U
Potassium-40	901.1	8692		25	ND	1	RTM	11/01/11	U
Sample ID: IUJ2388-04 (Trip Blank - Water)					**Sampled: 10/21/11**				
Reporting Units: pCi/L									
Cesium-137	901.1	8692		20	ND	1	RTM	11/02/11	U
Potassium-40	901.1	8692		25	ND	1	RTM	11/02/11	U

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903.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water)					**Sampled: 10/20/11**				
Reporting Units: pCi/L									
Radium-226	903.1	8692		1	**0.5**	1	TM	11/08/11	U
Sample ID: IUJ2388-04 (Trip Blank - Water)					**Sampled: 10/21/11**				
Reporting Units: pCi/L									
Radium-226	903.1	8692		1	**0.209**	1	TM	11/08/11	U

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Received: 10/19/11

904

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water)					**Sampled: 10/20/11**				
Reporting Units: pCi/L									
Radium-228	904	8692		1	**0.178**	1	ASM	11/07/11	U
Sample ID: IUJ2388-04 (Trip Blank - Water)					**Sampled: 10/21/11**				
Reporting Units: pCi/L									
Radium-228	904	8692		1	-0.055	1	ASM	11/07/11	U

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905

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water)					**Sampled: 10/20/11**				
Reporting Units: pCi/L									
Strontium-90	905	8692		2	**0.245**	1	DVP	11/04/11	U
Sample ID: IUJ2388-04 (Trip Blank - Water)					**Sampled: 10/21/11**				
Reporting Units: pCi/L									
Strontium-90	905	8692		2	-0.147	1	DVP	11/04/11	U

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906

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water)					**Sampled: 10/20/11**				
Reporting Units: pCi/L									
Tritium	906	8692		500	-130	1	WK	10/28/11	U

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618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 019
Quarterly Outfall 019
Report Number: IUJ2388

Sampled: 10/19/11-10/21/11
Received: 10/19/11

EPA-5 1613Bx

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ2388-03 (Outfall 019 (Composite) - Water) - cont.					**Sampled: 10/20/11**				
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	1300117	0.00000098	0.00005	**0.0000088**	1.01	LH	10/28/11	J, Ba
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	1300117	0.00000076	0.00005	**0.0000077**	1.01	LH	10/28/11	J, Ba
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	1300117	0.000001	0.00005	**0.0000042**	1.01	LH	10/28/11	J, Q, Ba
1,2,3,4,7,8-HxCDD	EPA-5 1613B	1300117	0.0000017	0.00005	**0.0000033**	1.01	LH	10/28/11	J, Ba
1,2,3,4,7,8-HxCDF	EPA-5 1613B	1300117	0.0000013	0.00005	**0.0000039**	1.01	LH	10/28/11	J, Q, Ba
1,2,3,6,7,8-HxCDD	EPA-5 1613B	1300117	0.0000017	0.00005	**0.0000058**	1.01	LH	10/28/11	J, Ba
1,2,3,6,7,8-HxCDF	EPA-5 1613B	1300117	0.0000013	0.00005	**0.0000043**	1.01	LH	10/28/11	J, Q, Ba
1,2,3,7,8,9-HxCDD	EPA-5 1613B	1300117	0.0000014	0.00005	**0.0000024**	1.01	LH	10/28/11	J, Q, Ba
1,2,3,7,8,9-HxCDF	EPA-5 1613B	1300117	0.0000013	0.00005	**0.0000051**	1.01	LH	10/28/11	J, Ba
1,2,3,7,8-PeCDD	EPA-5 1613B	1300117	0.0000059	0.00005	ND	1.01	LH	10/28/11	
1,2,3,7,8-PeCDF	EPA-5 1613B	1300117	0.0000038	0.00005	ND	1.01	LH	10/28/11	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	1300117	0.0000011	0.00005	**0.0000042**	1.01	LH	10/28/11	J, Ba
2,3,4,7,8-PeCDF	EPA-5 1613B	1300117	0.000004	0.00005	ND	1.01	LH	10/28/11	
2,3,7,8-TCDD	EPA-5 1613B	1300117	0.0000025	0.00001	ND	1.01	LH	10/28/11	
2,3,7,8-TCDF	EPA-5 1613B	1300117	0.0000018	0.00001	ND	1.01	LH	10/28/11	
OCDD	EPA-5 1613B	1300117	0.0000033	0.0001	**0.000034**	1.01	LH	10/28/11	J, Q, Ba
OCDF	EPA-5 1613B	1300117	0.0000026	0.0001	**0.000013**	1.01	LH	10/28/11	J, Ba
Total HpCDD	EPA-5 1613B	1300117	0.00000098	0.00005	**0.000012**	1.01	LH	10/28/11	J, Q, Ba
Total HpCDF	EPA-5 1613B	1300117	0.00000089	0.00005	**0.000014**	1.01	LH	10/28/11	J, Q, Ba
Total HxCDD	EPA-5 1613B	1300117	0.0000016	0.00005	**0.000012**	1.01	LH	10/28/11	J, Q, Ba
Total HxCDF	EPA-5 1613B	1300117	0.0000013	0.00005	**0.000018**	1.01	LH	10/28/11	J, Q, Ba
Total PeCDD	EPA-5 1613B	1300117	0.0000059	0.00005	ND	1.01	LH	10/28/11	
Total PeCDF	EPA-5 1613B	1300117	0.0000038	0.00005	ND	1.01	LH	10/28/11	
Total TCDD	EPA-5 1613B	1300117	0.0000025	0.00001	ND	1.01	LH	10/28/11	
Total TCDF	EPA-5 1613B	1300117	0.0000018	0.00001	ND	1.01	LH	10/28/11	
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)					*79 %*				
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)					*79 %*				
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)					*82 %*				
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)					*79 %*				
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)					*84 %*				
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)					*77 %*				
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)					*73 %*				
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)					*80 %*				
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)					*61 %*				
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)					*61 %*				
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)					*82 %*				
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)					*64 %*				
Surrogate: 13C-2,3,7,8-TCDD (25-164%)					*65 %*				
Surrogate: 13C-2,3,7,8-TCDF (24-169%)					*64 %*				
Surrogate: 13C-OCDD (17-157%)					*79 %*				
Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)					*87 %*				

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Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 019
Quarterly Outfall 019
Report Number: IUJ2388

Sampled: 10/19/11-10/21/11
Received: 10/19/11

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 019 (Grab) (IUJ2388-01) - Water					
SM2540F	2	10/19/2011 13:30	10/19/2011 18:40	10/20/2011 08:08	10/20/2011 08:08
Sample ID: Outfall 019 (Composite) (IUJ2388-03) - Water					
EPA 180.1	2	10/20/2011 13:41	10/19/2011 18:40	10/21/2011 18:45	10/21/2011 18:45
EPA 300.0	2	10/20/2011 13:41	10/19/2011 18:40	10/20/2011 22:00	10/21/2011 13:04
Nitrate-N				10/20/2011 22:00	10/21/2011 06:24
Nitrite-N				10/20/2011 22:00	10/21/2011 13:04
Filtration	1	10/20/2011 13:41	10/19/2011 18:40	10/21/2011 19:44	10/21/2011 19:47
SM5210B	2	10/20/2011 13:41	10/19/2011 18:40	10/21/2011 13:00	10/26/2011 10:00
SM5540-C	2	10/20/2011 13:41	10/19/2011 18:40	10/20/2011 21:36	10/20/2011 22:31

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Received: 10/19/11

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J3705 Extracted: 10/29/11												
Blank Analyzed: 10/29/2011 (11J3705-BLK1)												
Benzene	ND	0.50	0.28	ug/l	VS							
Carbon tetrachloride	ND	0.50	0.28	ug/l	VS							
Chloroform	ND	0.50	0.33	ug/l	VS							
1,1-Dichloroethane	ND	0.50	0.40	ug/l	VS							
1,2-Dichloroethane	ND	0.50	0.28	ug/l	VS							
1,1-Dichloroethene	ND	0.50	0.42	ug/l	VS							
cis-1,2-Dichloroethene	ND	0.50	0.32	ug/l	NA							
Ethylbenzene	ND	0.50	0.25	ug/l	VS							
Tetrachloroethene	ND	0.50	0.32	ug/l	VS							
Toluene	ND	0.50	0.36	ug/l	VS							
1,1,1-Trichloroethane	ND	0.50	0.30	ug/l	VS							
1,1,2-Trichloroethane	ND	0.50	0.30	ug/l	VS							
Trichloroethene	ND	0.50	0.26	ug/l	VS							
Trichlorofluoromethane	ND	0.50	0.34	ug/l	VS							
Trichlorotrifluoroethane (Freon 113)	ND	5.0	0.50	ug/l	VS							
Vinyl chloride	ND	0.50	0.40	ug/l	VS							
Xylenes, Total	ND	1.5	0.90	ug/l	VS							
Surrogate: 4-Bromofluorobenzene	*26.1*			*ug/l*	VS	*25.0*		*104*	*80-120*			
Surrogate: Dibromofluoromethane	*26.7*			*ug/l*	VS	*25.0*		*107*	*80-120*			
Surrogate: Toluene-d8	*25.7*			*ug/l*	VS	*25.0*		*103*	*80-120*			
LCS Analyzed: 10/29/2011 (11J3705-BS1)												
Benzene	26.4	0.50	0.28	ug/l	VS	25.0		105	70-120			
Carbon tetrachloride	41.2	0.50	0.28	ug/l	VS	25.0		165	65-140			*L*
Chloroform	31.0	0.50	0.33	ug/l	VS	25.0		124	70-130			
1,1-Dichloroethane	26.7	0.50	0.40	ug/l	VS	25.0		107	70-125			
1,2-Dichloroethane	34.4	0.50	0.28	ug/l	VS	25.0		138	60-140			
1,1-Dichloroethene	26.4	0.50	0.42	ug/l	VS	25.0		106	70-125			
cis-1,2-Dichloroethene	28.6	0.50	0.32	ug/l	NA	25.0		114	70-125			
Ethylbenzene	28.8	0.50	0.25	ug/l	VS	25.0		115	75-125			
Tetrachloroethene	28.2	0.50	0.32	ug/l	VS	25.0		113	70-125			
Toluene	28.4	0.50	0.36	ug/l	VS	25.0		114	70-120			
1,1,1-Trichloroethane	34.1	0.50	0.30	ug/l	VS	25.0		136	65-135			*L*
1,1,2-Trichloroethane	28.2	0.50	0.30	ug/l	VS	25.0		113	70-125			
Trichloroethene	29.1	0.50	0.26	ug/l	VS	25.0		116	70-125			
Trichlorofluoromethane	36.7	0.50	0.34	ug/l	VS	25.0		147	65-145			*L*

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Project ID: Quarterly Outfall 019
Quarterly Outfall 019
Report Number: IUJ2388

Sampled: 10/19/11-10/21/11
Received: 10/19/11

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J3705 Extracted: 10/29/11												
LCS Analyzed: 10/29/2011 (11J3705-BS1)												
Vinyl chloride	31.8	0.50	0.40	ug/l	VS	25.0		127	55-135			
Xylenes, Total	87.8	1.5	0.90	ug/l	VS	75.0		117	70-125			
Surrogate: 4-Bromofluorobenzene	*27.5*			*ug/l*	VS	*25.0*		*110*	*80-120*			
Surrogate: Dibromofluoromethane	*28.0*			*ug/l*	VS	*25.0*		*112*	*80-120*			
Surrogate: Toluene-d8	*26.4*			*ug/l*	VS	*25.0*		*106*	*80-120*			
Matrix Spike Analyzed: 10/30/2011 (11J3705-MS1)							**Source: IUJ2836-02**					
Benzene	23.8	0.50	0.28	ug/l	VS	25.0	ND	95	65-125			
Carbon tetrachloride	37.1	0.50	0.28	ug/l	VS	25.0	ND	149	65-140			*M7*
Chloroform	27.1	0.50	0.33	ug/l	VS	25.0	ND	109	65-135			
1,1-Dichloroethane	23.6	0.50	0.40	ug/l	VS	25.0	ND	94	65-130			
1,2-Dichloroethane	29.9	0.50	0.28	ug/l	VS	25.0	ND	120	60-140			
1,1-Dichloroethene	24.6	0.50	0.42	ug/l	VS	25.0	0.900	95	60-130			
cis-1,2-Dichloroethene	25.1	0.50	0.32	ug/l	NA	25.0	ND	100	65-130			
Ethylbenzene	26.9	0.50	0.25	ug/l	VS	25.0	ND	108	65-130			
Tetrachloroethene	27.2	0.50	0.32	ug/l	VS	25.0	0.800	105	65-130			
Toluene	25.1	0.50	0.36	ug/l	VS	25.0	ND	100	70-125			
1,1,1-Trichloroethane	31.1	0.50	0.30	ug/l	VS	25.0	ND	124	65-140			
1,1,2-Trichloroethane	23.5	0.50	0.30	ug/l	VS	25.0	ND	94	65-130			
Trichloroethene	26.3	0.50	0.26	ug/l	VS	25.0	0.460	104	65-125			
Trichlorofluoromethane	33.3	0.50	0.34	ug/l	VS	25.0	ND	133	60-145			
Vinyl chloride	28.2	0.50	0.40	ug/l	VS	25.0	ND	113	45-140			
Xylenes, Total	80.3	1.5	0.90	ug/l	VS	75.0	ND	107	60-130			
Surrogate: 4-Bromofluorobenzene	*27.1*			*ug/l*	VS	*25.0*		*108*	*80-120*			
Surrogate: Dibromofluoromethane	*27.0*			*ug/l*	VS	*25.0*		*108*	*80-120*			
Surrogate: Toluene-d8	*25.8*			*ug/l*	VS	*25.0*		*103*	*80-120*			
Matrix Spike Dup Analyzed: 10/30/2011 (11J3705-MSD1)							**Source: IUJ2836-02**					
Benzene	23.7	0.50	0.28	ug/l	VS	25.0	ND	95	65-125	0.3	20	
Carbon tetrachloride	36.8	0.50	0.28	ug/l	VS	25.0	ND	147	65-140	1	25	*M7*
Chloroform	26.7	0.50	0.33	ug/l	VS	25.0	ND	107	65-135	1	20	
1,1-Dichloroethane	23.2	0.50	0.40	ug/l	VS	25.0	ND	93	65-130	2	20	
1,2-Dichloroethane	29.5	0.50	0.28	ug/l	VS	25.0	ND	118	60-140	1	20	
1,1-Dichloroethene	23.9	0.50	0.42	ug/l	VS	25.0	0.900	92	60-130	3	20	
cis-1,2-Dichloroethene	24.6	0.50	0.32	ug/l	NA	25.0	ND	98	65-130	2	20	
Ethylbenzene	26.4	0.50	0.25	ug/l	VS	25.0	ND	106	65-130	2	20	

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Report Number: IUJ2388

Sampled: 10/19/11-10/21/11
Received: 10/19/11

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J3705 Extracted: 10/29/11												
Matrix Spike Dup Analyzed: 10/30/2011 (11J3705-MSD1)							**Source: IUJ2836-02**					
Tetrachloroethene	26.8	0.50	0.32	ug/l	VS	25.0	0.800	104	65-130	1	20	
Toluene	25.0	0.50	0.36	ug/l	VS	25.0	ND	100	70-125	0.4	20	
1,1,1-Trichloroethane	29.8	0.50	0.30	ug/l	VS	25.0	ND	119	65-140	4	20	
1,1,2-Trichloroethane	24.1	0.50	0.30	ug/l	VS	25.0	ND	96	65-130	2	25	
Trichloroethene	26.1	0.50	0.26	ug/l	VS	25.0	0.460	103	65-125	0.8	20	
Trichlorofluoromethane	32.1	0.50	0.34	ug/l	VS	25.0	ND	128	60-145	4	25	
Vinyl chloride	27.8	0.50	0.40	ug/l	VS	25.0	ND	111	45-140	2	30	
Xylenes, Total	78.9	1.5	0.90	ug/l	VS	75.0	ND	105	60-130	2	20	
Surrogate: 4-Bromofluorobenzene	*27.2*			*ug/l*	VS	*25.0*		*109*	*80-120*			
Surrogate: Dibromofluoromethane	*26.6*			*ug/l*	VS	*25.0*		*106*	*80-120*			
Surrogate: Toluene-d8	*25.7*			*ug/l*	VS	*25.0*		*103*	*80-120*			

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J3644 Extracted: 10/27/11												
Blank Analyzed: 11/01/2011 (11J3644-BLK1)												
Bis(2-ethylhexyl)phthalate	2.02	5.00	1.70	ug/l	UP\							*Ja*
2,4-Dinitrotoluene	ND	5.00	0.200	ug/l	UP\							
N-Nitrosodimethylamine	ND	5.00	0.100	ug/l	UP\							
Pentachlorophenol	ND	5.00	0.100	ug/l	UP\							
2,4,6-Trichlorophenol	ND	6.00	0.100	ug/l	UP\							
Surrogate: 2,4,6-Tribromophenol	*13.9*			*ug/l*	UP\	*20.0*		*70*	*40-120*			
Surrogate: 2-Fluorobiphenyl	*7.86*			*ug/l*	UP\	*10.0*		*79*	*50-120*			
Surrogate: 2-Fluorophenol	*14.3*			*ug/l*	UP\	*20.0*		*71*	*30-120*			
Surrogate: Nitrobenzene-d5	*7.32*			*ug/l*	UP\	*10.0*		*73*	*45-120*			
Surrogate: Phenol-d6	*15.4*			*ug/l*	UP\	*20.0*		*77*	*35-120*			
Surrogate: Terphenyl-d14	*9.48*			*ug/l*	UP\	*10.0*		*95*	*50-125*			
LCS Analyzed: 11/01/2011 (11J3644-BS1)												**MNR1**
Bis(2-ethylhexyl)phthalate	10.3	5.00	1.70	ug/l	UP\	10.0		103	65-130			
2,4-Dinitrotoluene	9.54	5.00	0.200	ug/l	UP\	10.0		95	65-120			
N-Nitrosodimethylamine	8.38	5.00	0.100	ug/l	UP\	10.0		84	45-120			
Pentachlorophenol	9.56	5.00	0.100	ug/l	UP\	10.0		96	24-121			
2,4,6-Trichlorophenol	10.0	6.00	0.100	ug/l	UP\	10.0		100	55-120			
Surrogate: 2,4,6-Tribromophenol	*20.0*			*ug/l*	UP\	*20.0*		*100*	*40-120*			
Surrogate: 2-Fluorobiphenyl	*9.00*			*ug/l*	UP\	*10.0*		*90*	*50-120*			
Surrogate: 2-Fluorophenol	*14.8*			*ug/l*	UP\	*20.0*		*74*	*30-120*			
Surrogate: Nitrobenzene-d5	*8.54*			*ug/l*	UP\	*10.0*		*85*	*45-120*			
Surrogate: Phenol-d6	*16.1*			*ug/l*	UP\	*20.0*		*80*	*35-120*			
Surrogate: Terphenyl-d14	*9.98*			*ug/l*	UP\	*10.0*		*100*	*50-125*			
LCS Dup Analyzed: 11/01/2011 (11J3644-BSD1)												
Bis(2-ethylhexyl)phthalate	9.78	5.00	1.70	ug/l	UP\	10.0		98	65-130	6	20	
2,4-Dinitrotoluene	8.72	5.00	0.200	ug/l	UP\	10.0		87	65-120	9	20	
N-Nitrosodimethylamine	7.42	5.00	0.100	ug/l	UP\	10.0		74	45-120	12	20	
Pentachlorophenol	9.60	5.00	0.100	ug/l	UP\	10.0		96	24-121	0.4	25	
2,4,6-Trichlorophenol	9.06	6.00	0.100	ug/l	UP\	10.0		91	55-120	10	30	
Surrogate: 2,4,6-Tribromophenol	*19.6*			*ug/l*	UP\	*20.0*		*98*	*40-120*			
Surrogate: 2-Fluorobiphenyl	*7.96*			*ug/l*	UP\	*10.0*		*80*	*50-120*			
Surrogate: 2-Fluorophenol	*12.0*			*ug/l*	UP\	*20.0*		*60*	*30-120*			
Surrogate: Nitrobenzene-d5	*7.60*			*ug/l*	UP\	*10.0*		*76*	*45-120*			
Surrogate: Phenol-d6	*14.1*			*ug/l*	UP\	*20.0*		*70*	*35-120*			

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J3644 Extracted: 10/27/11												
LCS Dup Analyzed: 11/01/2011 (11J3644-BSD1)												
Surrogate: Terphenyl-d14	*8.96*			*ug/l*	UP\	*10.0*		*90*	*50-125*			

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METHOD BLANK/QC DATA

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J3042 Extracted: 10/24/11												
Blank Analyzed: 10/24/2011 (11J3042-BLK1)												
alpha-BHC	ND	0.010	0.0025	ug/l	DXD							
Surrogate: Decachlorobiphenyl	*0.403*			*ug/l*	DXD	*0.500*		*81*	*45-120*			
Surrogate: Tetrachloro-m-xylene	*0.368*			*ug/l*	DXD	*0.500*		*74*	*35-115*			
LCS Analyzed: 10/24/2011 (11J3042-BS1)												**MNR1**
alpha-BHC	0.403	0.010	0.0025	ug/l	DXD	0.500		81	45-115			
Surrogate: Decachlorobiphenyl	*0.455*			*ug/l*	DXD	*0.500*		*91*	*45-120*			
Surrogate: Tetrachloro-m-xylene	*0.410*			*ug/l*	DXD	*0.500*		*82*	*35-115*			
LCS Dup Analyzed: 10/24/2011 (11J3042-BSD1)												
alpha-BHC	0.394	0.010	0.0025	ug/l	DXD	0.500		79	45-115	2	30	
Surrogate: Decachlorobiphenyl	*0.454*			*ug/l*	DXD	*0.500*		*91*	*45-120*			
Surrogate: Tetrachloro-m-xylene	*0.402*			*ug/l*	DXD	*0.500*		*80*	*35-115*			

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METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11K0186 Extracted: 11/02/11												
Blank Analyzed: 11/02/2011 (11K0186-BLK1)												
Hexane Extractable Material (Oil & Grease)	ND	5.0	1.4	mg/l	DA							
LCS Analyzed: 11/02/2011 (11K0186-BS1)												**MNR1**
Hexane Extractable Material (Oil & Grease)	17.9	5.0	1.4	mg/l	DA	20.0		90	78-114			
LCS Dup Analyzed: 11/02/2011 (11K0186-BSD1)												
Hexane Extractable Material (Oil & Grease)	18.5	5.0	1.4	mg/l	DA	20.0		92	78-114	3	11	

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METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J2772 Extracted: 10/21/11												
Blank Analyzed: 10/27/2011 (11J2772-BLK1)												
Mercury	ND	0.20	0.10	ug/l	DB							
LCS Analyzed: 10/27/2011 (11J2772-BS1)												
Mercury	7.56	0.20	0.10	ug/l	DB	8.00		95	85-115			
Matrix Spike Analyzed: 10/27/2011 (11J2772-MS1)						**Source: IUJ2600-14**						
Mercury	7.65	0.20	0.10	ug/l	DB	8.00	ND	96	70-130			
Matrix Spike Dup Analyzed: 10/27/2011 (11J2772-MSD1)						**Source: IUJ2600-14**						
Mercury	7.60	0.20	0.10	ug/l	DB	8.00	ND	95	70-130	0.6	20	
Batch: 11J3030 Extracted: 10/24/11												
Blank Analyzed: 10/26/2011 (11J3030-BLK1)												
Calcium	0.0506	0.10	0.050	mg/l	NH							*Ja*
Magnesium	ND	0.020	0.012	mg/l	NH							
LCS Analyzed: 10/26/2011 (11J3030-BS1)												
Calcium	2.64	0.10	0.050	mg/l	NH	2.50		105	85-115			
Magnesium	2.60	0.020	0.012	mg/l	NH	2.50		104	85-115			
Matrix Spike Analyzed: 10/26/2011 (11J3030-MS1)						**Source: IUJ2238-01**						
Calcium	73.1	0.10	0.050	mg/l	NH	2.50	69.3	156	70-130			*MHA*
Magnesium	54.9	0.020	0.012	mg/l	NH	2.50	51.7	127	70-130			*MHA*
Matrix Spike Analyzed: 10/26/2011 (11J3030-MS2)						**Source: IUJ2238-02**						
Magnesium	187	0.020	0.012	mg/l	NH	2.50	185	79	70-130			*MHA*

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METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J3030 Extracted: 10/24/11												
Matrix Spike Dup Analyzed: 10/26/2011 (11J3030-MSD1)							**Source: IUJ2238-01**					
Calcium	71.8	0.10	0.050	mg/l	NH	2.50	69.3	102	70-130	2	20	*MHA*
Magnesium	53.2	0.020	0.012	mg/l	NH	2.50	51.7	57	70-130	3	20	*MHA*
Batch: 11J3674 Extracted: 10/27/11												
Blank Analyzed: 10/28/2011 (11J3674-BLK1)												
Zinc	ND	20.0	6.00	ug/l	NH							
LCS Analyzed: 10/28/2011 (11J3674-BS1)												
Zinc	501	20.0	6.00	ug/l	NH	500		100	85-115			
Matrix Spike Analyzed: 10/28/2011 (11J3674-MS1)							**Source: IUJ2388-03**					
Zinc	518	20.0	6.00	ug/l	NH	500	11.6	101	70-130			
Matrix Spike Dup Analyzed: 10/28/2011 (11J3674-MSD1)							**Source: IUJ2388-03**					
Zinc	528	20.0	6.00	ug/l	NH	500	11.6	103	70-130	2	20	
Batch: 11J3745 Extracted: 10/28/11												
Blank Analyzed: 11/02/2011 (11J3745-BLK1)												
Cadmium	ND	1.0	0.10	ug/l	NH							
Copper	ND	2.00	0.500	ug/l	NH							
Lead	ND	1.0	0.20	ug/l	NH							
Selenium	ND	2.0	0.50	ug/l	NH							
LCS Analyzed: 11/02/2011 (11J3745-BS1)												
Cadmium	84.8	1.0	0.10	ug/l	NH	80.0		106	85-115			
Copper	89.6	2.00	0.500	ug/l	NH	80.0		112	85-115			
Lead	87.3	1.0	0.20	ug/l	NH	80.0		109	85-115			
Selenium	88.9	2.0	0.50	ug/l	NH	80.0		111	85-115			

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METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J3745 Extracted: 10/28/11												
Matrix Spike Analyzed: 11/02/2011 (11J3745-MS1)						**Source: IUJ2388-03**						
Cadmium	86.3	1.0	0.10	ug/l	NH	80.0	ND	108	70-130			
Copper	87.3	2.00	0.500	ug/l	NH	80.0	ND	109	70-130			
Lead	86.0	1.0	0.20	ug/l	NH	80.0	0.371	107	70-130			
Selenium	89.0	2.0	0.50	ug/l	NH	80.0	ND	111	70-130			
Matrix Spike Analyzed: 11/02/2011 (11J3745-MS2)						**Source: IUJ2882-01**						
Cadmium	84.4	1.0	0.10	ug/l	NH	80.0	ND	106	70-130			
Copper	85.7	2.00	0.500	ug/l	NH	80.0	1.93	105	70-130			
Lead	89.3	1.0	0.20	ug/l	NH	80.0	ND	112	70-130			
Selenium	90.2	2.0	0.50	ug/l	NH	80.0	1.11	111	70-130			
Matrix Spike Dup Analyzed: 11/02/2011 (11J3745-MSD1)						**Source: IUJ2388-03**						
Cadmium	81.5	1.0	0.10	ug/l	NH	80.0	ND	102	70-130	6	20	
Copper	80.6	2.00	0.500	ug/l	NH	80.0	ND	101	70-130	8	20	
Lead	79.5	1.0	0.20	ug/l	NH	80.0	0.371	99	70-130	8	20	
Selenium	87.0	2.0	0.50	ug/l	NH	80.0	ND	109	70-130	2	20	

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J2606 Extracted: 10/20/11												
Blank Analyzed: 10/27/2011 (11J2606-BLK1)												
Mercury	ND	0.20	0.10	ug/l	DB							
LCS Analyzed: 10/27/2011 (11J2606-BS1)												
Mercury	7.88	0.20	0.10	ug/l	DB	8.00		98	85-115			
Matrix Spike Analyzed: 10/27/2011 (11J2606-MS1)						**Source: IUJ2441-39**						
Mercury	7.79	0.20	0.10	ug/l	DB	8.00	ND	97	70-130			
Matrix Spike Dup Analyzed: 10/27/2011 (11J2606-MSD1)						**Source: IUJ2441-39**						
Mercury	7.73	0.20	0.10	ug/l	DB	8.00	ND	97	70-130	0.8	20	
Batch: 11J3066 Extracted: 10/24/11												
Blank Analyzed: 10/25/2011 (11J3066-BLK1)												
Calcium	ND	0.10	0.050	mg/l	NH							
Magnesium	ND	0.020	0.012	mg/l	NH							
Zinc	ND	20.0	6.00	ug/l	NH							
LCS Analyzed: 10/25/2011 (11J3066-BS1)												
Calcium	2.63	0.10	0.050	mg/l	NH	2.50		105	85-115			
Magnesium	2.57	0.020	0.012	mg/l	NH	2.50		103	85-115			
Zinc	500	20.0	6.00	ug/l	NH	500		100	85-115			
Matrix Spike Analyzed: 10/25/2011 (11J3066-MS1)						**Source: IUJ2388-03**						
Calcium	205	0.10	0.050	mg/l	NH	2.50	197	350	70-130			*MHA*
Magnesium	25.8	0.020	0.012	mg/l	NH	2.50	22.8	121	70-130			
Zinc	513	20.0	6.00	ug/l	NH	500	12.1	100	70-130			

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DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J3066 Extracted: 10/24/11												
Matrix Spike Dup Analyzed: 10/25/2011 (11J3066-MSD1)							**Source: IUJ2388-03**					
Calcium	199	0.10	0.050	mg/l	NH	2.50	197	106	70-130	3	20	*MHA*
Magnesium	25.1	0.020	0.012	mg/l	NH	2.50	22.8	95	70-130	3	20	
Zinc	510	20.0	6.00	ug/l	NH	500	12.1	100	70-130	0.7	20	
Batch: 11J3746 Extracted: 10/28/11												
Blank Analyzed: 11/01/2011-11/02/2011 (11J3746-BLK1)												
Cadmium	ND	1.0	0.10	ug/l	KB1							
Copper	ND	2.00	0.500	ug/l	RDC							
Lead	ND	1.0	0.20	ug/l	KB1							
Selenium	ND	2.0	0.50	ug/l	KB1							
LCS Analyzed: 11/01/2011-11/02/2011 (11J3746-BS1)												
Cadmium	80.1	1.0	0.10	ug/l	KB1	80.0		100	85-115			
Copper	80.5	2.00	0.500	ug/l	RDC	80.0		101	85-115			
Lead	77.4	1.0	0.20	ug/l	KB1	80.0		97	85-115			
Selenium	75.1	2.0	0.50	ug/l	KB1	80.0		94	85-115			
Matrix Spike Analyzed: 11/01/2011-11/02/2011 (11J3746-MS1)							**Source: IUJ2924-03**					
Cadmium	79.2	1.0	0.10	ug/l	KB1	80.0	ND	99	70-130			
Copper	74.8	2.00	0.500	ug/l	RDC	80.0	ND	94	70-130			
Lead	77.5	1.0	0.20	ug/l	KB1	80.0	ND	97	70-130			
Selenium	77.6	2.0	0.50	ug/l	KB1	80.0	0.653	96	70-130			
Matrix Spike Analyzed: 11/01/2011-11/02/2011 (11J3746-MS2)							**Source: IUJ3102-05**					
Cadmium	79.9	1.0	0.10	ug/l	KB1	80.0	ND	100	70-130			
Copper	74.7	2.00	0.500	ug/l	RDC	80.0	ND	93	70-130			
Lead	77.0	1.0	0.20	ug/l	KB1	80.0	ND	96	70-130			
Selenium	77.6	2.0	0.50	ug/l	KB1	80.0	1.20	96	70-130			

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Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J3746 Extracted: 10/28/11												
Matrix Spike Dup Analyzed: 11/01/2011-11/02/2011 (11J3746-MSD1)							**Source: IUJ2924-03**					
Cadmium	81.3	1.0	0.10	ug/l	KB1	80.0	ND	102	70-130	3	20	
Copper	76.0	2.00	0.500	ug/l	RDC	80.0	ND	95	70-130	2	20	
Lead	79.4	1.0	0.20	ug/l	KB1	80.0	ND	99	70-130	2	20	
Selenium	78.5	2.0	0.50	ug/l	KB1	80.0	0.653	97	70-130	1	20	
Matrix Spike Dup Analyzed: 11/01/2011-11/02/2011 (11J3746-MSD2)							**Source: IUJ3102-05**					
Cadmium	80.1	1.0	0.10	ug/l	KB1	80.0	ND	100	70-130	0.3	20	
Copper	74.8	2.00	0.500	ug/l	RDC	80.0	ND	93	70-130	0.2	20	
Lead	78.7	1.0	0.20	ug/l	KB1	80.0	ND	98	70-130	2	20	
Selenium	77.9	2.0	0.50	ug/l	KB1	80.0	1.20	96	70-130	0.3	20	

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J2465 Extracted: 10/20/11												
Blank Analyzed: 10/20/2011 (11J2465-BLK1)												
Specific Conductance	ND	1.0	1.0	µs/cm @	MC							
LCS Analyzed: 10/20/2011 (11J2465-BS1)												
Specific Conductance	1360	1.0	1.0	µs/cm @	MC	1410		96	90-110			
Duplicate Analyzed: 10/20/2011 (11J2465-DUP1)						**Source: IUJ2402-01**						
Specific Conductance	907	1.0	1.0	µs/cm @	MC		921			2	5	
Batch: 11J2645 Extracted: 10/20/11												
Blank Analyzed: 10/21/2011 (11J2645-BLK1)												
Chloride	ND	0.50	0.30	mg/l	NN							
Nitrate-N	ND	0.11	0.060	mg/l	NN							
Nitrite-N	ND	0.15	0.090	mg/l	NN							
Nitrate/Nitrite-N	ND	0.26	0.15	mg/l	NN							
Sulfate	ND	0.50	0.30	mg/l	NN							
LCS Analyzed: 10/21/2011 (11J2645-BS1)												
Chloride	4.72	0.50	0.30	mg/l	NN	5.00		94	90-110			
Nitrate-N	1.07	0.11	0.060	mg/l	NN	1.13		95	90-110			
Nitrite-N	1.44	0.15	0.090	mg/l	NN	1.52		94	90-110			
Sulfate	9.45	0.50	0.30	mg/l	NN	10.0		95	90-110			
Matrix Spike Analyzed: 10/21/2011 (11J2645-MS1)						**Source: IUJ2388-03**						
Chloride	294	25	15	mg/l	NN	50.0	249	89	80-120			*MHA*
Nitrate-N	14.0	5.5	3.0	mg/l	NN	11.3	0.131	122	80-120			*M1*
Nitrite-N	18.6	7.5	4.5	mg/l	NN	15.2	ND	122	80-120			*M1*
Sulfate	230	25	15	mg/l	NN	100	151	79	80-120			*M2*

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J2645 Extracted: 10/20/11												
Matrix Spike Dup Analyzed: 10/21/2011 (11J2645-MSD1)						**Source: IUJ2388-03**						
Chloride	289	25	15	mg/l	NN	50.0	249	81	80-120	1	20	*MHA*
Nitrate-N	13.8	5.5	3.0	mg/l	NN	11.3	0.131	121	80-120	0.8	20	*M1*
Nitrite-N	17.9	7.5	4.5	mg/l	NN	15.2	ND	118	80-120	4	20	
Sulfate	227	25	15	mg/l	NN	100	151	76	80-120	1	20	*M2*
Batch: 11J2650 Extracted: 10/20/11												
Blank Analyzed: 10/20/2011 (11J2650-BLK1)												
Surfactants (MBAS)	ND	0.10	0.050	mg/l	NCP							
LCS Analyzed: 10/20/2011 (11J2650-BS1)												
Surfactants (MBAS)	0.257	0.10	0.050	mg/l	NCP	0.250		103	90-110			
Matrix Spike Analyzed: 10/20/2011 (11J2650-MS1)						**Source: IUJ2394-01**						
Surfactants (MBAS)	0.281	0.10	0.050	mg/l	NCP	0.250	ND	113	50-125			
Matrix Spike Dup Analyzed: 10/20/2011 (11J2650-MSD1)						**Source: IUJ2394-01**						
Surfactants (MBAS)	0.266	0.10	0.050	mg/l	NCP	0.250	ND	106	50-125	6	20	
Batch: 11J2665 Extracted: 10/21/11												
Blank Analyzed: 10/21/2011 (11J2665-BLK1)												
Perchlorate	ND	4.0	0.95	ug/l	mn							
LCS Analyzed: 10/21/2011 (11J2665-BS1)												
Perchlorate	25.1	4.0	0.95	ug/l	mn	25.0		100	85-115			

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Batch: 11J2665 Extracted: 10/21/11												
Matrix Spike Analyzed: 10/21/2011 (11J2665-MS1)						**Source: IUJ2345-01**						
Perchlorate	25.3	4.0	0.95	ug/l	mn	25.0	ND	101	80-120			
Matrix Spike Dup Analyzed: 10/21/2011 (11J2665-MSD1)						**Source: IUJ2345-01**						
Perchlorate	25.2	4.0	0.95	ug/l	mn	25.0	ND	101	80-120	0.3	20	
Batch: 11J2746 Extracted: 10/21/11												
Blank Analyzed: 10/21/2011 (11J2746-BLK1)												
Turbidity	ND	1.0	0.040	NTU	LA							
Duplicate Analyzed: 10/21/2011 (11J2746-DUP1)						**Source: IUJ2388-03**						
Turbidity	0.0700	1.0	0.040	NTU	LA		0.0700			0	20	*Ja*
Batch: 11J2761 Extracted: 10/21/11												
Blank Analyzed: 10/26/2011 (11J2761-BLK1)												
Biochemical Oxygen Demand	ND	2.0	0.50	mg/l	XL							
LCS Analyzed: 10/26/2011 (11J2761-BS1)												
Biochemical Oxygen Demand	202	100	25	mg/l	XL	198		102	85-115			
LCS Dup Analyzed: 10/26/2011 (11J2761-BSD1)												
Biochemical Oxygen Demand	206	100	25	mg/l	XL	198		104	85-115	2	20	
Batch: 11J3111 Extracted: 10/25/11												
Blank Analyzed: 10/25/2011 (11J3111-BLK1)												
Total Dissolved Solids	ND	10	1.0	mg/l	MC							

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Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J3111 Extracted: 10/25/11												
LCS Analyzed: 10/25/2011 (11J3111-BS1)												
Total Dissolved Solids	1000	10	1.0	mg/l	MC	1000		100	90-110			
Duplicate Analyzed: 10/25/2011 (11J3111-DUP1)						**Source: IUJ2739-06**						
Total Dissolved Solids	393	10	1.0	mg/l	MC		399			2	10	
Batch: 11J3262 Extracted: 10/25/11												
Blank Analyzed: 10/25/2011 (11J3262-BLK1)												
Total Suspended Solids	ND	10	1.0	mg/l	MC							
LCS Analyzed: 10/25/2011 (11J3262-BS1)												
Total Suspended Solids	1020	10	1.0	mg/l	MC	1000		102	85-115			
Duplicate Analyzed: 10/25/2011 (11J3262-DUP1)						**Source: IUJ2403-04**						
Total Suspended Solids	144	10	1.0	mg/l	MC		148			3	10	
Batch: 11J3296 Extracted: 10/26/11												
Blank Analyzed: 10/26/2011 (11J3296-BLK1)												
Total Organic Carbon	ND	1.0	0.50	mg/l	FZ							
LCS Analyzed: 10/26/2011 (11J3296-BS1)												
Total Organic Carbon	9.76	1.0	0.50	mg/l	FZ	10.0		98	90-110			
Matrix Spike Analyzed: 10/26/2011 (11J3296-MS1)						**Source: IUJ2588-06**						
Total Organic Carbon	1050	200	100	mg/l	FZ	5.00	1110	-1170	80-120			*MHA*

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Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J3296 Extracted: 10/26/11												
Matrix Spike Dup Analyzed: 10/26/2011 (11J3296-MSD1)							**Source: IUJ2588-06**					
Total Organic Carbon	1030	200	100	mg/l	FZ	5.00	1110	-1590	80-120	2	20	*MHA*
Batch: 11J3426 Extracted: 10/26/11												
Blank Analyzed: 10/26/2011 (11J3426-BLK1)												
Ammonia-N (Distilled)	ND	0.500	0.500	mg/l	NCP							
LCS Analyzed: 10/26/2011 (11J3426-BS1)												
Ammonia-N (Distilled)	9.80	0.500	0.500	mg/l	NCP	10.0		98	80-115			
Matrix Spike Analyzed: 10/26/2011 (11J3426-MS1)							**Source: IUJ2388-03**					
Ammonia-N (Distilled)	10.1	0.500	0.500	mg/l	NCP	10.0	0.840	92	70-120			
Matrix Spike Dup Analyzed: 10/26/2011 (11J3426-MSD1)							**Source: IUJ2388-03**					
Ammonia-N (Distilled)	10.4	0.500	0.500	mg/l	NCP	10.0	0.840	95	70-120	3	15	
Batch: 11K0164 Extracted: 11/01/11												
Blank Analyzed: 11/01/2011 (11K0164-BLK1)												
Total Cyanide	ND	5.0	2.2	ug/l	SLA							
LCS Analyzed: 11/01/2011 (11K0164-BS1)												
Total Cyanide	104	5.0	2.2	ug/l	SLA	100		104	90-110			
Matrix Spike Analyzed: 11/01/2011 (11K0164-MS1)							**Source: IUJ2388-03**					
Total Cyanide	103	5.0	2.2	ug/l	SLA	100	ND	103	70-115			

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Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11K0164 Extracted: 11/01/11												
Matrix Spike Dup Analyzed: 11/01/2011 (11K0164-MSD1)							**Source: IUJ2388-03**					
Total Cyanide	107	5.0	2.2	ug/l	SLA	100	ND	107	70-115	4	15	

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8692

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8692 Extracted: 11/03/11												
LCS Analyzed: 11/03/2011 (S110124-03)						**Source:**						
Uranium, Total	57	1	N/A	pCi/L	CSS	56.5		101	80-120			
Blank Analyzed: 11/03/2011 (S110124-04)						**Source:**						
Uranium, Total	ND	1	N/A	pCi/L	CSS				-			*U*
Duplicate Analyzed: 11/03/2011 (S110124-05)						**Source: IUJ2388-03**						
Uranium, Total	0.252	1	N/A	pCi/L	CSS		0.221		-	13		*Jb*

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900

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8692 Extracted: 11/09/11												
LCS Analyzed: 11/09/2011 (S110124-03)						**Source:**						
Gross Alpha	38.2	3	N/A	pCi/L	DVP	33.7		113	70-130			
Gross Beta	26.8	4	N/A	pCi/L	DVP	28.6		94	70-130			
Blank Analyzed: 11/09/2011 (S110124-04)						**Source:**						
Gross Alpha	-0.111	3	N/A	pCi/L	DVP				-			*U*
Gross Beta	-0.509	4	N/A	pCi/L	DVP				-			*U*
Duplicate Analyzed: 11/09/2011 (S110124-05)						**Source: IUJ2388-03**						
Gross Alpha	1.4	3	N/A	pCi/L	DVP		1.7		-	0		*U*
Gross Beta	10.4	4	N/A	pCi/L	DVP		11.8		-	13		

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901.1

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8692 Extracted: 10/31/11												
LCS Analyzed: 11/04/2011 (S110124-03)						**Source:**						
Cobalt-60	111	10	N/A	pCi/L	RTM	115		97	80-120			
Cesium-137	119	20	N/A	pCi/L	RTM	124		96	80-120			
Blank Analyzed: 11/04/2011 (S110124-04)						**Source:**						
Cesium-137	ND	20	N/A	pCi/L	RTM				-			*U*
Potassium-40	ND	25	N/A	pCi/L	RTM				-			*U*
Duplicate Analyzed: 11/04/2011 (S110124-05)						**Source: IUJ2388-03**						
Cesium-137	ND	20	N/A	pCi/L	RTM		0		-	0		*U*
Potassium-40	ND	25	N/A	pCi/L	RTM		0		-	0		*U*

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903.1

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8692 Extracted: 11/08/11												
LCS Analyzed: 11/08/2011 (S110124-03)						**Source:**						
Radium-226	45.9	1	N/A	pCi/L	TM	50.1		92	80-120			
Blank Analyzed: 11/08/2011 (S110124-04)						**Source:**						
Radium-226	0.087	1	N/A	pCi/L	TM				-			*U*
Duplicate Analyzed: 11/08/2011 (S110124-05)						**Source: IUJ2388-03**						
Radium-226	0.372	1	N/A	pCi/L	TM		0.5		-	0		*U*

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904

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8692 Extracted: 11/07/11												
LCS Analyzed: 11/07/2011 (S110124-03)						**Source:**						
Radium-228	4.74	1	N/A	pCi/L	ASM	5.61		84	60-140			
Blank Analyzed: 11/07/2011 (S110124-04)						**Source:**						
Radium-228	-0.013	1	N/A	pCi/L	ASM				-			*U*
Duplicate Analyzed: 11/07/2011 (S110124-05)						**Source: IUJ2388-03**						
Radium-228	0.481	1	N/A	pCi/L	ASM		0.178		-	0		*U*

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