APPENDIX G

Section 26

Outfall 009 – November 20, 2010 Test America Analytical Laboratory Report THIS PAGE LEFT INTENTIONALLY BLANK

THE LEADER IN ENVIRONMENTAL TESTING

LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project: Routine Outfall 009 2010 Routine Outfall 009

Sampled: 11/20/10 Received: 11/20/10 Issued: 12/30/10 11:27

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

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 11 pages, are included and are an integral part of this report.

This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

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

ADDITIONAL INFORMATION:

The continuing calibration standard [ST1129A] analyzed on November 30, 2010 at 5:13 has an internal standard recovery for 13C-1,2,3,6,7,8-HxCDD at 119% which is above the method recommended criteria of 118% deviation from the initial calibration curve. Also, the internal standard recovery for 13C-1,2,3,4,7,8,9-HpCDF is 130% which is above the method recommended criteria of 129% deviation from the initial calibration curve. This sample has recoveries for these internal standards within the method acceptance limits and no further action is required.

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.

LABORATORY ID	CLIENT ID	MATRIX
ITK2126-01	Outfall 009	Water
ITK2126-02	Outfall 009	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



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITK2126

Sampled: 11/20/10 Received: 11/20/10

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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: ITK2126-02 (Outfall 009 - Water)										
Reporting Units: mg/l										
Hexane Extractable Material (Oil &	EPA 1664A	10L0691	1.3	4.7	ND	1	DA	12/07/10		
Grease)										

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MWH-Pasadena/BoeingProject ID:Routine Outfall 009 2010618 Michillinda Avenue, Suite 200Routine Outfall 009Sampled:Arcadia, CA 91007Report Number:ITK2126Received:Attention: Bronwyn KellyItX2126Received:

METALS MDL Reporting Sample Dilution Date Data Analyte Method Batch Limit Limit Result Factor Analyzed Qualifiers Analyst Sample ID: ITK2126-01 (Outfall 009 - Water) Reporting Units: ug/l 10K3462 0.10 0.20 EPA 245.1 ND DB 11/30/10 Mercury 1 Antimony EPA 200.8 10L0590 0.30 2.0 0.48 RDC 12/06/10 Ja 1 EPA 200.8 10L0590 0.10 0.12 RDC Cadmium 1.0 12/06/10 Ja 1 EPA 200.8 10L0590 0.500 2.00 3.22 RDC 12/06/10 Copper 1 Lead EPA 200.8 10L0590 0.20 1.0 1.2 RDC 12/06/10 1 Thallium 10L0590 ND RDC 12/06/10 EPA 200.8 0.20 1.0 1

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITK2126

Sampled: 11/20/10 Received: 11/20/10

DISSOLVED METALS MDL Reporting Sample Dilution Date Data Method Batch Limit Limit Result Factor Analyzed Qualifiers Analyte Analyst Sample ID: ITK2126-01 (Outfall 009 - Water) - cont. Reporting Units: ug/l 0.20 EPA 245.1-Diss 10K3461 0.10 ND DB 11/30/10 Mercury 1 Antimony EPA 200.8-Diss 10L0593 0.30 2.0 0.48 RDC 12/06/10 1 Ja 10L0593 0.10 ND RDC Cadmium EPA 200.8-Diss 1.0 12/06/10 1 EPA 200.8-Diss 10L0593 0.500 2.00 2.94 RDC 12/06/10 Copper 1 Lead EPA 200.8-Diss 10L0593 0.20 0.25 RDC 12/06/10 1.0 1 Ja Thallium 10L0593 RDC 12/06/10 EPA 200.8-Diss 0.20 1.0 ND 1

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITK2126

Sampled: 11/20/10 Received: 11/20/10

INORGANICS									
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITK2126-01 (Outfall 009 - `	Water) - cont.								
Reporting Units: mg/l									
Chloride	EPA 300.0	10K2637	0.25	0.50	1.5	1	KS	11/20/10	
Total Cyanide	SM4500CN-E	10L0113	0.0022	0.0050	ND	1	SLA	12/01/10	
Nitrate/Nitrite-N	EPA 300.0	10K2637	0.15	0.26	0.46	1	KS	11/20/10	
Sulfate	EPA 300.0	10K2637	0.20	0.50	3.5	1	KS	11/20/10	
Total Dissolved Solids	SM2540C	10K3246	1.0	10	120	1	MC	11/26/10	
Total Suspended Solids	SM 2540D	10K3228	1.0	10	6.0	1	DC	11/24/10	Ja

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Sample ID: ITK2126-01 (Outfall 009 - Water) - cont.

8641

Reporting Units: pCi/L

Uranium, Total

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Proje Report Nu		Routine Ou	utfall 009 201 utfall 009	0		1	11/20/10 11/20/10	
Analyte	Method	Batch	8641 MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers

1

0.046

1

CSS

12/15/10

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8641

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	5		Routine Or Routine Or ITK2126	utfall 009 201 utfall 009	0			11/20/10 11/20/10	
Analyte	Method	Batch	900 MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers

Sample ID: ITK2126-01 (Outfall 00	9 - Water) - cont.							
Reporting Units: pCi/L								
Gross Alpha	900	8641	3	0.709	1	DVP	12/07/10	Jb
Gross Beta	900	8641	4	1.48	1	DVP	12/07/10	Jb

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Re Attention: Bronwyn Kelly	Project ID: port Number:	Routine Outfall 009 2010 Routine Outfall 009 ITK2126	Sampled: Received:	11/20/10 11/20/10
		901.1		

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITK2126-01 (Outfall 00)	9 - Water) - cont.								
Reporting Units: pCi/L									
Cesium-137	901.1	8641		20	ND	1	LS	12/06/10	U
Potassium-40	901.1	8641		25	ND	1	LS	12/06/10	U

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly		5		Routine Outfall 009 2010 Routine Outfall 009 ITK2126				11/20/10 11/20/10	
Analyte	Method	Batch	903.1 MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers

Sample ID: ITK2126-01 (Outfall 009 - Water	r) - cont.							
Reporting Units: pCi/L								
Radium-226	903.1	8641	1	0.047	1	ТМ	12/08/10	U

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Reporting Units: pCi/L

Radium-228

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

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12/09/10

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61 Ai	WH-Pasadena/Boeing 8 Michillinda Avenue, Suite 200 readia, CA 91007 ttention: Bronwyn Kelly	Project Report Numb		Routine Ou	ntfall 009 2010 ntfall 009	0		Sampled: Received:	11/20/10 11/20/10	
An	alyte M	lethod Ba	tch	904 MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sa	mple ID: ITK2126-01 (Outfall 009 - Water)	- cont.								

1

-0.066

8641

904

THE LEADER IN ENVIRONMENTAL TESTING

Reporting Units: pCi/L

Strontium-90

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12/06/10

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project ID: Report Number:	Routine Or	utfall 009 201 utfall 009	0		1	11/20/10 11/20/10	
Analyte Meth Sample ID: ITK2126-01 (Outfall 009 - Water) - co		905 MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers

2

0.089

8641

905

THE LEADER IN ENVIRONMENTAL TESTING

Reporting Units: pCi/L

Tritium

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project ID: Report Number:	Routine Ou	utfall 009 201) utfall 009	0		1	11/20/10 11/20/10	
Analyte Sample ID: ITK2126-01 (Outfall 009 - Water	Method Batch ') - cont.	906 MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers

200

46.8

1

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12/09/10

U

8641

906

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITK2126

Sampled: 11/20/10 Received: 11/20/10

			MDL	Reporting	-	Dilution		Date	Data
Analyte	Method	Batch	Limit	Limit	Result	Factor	Analyst	Analyzed	Qualifiers
Sample ID: ITK2126-01 (Outfall 009 -	- Water) - cont.								
Reporting Units: ug/L 1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	328385	0.0000002	9 0.00005	1.4e-005	0.98	SO	11/30/10	J, B
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B		0.0000001		3.4e-006	0.98	SO	11/30/10	J, Q, B
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B		0.0000002		3.5e-007	0.98	SO	11/30/10	J, B
1,2,3,4,7,8-HxCDD	EPA-5 1613B		0.0000002		5.5e-007	0.98	SO	11/30/10	J, Q, B
1,2,3,4,7,8-HxCDF	EPA-5 1613B	328385	0.0000002	0.00005	ND	0.98	SO	11/30/10	
1,2,3,6,7,8-HxCDD	EPA-5 1613B	328385	0.0000001	7 0.00005	6.8e-007	0.98	SO	11/30/10	J, B
1,2,3,6,7,8-HxCDF	EPA-5 1613B		0.0000001		ND	0.98	SO	11/30/10	
1,2,3,7,8,9-HxCDD	EPA-5 1613B	328385	0.0000001	7 0.00005	8.5e-007	0.98	SO	11/30/10	J, B
1,2,3,7,8,9-HxCDF	EPA-5 1613B		0.0000001		ND	0.98	SO	11/30/10	
1,2,3,7,8-PeCDD	EPA-5 1613B		0.0000004		ND	0.98	SO	11/30/10	
1,2,3,7,8-PeCDF	EPA-5 1613B		0.0000002		ND	0.98	SO	11/30/10	
2,3,4,6,7,8-HxCDF	EPA-5 1613B		0.0000002		ND	0.98	SO	11/30/10	
2,3,4,7,8-PeCDF	EPA-5 1613B		0.0000003		ND	0.98	SO	11/30/10	
2,3,7,8-TCDD	EPA-5 1613B		0.0000002		ND	0.98	SO	11/30/10	
2,3,7,8-TCDF	EPA-5 1613B		0.0000003		ND	0.98	SO	11/30/10	D
OCDD OCDF	EPA-5 1613B EPA-5 1613B		0.0000004		0.00016 9.2e-006	0.98 0.98	SO SO	11/30/10 11/30/10	В Ј, В
Total HpCDD	EPA-5 1613B		0.0000002		9.2e-000 3.3e-005	0.98	SO	11/30/10	Ј, В Ј, В
Total HpCDF	EPA-5 1613B		0.0000002		8e-006	0.98	SO	11/30/10	, D J, Q, B
Total HxCDD	EPA-5 1613B		0.0000001		4.8e-006	0.98	SO	11/30/10	J, Q, B J, Q, B
Total HxCDF	EPA-5 1613B		0.0000001		2e-006	0.98	SO	11/30/10	J, Q, B J, Q, B
Total PeCDD	EPA-5 1613B		0.0000004		ND	0.98	SO	11/30/10	., ()
Total PeCDF	EPA-5 1613B		0.0000002		ND	0.98	SO	11/30/10	
Total TCDD	EPA-5 1613B		0.0000002		1.6e-006	0.98	SO	11/30/10	J, Q, B
Total TCDF	EPA-5 1613B	328385	0.0000002	4 0.00001	ND	0.98	SO	11/30/10	
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD ((23-140%)				90 %				
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF ((28-143%)				96 %				
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)				92 %				
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32					73 %				
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26					82 %				
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28					88 %				
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26					82 %				
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29					90 %				
Surrogate: 13C-1,2,3,7,8-PeCDD (25-1	·				78 %				
Surrogate: 13C-1,2,3,7,8-PeCDF (24-1 Surrogate: 13C-2,3,4,6,7,8-HxCDF (28					80 % 83 %				
Surrogate: 13C-2,3,4,0,7,8-PeCDF (20 Surrogate: 13C-2,3,4,7,8-PeCDF (21-1	·				83 % 78 %				
Surrogate: 13C-2,3,4,7,8-TCDD (25-164					78 % 77 %				
Surrogate: 13C-2,3,7,8-TCDD (25-104) Surrogate: 13C-2,3,7,8-TCDF (24-169)					77 %				
Surrogate: 13C-OCDD (17-157%)	· •/				86 %				
Surrogate: 37Cl4-2,3,7,8-TCDD (35-19	97%)				88 %				
	/				/ -				

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Sampled: 11/20/10 Received: 11/20/10

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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 (ITK2126-01) - Wate	er				
EPA 300.0	2	11/20/2010 12:45	11/20/2010 16:20	11/20/2010 17:00	11/20/2010 19:55
Filtration	1	11/20/2010 12:45	11/20/2010 16:20	11/20/2010 18:30	11/20/2010 18:30

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Sampled: 11/20/10

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Received: 11/20/10

METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L0691 Extracted: 12/07/10										
Blank Analyzed: 12/07/2010 (10L0691- Hexane Extractable Material (Oil & Grease)	BLK1) ND	5.0	mg/l							
LCS Analyzed: 12/07/2010 (10L0691-B Hexane Extractable Material (Oil & Grease)	51) 19.8	5.0	mg/l	20.0		99	78-114			MNR1
LCS Dup Analyzed: 12/07/2010 (10L06 Hexane Extractable Material (Oil & Grease)	91-BSD1) 20.4	5.0	mg/l	20.0		102	78-114	3	11	

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Sampled: 11/20/10 Received: 11/20/10

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10K3462 Extracted: 11/29/10										
Blank Analyzed: 11/30/2010 (10K3462-B	SLK1)									
Mercury	ND	0.20	ug/l							
LCS Analyzed: 11/30/2010 (10K3462-BS	51)									
Mercury	8.39	0.20	ug/l	8.00		105	85-115			
Matrix Spike Analyzed: 11/30/2010 (10K	(3462-MS1)				Source: I	TK2024-0	1			
Mercury	5.75	0.20	ug/l	8.00	ND	72	70-130			
Matrix Spike Dup Analyzed: 11/30/2010	(10K3462-M	ISD1)			Source: I	TK2024-0	1			
Mercury	5.55	0.20	ug/l	8.00	ND	69	70-130	4	20	M2
Batch: 10L0590 Extracted: 12/06/10										
Blank Analyzed: 12/06/2010 (10L0590-B	LK1)									
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 12/06/2010 (10L0590-BS	1)									
Antimony	83.2	2.0	ug/l	80.0		104	85-115			
Cadmium	83.4	1.0	ug/l	80.0		104	85-115			
Copper	77.9	2.00	ug/l	80.0		97	85-115			
Lead	80.6	1.0	ug/l	80.0		101	85-115			
Thallium	80.6	1.0	ug/l	80.0		101	85-115			

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Sampled: 11/20/10 Received: 11/20/10

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METHOD BLANK/QC DATA

METALS

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 10L0590 Extracted: 12/06/10										
Matrix Spike Analyzed: 12/06/2010 (10I	.0590-MS1)				Source: I	TK2645-0	1			
Antimony	87.3	2.0	ug/l	80.0	0.578	108	70-130			
Cadmium	83.5	1.0	ug/l	80.0	ND	104	70-130			
Copper	84.1	2.00	ug/l	80.0	7.30	96	70-130			
Lead	76.4	1.0	ug/l	80.0	0.206	95	70-130			
Thallium	76.5	1.0	ug/l	80.0	ND	96	70-130			
Matrix Spike Analyzed: 12/06/2010 (10I	.0590-MS2)				Source: I	TL0002-0	3			
Antimony	84.1	2.0	ug/l	80.0	ND	105	70-130			
Cadmium	82.7	1.0	ug/l	80.0	ND	103	70-130			
Copper	80.0	2.00	ug/l	80.0	4.25	95	70-130			
Lead	77.3	1.0	ug/l	80.0	1.30	95	70-130			
Thallium	75.4	1.0	ug/l	80.0	ND	94	70-130			
Matrix Spike Dup Analyzed: 12/06/2010	(10L0590-M	SD1)			Source: I	TK2645-0	1			
Antimony	86.4	2.0	ug/l	80.0	0.578	107	70-130	1	20	
Cadmium	82.0	1.0	ug/l	80.0	ND	102	70-130	2	20	
Copper	82.7	2.00	ug/l	80.0	7.30	94	70-130	2	20	
Lead	77.1	1.0	ug/l	80.0	0.206	96	70-130	1	20	
Thallium	76.9	1.0	ug/l	80.0	ND	96	70-130	0.6	20	

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Sampled: 11/20/10

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Received: 11/20/10

METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10K3461 Extracted: 11/29/10										
Blank Analyzed: 11/30/2010 (10K3461-B	SLK1)									
Mercury	ND	0.20	ug/l							
LCS Analyzed: 11/30/2010 (10K3461-BS	1)									
Mercury	8.02	0.20	ug/l	8.00		100	85-115			
Matrix Spike Analyzed: 11/30/2010 (10K	(3461-MS1)				Source: I	TK2380-0	1			
Mercury	8.06	0.20	ug/l	8.00	ND	101	70-130			
Matrix Spike Dup Analyzed: 11/30/2010	(10K3461-M	ISD1)			Source: I	TK2380-0	1			
Mercury	8.25	0.20	ug/l	8.00	ND	103	70-130	2	20	
Batch: 10L0593 Extracted: 12/06/10										
Blank Analyzed: 12/06/2010 (10L0593-B	LK1)									
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 12/06/2010 (10L0593-BS	1)									
Antimony	83.3	2.0	ug/l	80.0		104	85-115			
Cadmium	83.4	1.0	ug/l	80.0		104	85-115			
Copper	79.0	2.00	ug/l	80.0		99	85-115			
Lead	81.5	1.0	ug/l	80.0		102	85-115			
Thallium	81.6	1.0	ug/l	80.0		102	85-115			

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITK2126

Sampled: 11/20/10 Received: 11/20/10

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METHOD BLANK/QC DATA

DISSOLVED METALS

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 10L0593 Extracted: 12/06/10										
Matrix Spike Analyzed: 12/06/2010 (101	.0593-MS1)				Source: I	TK2126-0	1			
Antimony	85.2	2.0	ug/l	80.0	0.481	106	70-130			
Cadmium	83.1	1.0	ug/l	80.0	ND	104	70-130			
Copper	83.4	2.00	ug/l	80.0	2.94	101	70-130			
Lead	83.0	1.0	ug/l	80.0	0.250	103	70-130			
Thallium	82.1	1.0	ug/l	80.0	ND	103	70-130			
Matrix Spike Dup Analyzed: 12/06/2010	(10L0593-M	(SD1)			Source: I	TK2126-0	1			
Antimony	85.1	2.0	ug/l	80.0	0.481	106	70-130	0.04	20	
Cadmium	83.8	1.0	ug/l	80.0	ND	105	70-130	0.8	20	
Copper	81.0	2.00	ug/l	80.0	2.94	98	70-130	3	20	
Lead	81.4	1.0	ug/l	80.0	0.250	101	70-130	2	20	
Thallium	80.8	1.0	ug/l	80.0	ND	101	70-130	2	20	



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INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10K2637 Extracted: 11/20/10										
Blank Analyzed: 11/20/2010 (10K2637-E	SLK1)									
Chloride	ND	0.50	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
Sulfate	ND	0.50	mg/l							
LCS Analyzed: 11/20/2010 (10K2637-BS	51)									
Chloride	4.68	0.50	mg/l	5.00		94	90-110			
Sulfate	9.37	0.50	mg/l	10.0		94	90-110			
Matrix Spike Analyzed: 11/20/2010 (10k	(2637-MS1)				Source: I	TK2063-0	6			
Chloride	19.6	1.0	mg/l	5.00	15.1	89	80-120			
Sulfate	57.1	1.0	mg/l	10.0	47.1	100	80-120			MHA
Matrix Spike Analyzed: 11/21/2010 (10k	(2637-MS2)				Source: I	TK2126-0	1			
Chloride	5.92	0.50	mg/l	5.00	1.53	88	80-120			
Sulfate	13.0	0.50	mg/l	10.0	3.51	95	80-120			
Matrix Spike Dup Analyzed: 11/20/2010	(10K2637-N	ASD1)			Source: I	TK2063-0	6			
Chloride	19.7	1.0	mg/l	5.00	15.1	91	80-120	0.6	20	
Sulfate	57.3	1.0	mg/l	10.0	47.1	103	80-120	0.5	20	MHA
Batch: 10K3228 Extracted: 11/24/10										
Blank Analyzed: 11/24/2010 (10K3228-E Total Suspended Solids	BLK1) ND	10	mg/l							
LCS Analyzed: 11/24/2010 (10K3228-BS Total Suspended Solids	5 1) 999	10	mg/l	1000		100	85-115			



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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10K3228 Extracted: 11/24/10										
Duplicate Analyzed: 11/24/2010 (10K32) Total Suspended Solids Batch: 10K3246 Extracted: 11/26/10	28-DUP1) 8.00	10	mg/l		Source: I 8.00	TK2232-0	1	0	10	Ja
Blank Analyzed: 11/26/2010 (10K3246-F	,									
Total Dissolved Solids	ND	10	mg/l							
LCS Analyzed: 11/26/2010 (10K3246-BS	,									
Total Dissolved Solids	1010	10	mg/l	1000		101	90-110			
Duplicate Analyzed: 11/26/2010 (10K324	,					TK2028-0	1			
Total Dissolved Solids	675	10	mg/l		657			3	10	
Batch: 10L0113 Extracted: 12/01/10										
Blank Analyzed: 12/01/2010 (10L0113-B	BLK1)									
Total Cyanide	ND	0.0050	mg/l							
LCS Analyzed: 12/01/2010 (10L0113-BS	51)									
Total Cyanide	0.202	0.0050	mg/l	0.200		101	90-110			
Matrix Spike Analyzed: 12/01/2010 (10I	.0113-MS1)				Source: I	ТК2733-0	2			
Total Cyanide	0.183	0.0050	mg/l	0.200	ND	91	70-115			
Matrix Spike Dup Analyzed: 12/01/2010	(10L0113-M	SD1)			Source: I	ТК2733-0	2			
Total Cyanide	0.199	0.0050	mg/l	0.200	ND	99	70-115	8	15	

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METHOD BLANK/QC DATA

8641

Analyte Batch: 8641 Extracted: 12/15/10	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Analyzed: 12/15/2010 (S011232-02) Uranium, Total	63.5	1	pCi/L	62.5	Source:	102	80-120			
Blank Analyzed: 12/15/2010 (S011232-03 Uranium, Total	3) 0	1	pCi/L		Source:		-			U
Duplicate Analyzed: 12/15/2010 (S01123 Uranium, Total	2-04) 0.042	1	pCi/L		Source: I 0.046	TK2126-0	-	9		Jb

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METHOD BLANK/QC DATA

900										
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8641 Extracted: 12/07/10										
LCS Analyzed: 12/07/2010 (S011232-02)					Source:					
Gross Alpha	53.1	3	pCi/L	44.4		120	70-130			
Gross Beta	42.7	4	pCi/L	42		102	70-130			
Blank Analyzed: 12/09/2010 (S011232-03)				Source:					
Gross Alpha	0.145	3	pCi/L				-			U
Gross Beta	-0.22	4	pCi/L				-			U
Duplicate Analyzed: 12/09/2010 (S011232	2-04)				Source: I	TK2126-0	1			
Gross Alpha	0.437	3	pCi/L		0.709		-	47		Jb
Gross Beta	0.776	4	pCi/L		1.48		-	62		U

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METHOD BLANK/QC DATA

901.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8641 Extracted: 11/30/10										
LCS Analyzed: 12/06/2010 (S011232-02)					Source:					
Cobalt-60	103	10	pCi/L	104		99	80-120			
Cesium-137	115	20	pCi/L	110		104	80-120			
Blank Analyzed: 12/06/2010 (S011232-03	3)				Source:					
Cesium-137	ND	20	pCi/L				-			U
Potassium-40	ND	25	pCi/L				-			U
Duplicate Analyzed: 12/07/2010 (S01123	2-04)				Source: I	TK2126-0	1			
Cesium-137	ND	20	pCi/L		0		-	0		U
Potassium-40	ND	25	pCi/L		0		-	0		U

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METHOD BLANK/QC DATA

903.1

Analyte Batch: 8641 Extracted: 12/08/10	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Analyzed: 12/08/2010 (S011232-02) Radium-226	61.5	1	pCi/L	66.9	Source:	92	80-120			
Blank Analyzed: 12/08/2010 (S011232-0 Radium-226	3) 0.042	1	pCi/L		Source:		-			U
Duplicate Analyzed: 12/08/2010 (S01123 Radium-226	2-04) -0.16	1	pCi/L		Source: I 0.047	TK2126-0	-	0		U



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			904							
Analyte Batch: 8641 Extracted: 12/09/10	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Analyzed: 12/09/2010 (S011232-02) Radium-228	4.43	1	pCi/L	4.69	Source:	94	60-140			
Blank Analyzed: 12/09/2010 (S011232-03 Radium-228) 0.069	1	pCi/L		Source:		-			U
Duplicate Analyzed: 12/09/2010 (S011232 Radium-228	2-04) 0.203	1	pCi/L		Source: I -0.066	TK2126-0	1 -	0		U

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METHOD BLANK/QC DATA

905 Reporting Spike %REC RPD Data Source Analyte Result Limit Units Level Result %REC Limits RPD Limit Qualifiers Batch: 8641 Extracted: 12/04/10 LCS Analyzed: 12/06/2010 (S011232-02) Source: Strontium-90 17 2 pCi/L 19.3 88 80-120 Blank Analyzed: 12/06/2010 (S011232-03) Source: 0.054 2 UStrontium-90 pCi/L Duplicate Analyzed: 12/06/2010 (S011232-04) Source: ITK2126-01 Strontium-90 -0.042 2 pCi/L 0.089 0 U



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METHOD BLANK/QC DATA

906										
Analyte Batch: 8641 Extracted: 12/08/10	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Analyzed: 12/09/2010 (S011232-02) Tritium	2390	200	pCi/L	2560	Source:	93	80-120			
Blank Analyzed: 12/09/2010 (S011232-03 Tritium	3) -47.8	200	pCi/L		Source:		-			U
Duplicate Analyzed: 12/09/2010 (S01123 Tritium	2-04) -47.5	200	pCi/L		Source: I 46.8	TK2126-0	1	0		U



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METHOD BLANK/QC DATA

EPA-5 1613Bx

A malvia	Decult	Reporting Limit	Unite	Spike Level	Source	0/DEC	%REC Limits	DDD	RPD Limit	Data Qualifiers
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Quaimers
Batch: 328385 Extracted: 11/24/10										
Blank Analyzed: 11/30/2010 (G0K24	0000385B)				Source:					
1,2,3,4,6,7,8-HpCDD	0.0000014	0.00005	ug/L				-			J
1,2,3,4,6,7,8-HpCDF	0.000001	0.00005	ug/L				-			J, Q
1,2,3,4,7,8,9-HpCDF	0.00000083	0.00005	ug/L				-			J, Q
1,2,3,4,7,8-HxCDD	0.00000085	0.00005	ug/L				-			J, Q
1,2,3,4,7,8-HxCDF	0.00000063	0.00005	ug/L				-			J, Q
1,2,3,6,7,8-HxCDD	0.00000076	0.00005	ug/L				-			J
1,2,3,6,7,8-HxCDF	0.00000085	0.00005	ug/L				-			J, Q
1,2,3,7,8,9-HxCDD	0.0000012	0.00005	ug/L				-			J
1,2,3,7,8,9-HxCDF	0.00000063	0.00005	ug/L				-			J
1,2,3,7,8-PeCDD	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDF	0.0000009	0.00005	ug/L				-			J
2,3,4,6,7,8-HxCDF	0.00000072	0.00005	ug/L				-			J
2,3,4,7,8-PeCDF	0.00000082	0.00005	ug/L				-			J
2,3,7,8-TCDD	ND	0.00001	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	ug/L				-			
OCDD	0.0000052	0.0001	ug/L				-			J
OCDF	0.0000024	0.0001	ug/L				-			J
Total HpCDD	0.000002	0.00005	ug/L				-			J, Q
Total HpCDF	0.0000019	0.00005	ug/L				-			J, Q
Total HxCDD	0.0000028	0.00005	ug/L				-			J, Q
Total HxCDF	0.0000028	0.00005	ug/L				-			J, Q
Total PeCDD	0.0000024	0.00005	ug/L				-			J
Total PeCDF	0.0000017	0.00005	ug/L				-			J
Total TCDD	0.0000015	0.00001	ug/L				-			J, Q
Total TCDF	ND	0.00001	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.002		ug/L	0.002		100	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.002		ug/L	0.002		102	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.002		ug/L	0.002		101	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.0017		ug/L	0.002		85	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0019		ug/L	0.002		96	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.0018		ug/L	0.002		90	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.002		ug/L	0.002		98	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0021		ug/L	0.002		104	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0018		ug/L	0.002		89	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0017		ug/L	0.002		87	24-185			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.0019		ug/L	0.002		94	28-136			

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Sampled: 11/20/10 Received: 11/20/10

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
·	Result	Linit	Omto	Lever	ittsuit	JUREC	Linnts	МD	Linnt	Quanners
Batch: 328385 Extracted: 11/24/10										
Blank Analyzed: 11/30/2010 (G0K240	000385B)				Source:					
Surrogate: 13C-2,3,4,7,8-PeCDF	0.0017		ug/L	0.002		87	21-178			
Surrogate: 13C-2,3,7,8-TCDD	0.0016		ug/L	0.002		82	25-164			
Surrogate: 13C-2,3,7,8-TCDF	0.0017		ug/L	0.002		83	24-169			
Surrogate: 13C-OCDD	0.0037		ug/L	0.004		93	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.00076		ug/L	0.0008		95	35-197			
LCS Analyzed: 11/30/2010 (G0K2400	00385C)				Source:					
1,2,3,4,6,7,8-HpCDD	0.00109	0.00005	ug/L	0.001		109	70-140			
1,2,3,4,6,7,8-HpCDF	0.00117	0.00005	ug/L	0.001		117	82-122			
1,2,3,4,7,8,9-HpCDF	0.0012	0.00005	ug/L	0.001		120	78-138			
1,2,3,4,7,8-HxCDD	0.00127	0.00005	ug/L	0.001		127	70-164			
1,2,3,4,7,8-HxCDF	0.00116	0.00005	ug/L	0.001		116	72-134			
1,2,3,6,7,8-HxCDD	0.00118	0.00005	ug/L	0.001		118	76-134			
1,2,3,6,7,8-HxCDF	0.00114	0.00005	ug/L	0.001		114	84-130			
1,2,3,7,8,9-HxCDD	0.00126	0.00005	ug/L	0.001		126	64-162			
1,2,3,7,8,9-HxCDF	0.00116	0.00005	ug/L	0.001		116	78-130			
1,2,3,7,8-PeCDD	0.00116	0.00005	ug/L	0.001		116	70-142			
1,2,3,7,8-PeCDF	0.00116	0.00005	ug/L	0.001		116	80-134			
2,3,4,6,7,8-HxCDF	0.00112	0.00005	ug/L	0.001		112	70-156			
2,3,4,7,8-PeCDF	0.00121	0.00005	ug/L	0.001		121	68-160			
2,3,7,8-TCDD	0.000226	0.00001	ug/L	0.0002		113	67-158			
2,3,7,8-TCDF	0.000225	0.00001	ug/L	0.0002		113	75-158			
OCDD	0.00229	0.0001	ug/L	0.002		114	78-144			
OCDF	0.00227	0.0001	ug/L	0.002		114	63-170			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.00193		ug/L	0.002		97	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.00185		ug/L	0.002		93	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.0019		ug/L	0.002		95	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.00158		ug/L	0.002		79	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0017		ug/L	0.002		85	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00175		ug/L	0.002		87	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00173		ug/L	0.002		87	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.00187		ug/L	0.002		94	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.00186		ug/L	0.002		93	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0018		ug/L	0.002		90	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00179		ug/L	0.002		89	22-176			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.00176		ug/L	0.002		88	13-328			

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITK2126

Sampled: 11/20/10 Received: 11/20/10

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

METHOD BLANK/QC DATA

EPA-5 1613Bx

A	D14	Reporting	T	Spike	Source	0/ DEC	%REC	DDD	RPD Limit	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 328385 Extracted: 11/24/10										
LCS Analyzed: 11/30/2010 (G0K24000	0385C)				Source:					
Surrogate: 13C-2,3,7,8-TCDD	0.00163		ug/L	0.002		82	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.00162		ug/L	0.002		81	22-152			
Surrogate: 13C-OCDD	0.00345		ug/L	0.004		86	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000742		ug/L	0.0008		<i>93</i>	31-191			

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITK2126

Sampled: 11/20/10 Received: 11/20/10

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
ITK2126-01	Cadmium-200.8	Cadmium	ug/l	0.12	1.0	3.1
ITK2126-01	Chloride - 300.0	Chloride	mg/l	1.53	0.50	150
ITK2126-01	Copper-200.8	Copper	ug/l	3.22	2.00	14
ITK2126-01	Lead-200.8	Lead	ug/l	1.16	1.0	5.2
ITK2126-01	Nitrogen, NO3+NO2 -N EF	PA 300.0 Nitrate/Nitrite-N	mg/l	0.46	0.26	8
ITK2126-01	Sulfate-300.0	Sulfate	mg/l	3.51	0.50	300
ITK2126-01	TDS - SM2540C	Total Dissolved Solids	mg/l	118	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.

LahNaanhaa	A	A	TT *4	D	MDI	Compliance
<u>LabNumber</u>	Analysis	Analyte	Units	Result	MRL	Limit
ITK2126-02	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0.095	4.7	15



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

Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITK2126

Sampled: 11/20/10 Received: 11/20/10

DATA QUALIFIERS AND DEFINITIONS

- Method blank contamination. The associated method blank contains the target analyte at a reportable level. В Estimated result. Result is less than the reporting limit. J Ja Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability. Jb The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned. **M2** The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS). MHA Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See 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**



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly 17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITK2126

Sampled: 11/20/10 Received: 11/20/10

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 1664A	Water	Х	Х
EPA 200.8-Diss	Water	Х	Х
EPA 200.8	Water	Х	Х
EPA 245.1-Diss	Water	Х	Х
EPA 245.1	Water	Х	Х
EPA 300.0	Water	Х	Х
Filtration	Water	N/A	N/A
SM 2540D	Water	Х	Х
SM2540C	Water	Х	
SM4500CN-E	Water	Х	Х

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

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITK2126

Sampled: 11/20/10 Received: 11/20/10

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

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec Samples: ITK2126-01

- Analysis Performed: Gross Alpha Samples: ITK2126-01
- Analysis Performed: Gross Beta Samples: ITK2126-01
- Analysis Performed: Level 4 Data Package Samples: ITK2126-01
- Analysis Performed: Radium, Combined Samples: ITK2126-01
- Analysis Performed: Strontium 90 Samples: ITK2126-01
- Analysis Performed: Tritium Samples: ITK2126-01
- Analysis Performed: Uranium, Combined Samples: ITK2126-01

TestAmerica Irvine

Debby Wilson Project Manager

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITK2126

Sampled: 11/20/10 Received: 11/20/10

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

TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8641 Samples: ITK2126-01

Method Performed: 900 Samples: ITK2126-01

Method Performed: 901.1 Samples: ITK2126-01

Method Performed: 903.1 Samples: ITK2126-01

Method Performed: 904 Samples: ITK2126-01

Method Performed: 905 Samples: ITK2126-01

Method Performed: 906 Samples: ITK2126-01

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

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B Samples: ITK2126-01

TestAmerica Irvine

Debby Wilson Project Manager

Test America Version 642010

CHAIN OF CUSTODY FORM

Page 1 of 2

Client Name/A	ddress:	<u> </u>		Project:											AN	ALYSIS	REQUIR	ED		······	
VIWH-Arcad 318 Michillinda Arcadia, CA 9 Test America	lia 1 Ave, St 1007			Boeing-SSFL N Routine Outfall GRAB Stormwater at &	1 009 ;₩-1 3< -																Field readings. (Log in and inclue report Temp and Temp °F = / /
		Anne de Autoritation Anne de Anne de				2	HEM)													1	рн= 🗧 🔿
Project Manag Sampler: Pri				Phone Number (626) 568-6691 Fax Number (626) 568-6515			Grease (1664-HEM)									. *					Time of readings すの しい
Sample Description	Sample Matrix	Container Type	#.of Conl,	Sampling Date/Time	Proservative	Bottle #	OII &														Comment
Outfall 009	Ŵ	1L Amber	2	11-20-20,0	HCI	1A, 1B	X .														
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		These Sam	ples	are the Grab P	ortion of C	outfall 009 f	or th	is sto	rm ev	l ent.	Com	l posite	e san	ples	will fe	ollow an	d are to	be adde	d to thi	s work c	order.
Relinquished B	Y ,	11-20-20	Date/	Time:	<i>ps</i>	Received By	1.8			1.2c.	- <i>I</i> U	e: 14			24 Ho	tir: ur:	(Gueck)			ta ta s	10 Day: Normal:
Relinquished B	y		Date	/Time:		Received By					ate/Tim					te Integrity: (On ice: _			
Relinquished B	y		Date	/Time:		Received By		-		Da	ate/Tin	ie;				Réquiremen		Alf Launs	IV:	e Hijêr v	NPDES Leval IV:

22

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x Type C	Boe Roi CO Sto Ph (62 Fa (62 Fa	ione Number 26) 568-6691 ix Number: 26) 568-6515 Sampling	1009 - GRA≦ 		Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, TI	TCDD (and all congeners)			als: Sb, Cd, Cu, Pb,	pha(500 0), Gross Beta(900 0), H-3) (906.0), Sr-90 (905.0). Total to Radium 226 (903.0 or 903.1) & 228 (904.0), Uranium (908.0), K- 37 (901.0 or 901.1)	500		IALYS	IS REQ	UIRED				
Suite 200 t: Debby Wilsor ronwyn Kelly e Container x Typo c 11, Poly	Boe Roi CO Sto Ph (62 Fa (62 Fa	eing-SSFL N utine Outfal mpOSITE- prmwater at 1 26) 568-6691 x Number: 26) 568-6516 Samping	1009 - GRA≦ 	8	Sb, Cd, Cu,	ongeners)			als: Sb, Cd, Cu, Pb,	Sross Beta(900.0), Sr-90 (905.0). Total 6 (903.0 or 903.1) & Uranium (908.0), K- 901.1)			JALYS	IS REG	UIRED				
Suite 200 t: Debby Wilsor ronwyn Kelly e Container x Typo c 11, Poly	Boe Roi CO Sto Ph (62 Fa (62 Fa	eing-SSFL N utine Outfal mpOSITE- prmwater at 1 26) 568-6691 x Number: 26) 568-6516 Samping	1009 - GRA≦ 		Sb, Cd, Cu,	ongeners)	N-4		als: Sb, Cd, Cu, Pb,	Sross Beta(900.0), Sr-90 (905.0). Total 6 (903.0 or 903.1) & Uranium (908.0), K- 901.1)									
onwyn Kelly 3 a ie Container r x Type c 11. Poly	Ph (62 Fa (63	ornwater at lone Number 26) 568-6691 Ix Number: 26) 568-6515 Sampling			Sb, Cd.	ongeners)	7-N		als: Sb, Cd, Cu	Sross Beta(90 Sr-90 (905.0) (6 (903.0 or 9 Uranium (908 901.1)									
onwyn Kelly 3 a ie Container r x Type c 11. Poly	Ph (62 Fa (62 of	ione Number 26) 568-6691 ix Number: 26) 568-6515 Sampling			å,	ongeners)	N-V		als: Sb, Cd	Sross Bet Sr-90 (90 (6 (903.0 Uranium 901.1)			l l	1				i . 1	
e Container r x Type c 11, Poly	(62 Fa (62	26) 568-6691 x Number: 26) 568-6515 Sampling				ongeners)	N-2		als: Sb	Sr-9(Sr-9(0 (90) 901, 901,				1	. 1				15
e Container r x Type c 11, Poly	(62 Fa (62	26) 568-6691 x Number: 26) 568-6515 Sampling			erabie	ğ	L	1	Metals:	168855									Comments
x Type c	of Int.	Sampling	**************************************	1.1	Recove) (and all c	CI', SO4, NO3+NO2-N	TSS	Total Dissolved Metals: Sb, Hg, Tl	Gross Alpha(500 0), G Tritium (H-3) (906 0), C Combined Radium 22, Radium 228 (904 0), 40, CS-137 (901 0 or	nic Tryirity	lide							Row Source
	1 78	Date/Time	Proservative	Botile #	Total Hg, Ti	1CDC	Cr. s	TDS, TSS	Total Hg, T	Gross Comi Radit Radit	E T T	Cyanide							K3 (17)
11 Poly	فسيسا	12-2216	HNO ₃	2A	×	ļ													
	1		HNO ₃	28	X					·	┞╌┠╴		1997 1997		<u></u>				
1L Amber	2		None	3A, 3B		×					$\left - \right ^{\perp}$							-	
500 mL Poly	2		None	4A, 4B	<u> </u>	 	×				$\left \cdot \right $						+		
500 mL Poly	1 -		None	5				X			++					1	-	-	Filler win 24hrs of receipt
1L Poly	1.	SU.	None	6		ļ		 	×		┼╍┢╸								
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0	ale/Tim	e:		Received	Ву			C	Date/Tim	lê.			1.00		i an the	All Level	IV:	. ·	
	1L Poly 2.5 Gal Cube 500 mL Amber 	IL Poly 1 2.5 Gal Cube 1 500 mL Amber 1 -4-Gal Poly 1 500 mL Poly 1 500 mL Poly 1 7 -1 500 mL Poly 1 -1 -1 500 mL Poly 1 -1 -1 -1	IL Poly 1 2.5 Gal Cube 1 1 1 500 mL Amber 1 1 1 4 Gal Poly 4 Gal Poly 500 mL Poly 1 500 mL Poly 1 1 1 500 mL Poly 1 1 1 1 1 1 1 1 1 500 mL Poly 1 1 1	1L Poly 1 None 2.5 Gal Cube 1 1 1 500 mL Amber 1 1 1 1 500 mL Amber 1 1 1 1 None 1 1 1 1 1 1 None 1 1 1 1 1 1 None 500 mL Poly 1 1 1 1 1 1 500 mL Poly 1	IL Poly 1 None 6 2.5 Gal Cube 1 1 1 7A 500 mL Amber 1 1 1 7B H Gal Poly 1 1 1 7B S00 mL Amber 1 1 1 1 500 mL Poly 1 1 1 1 1 500 mL Poly 1 1 1 1 1 1 500 mL Poly 1 <td< td=""><td>South (1, 1) None 0 1L Poly 1<!--</td--><td>None None 1L Poly 1 2.5 Gal Cube 1 1 1 500 mL Amber 1 1 1 1</td><td>1L Poly 1 None 0 1L Poly 1 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -</td><td>1L Poly 1 None 6 2.5 Gal Cube 1 1/1 Correction None 7A 500 mL Amber 1 1 </td><td>South L Poly 1 None 6 X 1L Poly 1</td><td>South Poly 1 None 6 X 11 Poly 1 None 6 X 2.5 Gal Cule 1 1 - X X 500 mL Anther 1 - - X X </td><td>S00 mL roy 1 None 6 X X 1L Poly 1 1/1 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -</td><td>South Foy 1 None 0 X 1 11 Foy 1 Foy X 1 2.5 Gal Cube 1 Foy X 1 X 1 500 mL Amber 1 Foy X 1 X 1 4 Gat Poly 1 Foy X 1 X 1 4 Gat Poly 1 Foy X 1 X 1 500 mL Amber 1 Foy X 1 X 1 500 mL Amber 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X</td><td>Storm, Poly 1 None 0 X X 1L, Poly 1</td><td>Storm, Poly 1 None 0 X X Image: Control of the storm of the st</td><td>500 ml. Poly 1 None 5 X Image: Control of the state o</td><td>500 mL Poly 1 None 5 X</td><td>500 mL Poly 1 None 5 X X 1L Poly 1 None 0 X Image: Contract of the second of the</td><td>500 mL Poly 1 None 5 X 1L Poly 1 None 6 X Image: Contract of the state of the s</td></td></td<>	South (1, 1) None 0 1L Poly 1 </td <td>None None 1L Poly 1 2.5 Gal Cube 1 1 1 500 mL Amber 1 1 1 1</td> <td>1L Poly 1 None 0 1L Poly 1 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -</td> <td>1L Poly 1 None 6 2.5 Gal Cube 1 1/1 Correction None 7A 500 mL Amber 1 1 </td> <td>South L Poly 1 None 6 X 1L Poly 1</td> <td>South Poly 1 None 6 X 11 Poly 1 None 6 X 2.5 Gal Cule 1 1 - X X 500 mL Anther 1 - - X X </td> <td>S00 mL roy 1 None 6 X X 1L Poly 1 1/1 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -</td> <td>South Foy 1 None 0 X 1 11 Foy 1 Foy X 1 2.5 Gal Cube 1 Foy X 1 X 1 500 mL Amber 1 Foy X 1 X 1 4 Gat Poly 1 Foy X 1 X 1 4 Gat Poly 1 Foy X 1 X 1 500 mL Amber 1 Foy X 1 X 1 500 mL Amber 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X</td> <td>Storm, Poly 1 None 0 X X 1L, Poly 1</td> <td>Storm, Poly 1 None 0 X X Image: Control of the storm of the st</td> <td>500 ml. Poly 1 None 5 X Image: Control of the state o</td> <td>500 mL Poly 1 None 5 X</td> <td>500 mL Poly 1 None 5 X X 1L Poly 1 None 0 X Image: Contract of the second of the</td> <td>500 mL Poly 1 None 5 X 1L Poly 1 None 6 X Image: Contract of the state of the s</td>	None None 1L Poly 1 2.5 Gal Cube 1 1 1 500 mL Amber 1 1 1 1	1L Poly 1 None 0 1L Poly 1 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	1L Poly 1 None 6 2.5 Gal Cube 1 1/1 Correction None 7A 500 mL Amber 1 1	South L Poly 1 None 6 X 1L Poly 1	South Poly 1 None 6 X 11 Poly 1 None 6 X 2.5 Gal Cule 1 1 - X X 500 mL Anther 1 - - X X	S00 mL roy 1 None 6 X X 1L Poly 1 1/1 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	South Foy 1 None 0 X 1 11 Foy 1 Foy X 1 2.5 Gal Cube 1 Foy X 1 X 1 500 mL Amber 1 Foy X 1 X 1 4 Gat Poly 1 Foy X 1 X 1 4 Gat Poly 1 Foy X 1 X 1 500 mL Amber 1 Foy X 1 X 1 500 mL Amber 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X X 500 mL Poly 1 Foy X X X	Storm, Poly 1 None 0 X X 1L, Poly 1	Storm, Poly 1 None 0 X X Image: Control of the storm of the st	500 ml. Poly 1 None 5 X Image: Control of the state o	500 mL Poly 1 None 5 X	500 mL Poly 1 None 5 X X 1L Poly 1 None 0 X Image: Contract of the second of the	500 mL Poly 1 None 5 X 1L Poly 1 None 6 X Image: Contract of the state of the s

Test America Version 6/2010

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CHAIN OF CUSTODY FORM

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Client Name//				Project:						r —					A	NALYSI	S REQU	IRED			/							
MWH-Arca 618 Michillind Arcadia, CA Test America	la Ave, S 91007		son	Boeing-SSFL I Routine Outfa GRAB Stormwater at	all 009																Field readings: (Log in and include in report Temp and pH)							
							HEM)														Temp °F = / / = 5 (F pH = 8, 0							
Project Mana	-	•						Phone Number: (626) 568-6691			Phone Number: (626) 568-6691			(1664-														Time of readings =
Sampler: R,	2K 13.	ANACA		Fax Number: (626) 568-651	(626) 568-6515		Grease (1664-HEM)														10:210							
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Oil &														Comments							
Outfall 009	w	1L Amber	2	11-20-2010 10:40	HCI	1A, 1B	x						<u> </u>															
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<u></u>															<u> </u>		<u></u>											
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Relinquished By	ly		Date/Time: Received By		Received By				Dat	e/Time	:			Sample	e Integrity: (Check)												
Relinquished By	1			ate/Time: Received By				\rightarrow		Dat	e/Time	:			Intact:			On Ice:										
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						V	\mathcal{P}	5		-																		

CHAIN OF CUSTODY FORM

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Arcadia, CA 91007 COMPOSITE G R A(S) no d 0001 L (s) (0 (s)	Comments
MWWH-Arcadia boenig-SSFL MPDES 618 Michillinda Ave, Suite 200 Routine Outfall 009 Arcadia, CA 91007 Compositie Test America Contact: Debby Wilson Stormwater at the second of 00, 10, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	Comments
618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Arcadia, CA 91007 Composite	Comments
Arcadia, CA 91007 Connectionance (Strict) Test America Contact: Debby Wilson Stormwater at Strict Volume Volume Stormwater at Storm Stormwater at Strict Volume Volume	Comments
Test America Contact: Debby Wilson	Comments
Metals: Point Schers) O 0, Uran or 901-1.226 (90 or 901-1.226 (90) or 901-1.226 (90)	Comments
Project Manager: Bronwyn Kelly Phone Number:	
Sampler: R. Banaga Fax Number:	
Project Manager: Bronwyn Kelly Sampler: R. Jawaga Sample Sample Container Description Matrix Type Container Description Container Description Matrix Type Container Description	(ila)
Description Matrix Type Cont. Date/Time Preservative Bottle # P P D D P D Outfall 009 W 1 L Poly 1 1 20:33/2 HNO3 2A X Image: Control of the second seco	(17010
Outfall 009 W 1L Poly 1 HNO3 2A X Outfall 009 Dup W 1L Poly 1 HNO3 2B X Image: Control of the second	
Outfall 009 W 1L Amber 2 None 3A, 3B X Image: Contract of the second s	
Outfall 009 W 500 mL Poly 2 None 4A, 4B X Image: Contract of the second secon	
Outfall 009 W 500 mL Poly 1 None 5 X . <td></td>	
Outfall 009 W 1L Poly 1 None 6 X I	Filter w/in 24hrs of receipt at lab
Outfall 009 W 2.5 Gal Cube 1 //- I C -30/3 None 7A X X X	Unfiltered and unpreservel analysis
500 mL Amber 1 1 - 3 0 - 2 6 1 None 7B	Only test if first or second fain-
	events of the year
Outfall 009 W 500 mL Poly 1 //	¥
GRAD GRAD	
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 //- 20-10/0 Date/Time: Received/By Date/Time: Turn-around time: (Check)	
	10 Day:
1425 M 120-10 1425 Hour: 72 Hour:	10 Day: Normal:
Relinquished By Date/Time: Received By Date/Time:	-
Sample Integrity: (Check) Intact: <u>K</u> On Ice: 2-8°C	
Relinquished By Date/Time: Received By Date/Time:	
II ZO IO IG2-O Data Requirements: (Check) No Level IV:	



EBERLINE ANALYTICAL CORPORATION 2030 Wright Avenue Richmond, California 94804-3849 Phone (51D) 235-2633 Fax (51D) 235-0438 Toll Free (80D) 841-5487 www.eberlineservices.com

December 28, 2010

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

Reference: Test America-Irvine ITK2126 Eberline Analytical Report S011232-8641 Sample Delivery Group 8641

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Job No. ITK2126. The sample was received on November 23, 2010.

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

Sincerely,

M

N. Joseph Verville Client Services Manager

NJV/ljb

Enclosure: Level IV CLP-like Data Package CD

Case Narrative, page 1

1.0 General Comments

Sample delivery group 8641 consists of the analytical results and supporting documentation for one water sample. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The sample was 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 sample as received i.e. the sample was 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 volume.

2.0 Quality Control

Quality Control Samples consisted of laboratory control samples (LCS), method blanks, duplicate analyses and matrix spike 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%

Case Narrative, page 2

December 28, 2010

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."

N. Joseph Ver∕ville Client Services Manager

12/29/10

Date

SDG <u>8641</u> Contact <u>N. Joseph Verville</u> Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

SUMMARY DATA SECTION

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Prepared by

nghill

Reviewed by

Lab id	EAS
Protocol	ТА
Version	<u>Ver 1.0</u>
Form	DVD-TOC
Version	3.06
Report date	12/28/10

SDG 8641

SDG	864	41	
Contact	N.	Joseph	Verville

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

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

REPORT GUIDES Page 1 SUMMARY DATA SECTION Page 1

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	12/28/10

ΕE	31	E	R	L	I	N	E	Α	Ν	Α	L	Y	т	Ι	С	Α	L
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SDG 8641

SDG	8641
Contact	N. Joseph Verville

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

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	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	12/28/10

REPORT GUIDES Page 2 SUMMARY DATA SECTION Page 2

SDG 8641

SDG <u>8641</u>

Contact N. Joseph Verville

LAB SAMPLE SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S011232-01	ITK2126-01	Boeing-SSFL	WATER			ITK2126	11/20/10 12:45
S011232-02	Lab Control Sample		WATER				
S011232-03	Method Blank		WATER				
S011232-04	Duplicate (S011232-01)	Boeing-SSFL	WATER				11/20/10 12:45

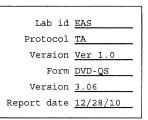
Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-LS</u> Version <u>3.06</u> Report date <u>12/28/10</u>

LAB SUMMARY Page 1 SUMMARY DATA SECTION Page 3

[]	SDG 8641	
SDG <u>8641</u>		Client Test America, Inc.
Contact N. Joseph Verville	QC SUMMARY	Contract ITK2126

	CHAIN OF			¥	SAMPLE	BASIS	DAYS S	INCE	LAB	DEPARTMENT
QC BATCH	CUSTODY	CLIENT SAMPLE ID	MATRIX	MOIST	AMOUNT	AMOUNT	RECEIVED	COLI	SAMPLE ID	SAMPLE ID
8641	ITK2126	ITK2126-01	WATER		10.0 L		11/23/10	3	S011232-01	8641-001
		Method Blank Lab Control Sample Duplicate (S011232-01)	WATER WATER WATER		10.0 L		11/23/10	3	S011232-03 S011232-02 S011232-04	8641-003 8641-002 8641-004
		Duplicate (SUI1232-01)	WATER		10.0 L		11/23/10	3	5011232-04	8041-004

QC SUMMARY Page 1 SUMMARY DATA SECTION Page 4



SDG 8641

SDG <u>8641</u>

Contact N. Joseph Verville

PREP BATCH SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

			PREPARATION ERROR				- PLA	QUALI-			
TEST	MATRIX	METHOD	BATCH	20 %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG MS/ORIG	FIERS
Beta	Counting										
AC	WATER	Radium-228 in Water	7271-024	10.4	1			1	1	1/1	
SR	WATER	Strontium-90 in Water	7271-024	10.4	1			1	1	1/1	
Gas I	roportiona	al Counting									
A08	WATER	Gross Alpha in Water	7271-024	20.6	l			1	1	1/1	
80B	WATER	Gross Beta in Water	7271-024	11.0	1			1	1	1/1	
Gamma	Spectroso	сору									
GAM	WATER	Gamma Emítters in Water	7271-024	7.0	1			1	l	1/1	
Kinet	ic Phospho	primetry, ug									
U_T	WATER	Uranium, Total	7271-024		1			1	1	1/1	
Liqui	d Scintill	lation Counting									
Н	WATER	Tritium in Water	7271-024	10.0	1			1	1	1/1	
Rador	Counting										
RA	WATER	Radium-226 in Water	7271-024	16.4	1			1	1	1/1	

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.

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

Lab id <u>EAS</u>	
Protocol <u>TA</u>	
Version Ver 1.0	
Form DVD-PBS	
Version 3.06	
Report date <u>12/28/10</u>	

PREP BATCH SUMMARY Page 1 SUMMARY DATA SECTION Page 5

SDG 8641

SDG	86	41	
Contact	<u>N.</u>	Joseph	Verville

CLIENT SAMPLE ID

LAB SAMPLE

LAB WORK SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

COLLECTED RECEIVED	LOCATION CUSTODY S	AS no	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	ВҮ	METHOD
5011232-01	ITK2126-01			8641-001	80A/80		12/07/10	12/14/10	BW	Gross Alpha in Water
11/20/10	Boeing-SSFL		WATER	8641-001	80B/80		12/07/10	12/14/10	BW	Gross Beta in Water
11/23/10	ITK2126			8641-001	AC		12/09/10	12/14/10	BW	Radium-228 in Water
				8641-001	GAM		12/06/10	12/08/10	MWT	Gamma Emitters in Water
				8641-001	Н		12/09/10	12/16/10	BW	Tritium in Water
				8641-001	RA		12/08/10	12/09/10	BW	Radium-226 in Water
				8641-001	SR		12/06/10	12/14/10	BW	Strontium-90 in Water
				8641-001	U_T		12/15/10	12/17/10	BW	Uranium, Total
011232-02	Lab Control Sampl	e		8641-002	80A/80		12/07/10	12/14/10	BW	Gross Alpha in Water
			WATER	8641-002	80B/80		12/07/10	12/14/10	BW	Gross Beta in Water
				8641-002	AC		12/09/10	12/14/10	BW	Radium-228 in Water
				8641-002	GAM		12/06/10	12/08/10	MWT	Gamma Emitters in Water
				8641-002	н		12/09/10	12/16/10	BW	Tritium in Water
				8641-002	RA		12/08/10	12/09/10	BW	Radium-226 in Water
				8641-002	SR		12/06/10	12/14/10	BW	Strontium-90 in Water
				8641-002	U_T		12/15/10	12/17/10	BW	Uranium, Total
3011232-03	Method Blank			8641-003	80A/80		12/09/10	12/14/10	BW	Gross Alpha in Water
			WATER	8641-003	80B/80		12/09/10	12/14/10	BW	Gross Beta in Water
				8641-003	AC		12/09/10	12/14/10	BW	Radium-228 in Water
				8641-003	GAM		12/06/10	12/08/10	MWT	Gamma Emitters in Water
				8641-003	н		12/09/10	12/16/10	BW	Tritium in Water
				8641-003	RA		12/08/10	12/09/10	BW	Radium-226 in Water
				8641-003	SR		12/06/10	12/14/10	BW	Strontium-90 in Water
			•	8641-003	U_T		12/15/10	12/17/10	BW	Uranium, Total
3011232-04	Duplicate (S01123	2-01)		8641-004	80A/80		12/09/10	12/14/10	BW	Gross Alpha in Water
11/20/10	Boeing-SSFL		WATER	8641-004	80B/80		12/09/10	12/14/10	BW	Gross Beta in Water
11/23/10				8641-004	AC		12/09/10	12/14/10	BW	Radium-228 in Water
				8641-004	GAM		12/07/10	12/08/10	MWT	Gamma Emitters in Water
				8641-004	н		12/09/10	12/16/10	BW	Tritium in Water
				8641-004	RA		12/08/10	12/09/10	BW	Radium-226 in Water
				8641-004	SR		12/06/10	12/14/10	BW	Strontium-90 in Water

Lab id EAS Protocol TA Version Ver 1.0 Form DVD-LWS Version 3.06 Report date 12/28/10

WORK SUMMARY Page 1 SUMMARY DATA SECTION Page 6

SDG 8641

SDG <u>8641</u> Contact <u>N. Joseph Verville</u>

WORK SUMMARY, cont.

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

TEST	SAS no	COUNTS METHOD	OF	TESTS REFERENCE	BY		RE	BLANK	LCS	DUP SPIKE	TOTAL
80A/80		Gross Alpha in Water		900.0						1	4
		Gross Beta in Water		900.0		1		-	1	1	
80B/80						Ĩ		T	T	1	4
AC		Radium-228 in Water		904.0		1		1	1	1	4
GAM		Gamma Emitters in Water		901.1		1		1	1	1	4
н		Tritium in Water		906.0		1		1	1	1	4
RA		Radium-226 in Water		903.1		1		1	1	l	4
SR		Strontium-90 in Water		905.0		1		1	1	1	4
U_T		Uranium, Total		D5174		1		1	1	1	4
TOTALS						8		8	8	8	32

WORK SUMMARY Page 2 SUMMARY DATA SECTION Page 7 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-LWS</u> Version <u>3.06</u> Report date <u>12/28/10</u>

SDG 8641

8641-003

Method Blank

METHOD BLANK

SDG <u>8641</u>	Client	<u>Test America, Inc.</u>	
Contact <u>N. Joseph Verville</u>	Contract	ITK2126	
Lab sample id <u>S011232-03</u> Dept sample id <u>8641-003</u>	Client sample id Material/Matrix		WATER

ANALYTE	CAS NO	RESULT pCi/L	20 ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.145	0.31	0.639	3.00	U	80A
Gross Beta	12587472	-0.220	0.56	0.958	4.00	U	80B
Tritium	10028178	-47.8	88	152	200	U	н
Radium-226	13982633	0.042	0.32	0.602	1.00	υ	RA
Radium-228	15262201	0.069	0.20	0.454	1.00	U	AC
Strontium-90	10098972	0.054	0.46	1.05	2.00	U	SR
Uranium, Total		0	0.008	0.019	1.00	U	υт
Potassium-40	13966002	U		11.7	25.0	U	GAM
Cesium-137	10045973	U		0.968	20.0	U	GAM

QC-BLANK #76239

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-DS
Version	3.06
Report date	12/28/10

METHOD BLANKS Page 1 SUMMARY DATA SECTION Page 8

SDG 8641

8641-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>8641</u> Contact <u>N. Joseph Verville</u> Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

Lab sample id <u>S011232-02</u> Dept sample id <u>8641-002</u> Client sample id Lab Control Sample

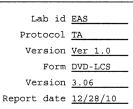
Material/Matrix _____

WATER

ANALYTE	RESULT pCi/L	20 ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED	20 ERR pCi/L	REC %	20 LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	53.1	2.9	0.723	3.00		80A	44.4	1.8	120	74-126	70-130
Gross Beta	42.7	1.7	1.58	4.00		80B	42.0	1.7	102	87-113	70-130
Tritium	2390	140	148	200		н	2560	100	93	88-112	80-120
Radium-226	61.5	2.7	0.765	1.00		RA	66.9	2.7	92	84-116	80-120
Radium-228	4.43	0.35	0.446	1.00		AC	4.69	0.19	94	87-113	60-140
Strontium-90	17.0	1.1	0.571	2.00		SR	19.3	0.77	88	88-112	80-120
Uranium, Total	63.5	7.2	0.194	1.00		U_T	62.5	2.5	102	88-112	80-120
Cobalt-60	103	5.8	3.61	10.0		GAM	104	4.2	99	90-110	80-120
Cesium-137	115	5.0	3.75	20.0		GAM	110	4.4	104	90-110	80-120

QC-LCS #76238

Repo



LAB CONTROL SAMPLES Page 1 SUMMARY DATA SECTION Page 9

SDG 8641

8641-004

ITK2126-01

DUPLICATE

	8641					Test America, Inc.	
Contact	N. Joseph Verville DUPLICATE			ORIGINAL	Contract	<u>11K2126</u>	
Lab sample id	<u>S011232-04</u>	Lab	sample id	<u>S011232-01</u>	Client sample id	ITK2126-01	
Dept sample id	8641-004	Dept	sample id		Location/Matrix		WATER
			Received	11/23/10	Collected/Volume Chain of custody id		<u>L</u>

ANALYTE	DUPLICATE pCi/L	20 ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	20 ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	3о тот	DER σ
Gross Alpha	0.437	0.25	0.330	3.00	J	80A	0.709	0.31	0.365	J	47	114	1.3
Gross Beta	0.776	0.62	0.996	4.00	υ	80B	1.48	0.57	0.873	J	62	115	1.6
Tritium	-47.5	88	151	200	υ	н	46.8	89	148	U	-		1.5
Radium-226	-0.160	0.32	0.657	1.00	υ	RA	0.047	0.40	0.732	U	-		0.8
Radium-228	0.203	0.27	0.537	1.00	U	AC	-0.066	0.21	0.471	U	-		1.6
Strontium-90	-0.042	0.59	1.40	2.00	U	SR	0.089	0.62	1.39	U	-		0.3
Uranium, Total	0.042	0.010	0.019	1.00	J	U_T	0.046	0.010	0.019	J	9	48	0.6
Potassium-40	υ		20.1	25.0	υ	GAM	U		16.5	U	-		0.3
Cesium-137	U		1.82	20.0	υ	GAM	U		1.25	υ	-		0.5

QC-DUP#1 76240

DUPLICATES Page 1 SUMMARY DATA SECTION Page 10 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-DUP</u> Version <u>3.06</u> Report date <u>12/28/10</u>

SDG 8641

8641-001

DATA SHEET

ITK2126-01

	8641 N. Joseph Verville	Client Contract	<u>Test America, Inc.</u> ITK2126	
Lab sample id Dept sample id Received	8641-001 11/23/10	Client sample id Location/Matrix Collected/Volume ain of custody id	Boeing-SSFL 11/20/10 12:45 10.0 L	WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.709	0.31	0.365	3.00	J	80A
Gross Beta	12587472	1.48	0.57	0.873	4.00	J	80B
Tritium	10028178	46.8	89	148	200	U	н
Radium-226	13982633	0.047	0.40	0.732	1.00	υ	RA
Radium-228	15262201	-0.066	0.21	0.471	1.00	υ	AC
Strontium-90	10098972	0.089	0.62	1.39	2.00	υ	SR
Uranium, Total		0.046	0.010	0.019	1.00	J	U_T
Potassium-40	13966002	υ		16.5	25.0	U	GAM
Cesium-137	10045973	υ		1.25	20.0	U	GAM

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-DS
Version	3.06
Report date	12/28/10

DATA SHEETS Page 1 SUMMARY DATA SECTION Page 11

SDG 8641

Test	AC Matrix WATER
SDG	8641
Contact	N. Joseph Verville

LAB METHOD SUMMARY RADIUM-228 IN WATER BETA COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX PLANCHET	CLIENT SAMPLE ID	Radium-228
Preparation	batch 7271-024		
S011232-01	8641-001	ITK2126-01	υ
S011232-02	8641-002	Lab Control Sample	ok
S011232-03	8641-003	Method Blank	U
S011232-04	8641-004	Duplicate (S011232-01)	- U
Nominal va	ues and limits from m	ethod RDLs (pCi/L)	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7271-024 20 prep error 1).4 % Ref	erence	Lab N	otebool	k No. 7	7271	pg.024	1				
- S011232-01	ITK2126-01	0.471	1.80			81		150		19	12/09/10	12/09	GRB-221
S011232-02	Lab Control Sample	0.446	1.80			76		150			12/09/10	12/09	GRB-222
S011232-03	Method Blank	0.454	1.80			78		150			12/09/10	12/09	GRB-223
S011232-04	Duplicate (S011232-01)	0.537	1.80			82		150		19	12/09/10	12/09	GRB-224
Nominal val	ues and limits from method	1.00	1.80			30-105	5	50		180			

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

AVERAGES ± 2 SD	MDA	0.477	±	0.083	
FOR 4 SAMPLES	YIELD	79	±	6	

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	12/28/10

METHOD SUMMARIES Page 1 SUMMARY DATA SECTION Page 12

SDG 8641

Test	<u>SR</u> Matrix <u>WATER</u>
SDG	8641
Contact	N. Joseph Verville

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER BETA COUNTING Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX PLANCHET	CLIENT SAMPLE ID	Strontium-90
Preparation	1 batch 7271-024		
S011232-01	8641-001	ITK2126-01	U
S011232-02	8641-002	Lab Control Sample	ok
S011232-03	8641-003	Method Blank	υ
S011232-04	8641-004	Duplicate (S011232-01)	- U
<u></u>			
Nominal val	lues and limits from m	ethod RDLs (pCi/L)	2.00

METHOD PERFORMANCE

LAB	RAW SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX CLIENT SAMPLE ID	pCi/L	L	FAC	TION	ę	ક	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
I <u></u>														
Preparation	batch 7271-024 2σ prep error 1	.0.4 % Re	ference	Lab N	lotebool	c No.	7271	pg.024	Ł					
S011232-01	ITK2126-01	1.39	0.500			49		50			16	12/04/10	12/06	GRB-221
S011232-02	Lab Control Sample	0.571	0.500			66		100				12/04/10	12/06	GRB-229
S011232-03	Method Blank	1.05	0.500			63		50				12/04/10	12/06	GRB-223
S011232-04	Duplicate (S011232-01)	1.40	0.500			50		50			16	12/04/10	12/06	GRB-204
Nominal val	ues and limits from method	2.00	0.500			30-109	5	50			180			

PROCEDURES	REFERENCE	905.0	AVERAGES ± 2 SD	MDA <u>1.10</u> ± <u>0.780</u>
	DWP-380	Strontium in Drinking Water, rev 8	FOR 4 SAMPLES	YIELD <u>57</u> ± <u>18</u>

EAS
TA
<u>Ver 1.0</u>
DVD-LMS
3.06
12/28/10

METHOD SUMMARIES Page 2 SUMMARY DATA SECTION Page 13

SDG 8641

Test <u>80A</u> Matrix <u>WATER</u> SDG <u>8641</u> Contact <u>N. Joseph Verville</u>

LAB METHOD SUMMARY GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
Preparation	batch 727	1-024		
S011232-01	80	8641-001	ITK2126-01	0.709 J
S011232-02	80	8641-002	Lab Control Sample	ok
S011232-03	80	8641-003	Method Blank	U
S011232-04	80	8641-004	Duplicate (S011232-01)	ok J

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC		RESID mg	EFF %	COUNT min	FWHM keV		PREPARED	ANAL- YZED	DETECTOR
					- 1 -									······
Preparation	batch 727	1-024 20 prep error 2	0.6 % Re	ference	Lab N	loteboo!	k No. '	7271	pg.024	L				
S011232-01	80	ITK2126-01	0.365	0.300			15		400		17	12/07/10	12/07	GRB-105
S011232-02	80	Lab Control Sample	0.723	0.250			61		400			12/07/10	12/07	GRB-107
S011232-03	80	Method Blank	0.639	0.250			63		400			12/07/10	12/09	GRB-104
S011232-04	80	Duplicate (S011232-01)	0.330	0.300			13		400		19	12/07/10	12/09	GRB-103
											 			. <u>.</u>
Nominal val	ues and li	mits from method	3.00	0.250			0-200	D	100		180			

PROCEDURES	REFERENCE	900.0	AVERAGES ± 2 SD	MDA	0.514	±	2
	DWP-121	Gross Alpha and Gross Beta in Drinking Water,	FOR 4 SAMPLES	RESIDUE	38:	± <u>55</u>	-
		rev 10	L				

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	12/28/10

METHOD SUMMARIES Page 3 SUMMARY DATA SECTION Page 14

SDG 8641

Test	80B Matrix WATER
SDG	8641
Contact	N. Joseph Verville

LAB METHOD SUMMARY

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

RESULTS

SAMPLE ID T				
SAMPLE ID I.	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
Preparation b	natch 7271	-024		
-				
S011232-01 8	30	8641-001	ITK2126-01	1.48 J
S011232-02 8	30	8641-002	Lab Control Sample	ok
S011232-03 8	30	8641-003	Method Blank	υ
S011232-04 8	30	8641-004	Duplicate (S011232-01)	ok U

METHOD PERFORMANCE

LAB	RAW SUF-		MDA	ALIQ	PREP	DILU-	RESID	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	mg	ક	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation	batch 727	1-024 2o prep error	11.0 % Re	ference	Lab 1	Noteboo	k No.	7271	pg.024	ł					
S011232-01	80	ITK2126-01	0.873	0.300			15		400			17	12/07/10	12/07	GRB-105
S011232-02	80	Lab Control Sample	1.58	0.250			61		400				12/07/10	12/07	GRB-107
S011232-03	80	Method Blank	0.958	0.250			63		400				12/07/10	12/09	GRB-104
S011232-04	80	Duplicate (S011232-01)	0.996	0.300			13		400			19	12/07/10	12/09	GRB-103
Nominal val	ues and li	mits from method	4.00	0.250			0-20	0	100			180			

PROCEDURES	REFERENCE	900.0
	DWP-121	Gross Alpha and Gross Beta in Drinking Water,
		rev 10
1		

AVERAGES ± 2 SD	MDA	1.10	±	0.646
FOR 4 SAMPLES	RESIDUE	38	±	

	·····
Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	12/28/10

METHOD SUMMARIES Page 4 SUMMARY DATA SECTION Page 15

SDG 8641

Test <u>GAM</u> Matrix <u>WATER</u> SDG <u>8641</u> Contact <u>N. Joseph Verville</u>

LAB METHOD SUMMARY GAMMA EMITTERS IN WATER GAMMA SPECTROSCOPY

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137	
Preparation	n batch 727	1-024			·····	
S011232-01		8641-001	ITK2126-01		υ	
S011232-02		8641-002	Lab Control Sample	ok	ok	
S011232-03		8641-003	Method Blank		υ	
S011232-04		8641-004	Duplicate (S011232-01)		- U	
Nominal va	lues and li	mits from m	nethod RDLs (pCi/L)	10.0	20.0	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %		FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	a batch 7271-024 2σ prep error 7	.0 % Re	ference	Lab N	iotebool	c No.	7271	pg.024	ł				
S011232-01	ITK2126-01		2.00					874		16	11/30/10	12/06	01,04,00
S011232-02	Lab Control Sample		2.00					874			11/30/10	12/06	MB,05,00
S011232-03	Method Blank		2.00					874			11/30/10	12/06	MB,08,00
S011232-04	Duplicate (S011232-01)		2.00					490		17	11/30/10	12/07	01,01,00
									······································	 			
Nominal val	ues 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
1		

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	12/28/10

METHOD SUMMARIES Page 5 SUMMARY DATA SECTION Page 16

SDG 8641

Test <u>U T</u> Matrix <u>WATER</u> SDG <u>8641</u> Contact <u>N. Joseph Verville</u>

LAB METHOD SUMMARY

URANIUM, TOTAL KINETIC PHOSPHORIMETRY, UG Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

RESULTS

LAB	RAW SUF-		Uranium,
SAMPLE ID	TEST FIX PLANCHET	CLIENT SAMPLE ID	Total
Preparation	n batch 7271-024		
S011232-01	8641-001	ITK2126-01	0.046 J
S011232-02	8641-002	Lab Control Sample	ok
S011232-03	8641-003	Method Blank	υ
S011232-04	8641-004	Duplicate (S011232-01)	ok J
Nominal val	lues and limits from m	ethod RDLs (pCi/L)	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L		DILU- TION	YIELD %		COUNT min			PREPARED	ANAL- YZED	DETECTOR
Preparation	h batch 7271-024 20 prep error	Ref	erence	Lab N	otebool	c No.	7271	pg.024	1				
S011232-01	ITK2126-01	0.019 0	0.0200							25	12/15/10	12/15	KPA-001
S011232-02	Lab Control Sample	0.194 0	0.0200								12/15/10	12/15	KPA-001
S011232-03	Method Blank	0.019 0	.0200								12/15/10	12/15	KPA-001
S011232-04	Duplicate (S011232-01)	0.019 0	0.0200							25	12/15/10	12/15	KPA-001
Nominal val	ues and limits from method	1.00 0).0200							 180			

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD	MDA0.	<u>063</u> ±	0.175
FOR 4 SAMPLES	YIELD	±	·

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	12/28/10

METHOD SUMMARIES Page 6 SUMMARY DATA SECTION Page 17

SDG 8641

Test	H Matrix WATER
SDG	8641
Contact	N. Joseph Verville

LAB METHOD SUMMARY

TRITIUM IN WATER

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

RESULTS

	RAW SUF- TEST FIX PLANCHET	CLIENT SAMPLE ID	Triti	.um
Preparation	batch 7271-024			
S011232-01	8641-001	ITK2126-01	U	
S011232-02	8641-002	Lab Control Sample	ok	
S011232-03	8641-003	Method Blank	υ	
S011232-04	8641-004	Duplicate (S011232-01)	-	U

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/I	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT			PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 727	1-024 2o prep error	10.0 %	Reference	Lab 1	loteboo	k No.	7271	pg.024	ł				
S011232-01		ITK2126-01	148	0.0100			100		200		19	12/08/10	12/09	LSC-006
S011232-02		Lab Control Sample	148	0.100			10		200			12/08/10	12/09	LSC-006
S011232-03		Method Blank	152	0.100			10		200			12/08/10	12/09	LSC-006
S011232-04		Duplicate (S011232-01)	151	0.0100			100		200		19	12/08/10	12/09	LSC-006
Nominal val	ues and li	mits from method	200	0.0100					100		 180			

PROCEDURES REFERENCE 90	06.0	AVERAGES ± 2 SD	MDA <u>150</u> ± <u>4.12</u>
DWP-212 T1	ritium in Drinking Water by Distillation, rev 8	FOR 4 SAMPLES	YIELD <u>55</u> ± <u>104</u>

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	12/28/10

METHOD SUMMARIES Page 7 SUMMARY DATA SECTION Page 18

SDG 8641

Test	RA Matrix WATER
SDG	8641
Contact	N. Joseph Verville

LAB METHOD SUMMARY

RADIUM-226 IN WATER RADON COUNTING Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX PLANCHET	CLIENT SAMPLE ID	Radium-226
Preparation	1 batch 7271-024		
S011232-01	8641-001	ITK2126-01	υ
S011232-02	8641-002	Lab Control Sample	ok
S011232-03	8641-003	Method Blank	υ
S011232-04	8641-004	Duplicate (S011232-01)	- U

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SA		MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %		COUNT	FWHM keV			PREPARED	ANAL- YZED	DETECTOR
SAMPLE ID	IBJI FIX CHIENI JA	WEIG ID	рступ	ц.	FAC			•			KÇ V		TREFARED	1260	DETECTOR
Preparation	batch 7271-024	2σ prep error 1	6.4 % Re	ference	Lab N	lotebool	c No.	7271	pg.024	l					
S011232-01	ITK2126-0)1	0.732	0.100			100		104			18	12/08/10	12/08	RN-011
S011232-02	Lab Contr	col Sample	0.765	0.100			100		104				12/08/10	12/08	RN-010
S011232-03	Method Bl	ank	0.602	0.100			100		104				12/08/10	12/08	RN-012
S011232-04	Duplicate	e (S011232-01)	0.657	0.100			100		104			18	12/08/10	12/08	RN-014
Nominal val	ues and limits from	method	1.00	0.100					100			180			

PROCEDURES	REFERENCE	903.1	AVERAGES ± 2 SD	MDA <u>0.689</u> ± <u>0.147</u>
	DWP-881A	Ra-226 Screening in Drinking Water, rev 6	FOR 4 SAMPLES	YIELD 100 ± 0

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	12/28/10

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SDG 8641

SDG <u>8641</u> Contact <u>N. Joseph Verville</u>

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

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
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SDG 8641

SDG	864	<u> 11</u>	
Contact	<u>N.</u>	Joseph	Verville

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

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.

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>12/28/10</u>

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SDG 8641

SDG <u>8641</u> Contact <u>N. Joseph Verville</u>

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

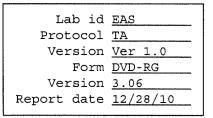
WORK SUMMARY

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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SDG 8641

SDG <u>8641</u> Contact <u>N. Joseph Verville</u>

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Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

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.

REPORT GUIDES Page 4 SUMMARY DATA SECTION Page 23 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>12/28/10</u>

	SDG	8641	
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SDG <u>8641</u> Contact <u>N. Joseph Verville</u>

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

DATA SHEET

J	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
В	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.
Н	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.
Th	e 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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Lab id	EAS	
Protocol	TA	
Version	<u>Ver 1.0</u>	
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Version	3.06	
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SDG 8641

SDG <u>8641</u> Contact <u>N. Joseph Verville</u>

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

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.

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>12/28/10</u>

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SDG 8641

SDG	<u>864</u>	<u>11</u>	
Contact	<u>N.</u>	Joseph	Verville

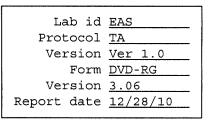
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Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

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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SDG <u>8641</u> Contact <u>N. Joseph Verville</u>

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Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

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.

REPORT GUIDES Page 8 SUMMARY DATA SECTION Page 27 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>12/28/10</u>

SDG 8641

SDG <u>8641</u> Contact <u>N. Joseph Verville</u>

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

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.

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ANALYTICAL EBERLINE

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REPORT GUIDE

Client Test America, Inc. Contract ITK2126

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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Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	12/28/10

SDG 8641

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Contact	<u>N.</u>	Joseph	Verville

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

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 12/28/10

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SDG <u>8641</u> Contact <u>N. Joseph Verville</u>

REPORT GUIDE

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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'

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>12/28/10</u>

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Contact	<u>N.</u>	Joseph	Verville

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

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 <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>12/28/10</u>

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GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

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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Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	12/28/10

SDG 8641

SDG <u>8641</u> Contact <u>N. Joseph Verville</u>

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>

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 Protocol	
Version	Ver 1.0
Form	DVD-RG
Version	3.06
Report date	12/28/10

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SUBCONTRACT ORDER TestAmerica Irvine

ITK2126

8641

SENDING LABORATORY:	RECEIVING LABORATORY:
TestAmerica Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 260-3297 Project Manager: Debby Wilson	Eberline Services 2030 Wright Avenue Richmond, CA 94804 Phone :(510) 235-2633 Fax: (510) 235-0438 Project Location: CA - CALIFORNIA Receipt Temperature: <u>4.8</u> °C Ice: <u>Y</u> / N
	-

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

Analysis	Units	Expires	Comments
Sample ID: ITK2126-01 (Ou	tfall 009 Composite - W	ater) Sampled: 11/20/10 12:45	PH=8, Temp=51F
Gamma Spec-O	mg/kg	11/20/11 12:45	Out Eberline, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	05/19/11 12:45	Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	05/19/11 12:45	Out Eberline Boeing permit, DO NOT FILTER!
Level 4 Data Package - Ou	t N/A	12/18/10 12:45	
Radium, Combined-O	pCi/L	11/20/11 12:45	Out Eberline Boeing permit, DO NOT
Strontium 90-0	pCi/L	11/20/11 12:45	Out Eberline, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	11/20/11 12:45	Out Eberline, Boeing permit, DO NOT
Uranium, Combined-O	pCi/L	11/20/11 12:45	Out Eberline, Boeing permit, DO NOT FILTER!
Containers Supplied:			
2.5 gal Poly (J)	500 mL Amber (K)		

Released Released

oD Date/Time 23/10 ۱۱

Date/Time

Received By 10 20

0 17:00 11/22 Date/Time

Received By

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ient:	1051	11/22/10 1	D3/P CoCNO	ITK	2126			
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ontaine	er I.D. No.	ue aites j	Requested		P.O. Rec			
				INSPEC	FION		No[] N/A [/	1
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' .					Yes [4]	No[]		
3.		are in correct			Yes [7]	-		
9.	Paperwoi	rk agrees with		ahels [] F	ad labels []	Appropriate sam	pie labels [X	
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11.	Samples	are: In go		eserved [*] pH Pre	eservative		
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13.	Describe	any anomalie	S .					
14	 Was P.N	A. notified of a		Yes	[[]] No[· · · · ·		
14.		EV LA	iny anomalies?	Yes Date:		IDAS		
15.	Inspecte	ed by4	iny anomalies?	Yes Date:	Customer	e:D45 Beta/Gamma	ion Chamber	wipe
15. Cust	Inspecte	EV LA		Yes Date: 	12310 Tim	e: 1045	ion Chamber mR/hr	wipe
15. Cust Samt	inspecte tomer ple No.	ed by Beta/Gamma cpm	iny anomalies?	Date:	Customer	e:D45 Beta/Gamma		wipe
15. Cust Samt	Inspecte	ed by Beta/Gamma cpm	iny anomalies?	Date:	Customer	e:D45 Beta/Gamma		wipe
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15. Cust Samp ITK 2	inspecte	ed by4 Beta/Gamma ² cpm 26e>	iny anomalies?	Date:	Customer Sample No.	e:D45 Beta/Gamma	mR/hr	
15. Cust Samp ITK 2	inspecte tomer ple No. 2[26-0]	ed by4 Beta/Gamma ² cpm 26e>	Iny anomalies?	Date:	Customer Sample No.	e:Beta/Gamma cpm	mR/hr	

Form SCP-02, 07-30-07

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APPENDIX G

Section 27

Outfall 009 – December 6, 2010 MEC^X Data Validation Report THIS PAGE LEFT INTENTIONALLY BLANK



DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ITL0524

Prepared by

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

I. INTRODUCTION

Task Order Title: Contract Task Order:	Boeing SSFL NPDES 1261.100D.00
Sample Delivery Group:	ITL0524
Project Manager:	B. Kelly
Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	1
Laboratory:	TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 009 (Comp)	ITL0524-02	G0K110579- 001, S012154- 001	Water		
Outfall 009 (Comp)	ITL0524-02RE	G0K110579- 001	Water	12/6/2010 03:11	1613B

II. Sample Management

No anomalies were observed regarding sample management. The temperature upon receipt was not noted by Eberline; however, due to the nonvolatile nature of the analytes, no qualifications were required. The samples in this SDG were received at the remaining 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. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

Qualifie	r 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.
Ν	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.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
Н	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
С	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
В	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.
Е	Not applicable.	Duplicates showed poor agreement.
Ι	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
А	Not applicable.	ICP Serial Dilution %D were not within control limits.
Μ	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
Т	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

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.
Ρ	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.
*11, *111	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 14, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the MEC^{\times} 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.
 - o 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 between the EDL and the RL for most target compounds. Most target compounds were reported as EMPCs in the method blank; however, due to the extent of the method blank contamination, the reviewer considered it appropriate to use the EMPCs to qualify sample results. The method blank result for OCDD was insufficient to qualify the sample result. All other individual isomers detected in

both the method blank and site sample were qualified as nondetected, "U" at the EDL, or at the level of contamination in the sample. All sample totals containing one or more peaks detected in the method blank were qualified as estimated, "J."

- Blank Spikes and Laboratory Control Samples: OPR 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: There were no field duplicate samples identified for this SDG.
- Internal Standards Performance: The labeled standard recoveries in 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. The laboratory performed a confirmation analysis for 2,3,7,8-TCDF detected in the sample; however, the confirmation result did not meet signal-to-noise criteria and was reported as a nondetect. The original result was rejected, "R," in favor of the confirmation result.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating a representative number of reportable sample results. Any individual isomers reported as EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. Any totals including EMPC peaks were qualified as estimated, "J." 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 METHOD 245.1—Mercury

Reviewed By: P. Meeks Date Reviewed: January 14, 2011

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

- Holding Times: The analytical holding time, six months for ICP and ICP-MS metals and 28 days for mercury, was met.
- Tuning: Not applicable to this analysis.
- Calibration: Calibration criteria were met. Mercury initial calibration r² values were ≥0.995 and all initial and continuing calibration recoveries were within 85-115%. 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 laboratoryestablished 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 dissolved fraction of the sample in this SDG. Recoveries and the RPD were within method-established QC limits of 75-125% and ≤20%, respectively.
- 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: January 27, 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. Aliquots for the remaining analyses were prepared within the five-day analytical holding time for unpreserved samples.
- Calibration: The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

The 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 laboratoryestablished control limits.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG for all analyses. 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.
- 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 14, 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 Standard Method SM2540D, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding time, seven days from collection, was met.
- Calibration: The balance logs were acceptable.
- Blanks: TSS was not detected in the method blank.
- Blank Spikes and Laboratory Control Samples: The recovery was within laboratoryestablished QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample 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 ITL0524

Analysis Method 8642 Matrix Type: WATER Sample Name Outfall 009 (Comp) Validation Level: IV ITL0524-02 Sample Date: 12/6/2010 3:11:00 AM Lab Sample Name: Analyte CAS No Result RL MDL Result Lab Validation Validation Value Units Qualifier **Oualifier** Notes Uranium. Total 0.093 0.019 pCi/L DNQ 1 Jb J Analysis Method 900 Sample Name Outfall 009 (Comp) Matrix Type: WATER Validation Level: IV Sample Date: 12/6/2010 3:11:00 AM ITL0524-02 Lab Sample Name: Result RL Analyte CAS No MDL Result Lab Validation Validation Value Units Qualifier Qualifier Notes Gross Alpha 12587461 0.966 3 0.282 pCi/L Jb J DNQ Gross Beta 12587472 2.02 4 0.888 pCi/L Jb J DNQ Analysis Method 901.1 Matrix Type: WATER Sample Name Outfall 009 (Comp) Validation Level: IV ITL0524-02 Sample Date: 12/6/2010 3:11:00 AM Lab Sample Name: CAS No Result RL Analyte MDL Result Lab Validation Validation Value Units Qualifier Qualifier Notes Cesium-137 10045973 ND 20 1.24 pCi/L U U Potassium-40 13966002 ND 25 14.8 pCi/L U U Analysis Method 903.1 Matrix Type: WATER Validation Level: IV Sample Name Outfall 009 (Comp) Sample Date: 12/6/2010 3:11:00 AM ITL0524-02 Lab Sample Name: CAS No Analyte Result RL MDL Result Lab Validation Validation Qualifier Value Units Notes Qualifier Radium-226 13982633 0.272 1 0.456 pCi/L U U Analysis Method 904 Matrix Type: WATER Validation Level: IV Sample Name Outfall 009 (Comp) Sample Date: 12/6/2010 3:11:00 AM Lab Sample Name: ITL0524-02 Analyte CAS No Result RL MDL Result Lab Validation Validation Value Units Qualifier Qualifier Notes Radium-228 0.111 15262201 1 0.442 pCi/L U U

Monday, January 31, 2011

Sample Name	Outfall 009 (0	Comp)	Matri	x Type:	WATER	I.	alidation Le	vel: IV
Lab Sample Name:	ITL0524-02	Sam	ple Date:	12/6/2010	0 3:11:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	0.134	2	0.68	pCi/L	U	U	
Analysis Metho	od 906							
Sample Name	Outfall 009 (0	Comp)	Matri	x Type:	WATER	۲	alidation Le	vel: IV
Lab Sample Name:	ITL0524-02	Sam	ple Date:	12/6/2010	0 3:11:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-10.5	500	356	pCi/L	U	U	
Analysis Metho	od EPA	245.1						
Sample Name	Outfall 009 (0	Comp)	Matri	x Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	ITL0524-02	Sam	ple Date:	12/6/2010	0 3:11:00 AM			
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 Metho	od EPA	245.1 <i>-</i> L	Diss					
Sample Name	Outfall 009 (0	Comp)	Matri	x Type:	Water	Ţ	alidation Le	vel: IV
Lab Sample Name:	ITL0524-02	Sam	ple Date:	12/6/2010	0 3:11:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
		, and			emus	~~~~~~	Quanner	110105

Analysis Method 905

Sample Name	Outfall 009 (C	Comp)	Matri	x Type: V	WATER	V	Validation Level: IV				
Lab Sample Name:	ITL0524-02	Sam	ple Date:	12/6/2010	3:11:00 AN	1					
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	0.0000002	ug/L	J, B	U	В			
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.00005	0.0000019	ug/L	J, Q, B	U	В			
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.0000037	ug/L		U				
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.00005	0.0000004	ug/L		U				
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.0000019	ug/L		U				
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.000004	ug/L		U				
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000031	ug/L		U				
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.00005	0.0000067	ug/L		U				
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.0000019	ug/L		U				
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.0000018	ug/L		U				
1,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.0000025	ug/L		U				
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000027	ug/L		U				
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.0000028	ug/L		U				
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.0000002	ug/L		U				
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000044	ug/L		U				
2,3,7,8-TCDF	51207-31-9	4.4e-006	0.00001	0.0000009	ug/L	J	R	D			
OCDD	3268-87-9	0.00073	0.0001	0.0000005	ug/L	В					
OCDF	39001-02-0	ND	0.0001	0.0000004	ug/L	J, Q, B	U	В			
Total HpCDD	37871-00-4	0.00011	0.00005	0.0000002	ug/L	J, Q, B	J	B, DNQ, *II			
Total HpCDF	38998-75-3	2.7e-005	0.00005	0.0000019	ug/L	J, Q, B	J	B, DNQ, *II			
Total HxCDD	34465-46-8	ND	0.00005	0.0000003	ug/L		U				
Total HxCDF	55684-94-1	1.3e-005	0.00005	0.0000002	ug/L	J, Q, B	J	B, DNQ, *II			
Total PeCDD	36088-22-9	ND	0.00005	0.0000018	ug/L		U				
Total PeCDF	30402-15-4	ND	0.00005	0.0000025	ug/L		U				
Total TCDD	41903-57-5	ND	0.00001	0.0000013	ug/L		U				
Total TCDF	55722-27-5	4.4e-006	0.00001	0.0000009	ug/L	J	J	DNQ			

Analysis Method EPA-5 1613B

Analysis Method SM 2540D

Sample Name	Outfall 009 (0	Comp)	Matri	х Туре:	Water	Validation Level: IV			
Lab Sample Name:	ITL0524-02	Sam	ple Date:	12/6/2010	2/6/2010 3:11:00 AM				
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	

APPENDIX G

Section 28

Outfall 009 – December 6, 2010 Test America Analytical Laboratory Report THIS PAGE LEFT INTENTIONALLY BLANK

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THE LEADER IN ENVIRONMENTAL TESTING

LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project: Routine Outfall 009 2010 Routine Outfall 009

Sampled: 12/06/10 Received: 12/06/10 Issued: 01/11/11 11:41

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

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 3 pages, are

included and are an integral part of this report. This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

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

 ADDITIONAL
 INFORMATION:
 WATER, 1613B, Dioxins/Furans with Totals
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.

 LABORATORY ID
 CLIENT ID
 MATRIX

	CLIENT ID	MAIKIA
ITL0524-01	Outfall 009 (Grab)	Water
ITL0524-02	Outfall 009 (Comp)	Water
ITL0524-03	Trip Blank	Water
1120324-03	TTIP Dialik	vv ater

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



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 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

HEXANE EXTRACTABLE MATERIAL MDL Reporting Sample Dilution Date Data Qualifiers Method Analyte Batch Limit Limit Result Factor Analyzed Analyst Sample ID: ITL0524-01 (Outfall 009 (Grab) - Water) Reporting Units: mg/l Hexane Extractable Material (Oil & EPA 1664A 10L1431 1.3 4.7 ND 1 DA 12/13/10 Grease)

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MWH-Pasadena/BoeingProject ID:Routine Outfall 009 2010618 Michillinda Avenue, Suite 200Routine Outfall 009Arcadia, CA 91007Report Number:ITL0524Attention:Bronwyn KellyITL0524

Sampled: 12/06/10 Received: 12/06/10

METALS									
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water)									
Reporting Units: ug/l									
Mercury	EPA 245.1	10L0745	0.10	0.20	ND	1	DB	12/07/10	
Antimony	EPA 200.8	10L0867	0.30	2.0	ND	1	NH	12/09/10	
Cadmium	EPA 200.8	10L0867	0.10	1.0	ND	1	NH	12/09/10	
Copper	EPA 200.8	10L0867	0.500	2.00	3.25	1	NH	12/09/10	
Lead	EPA 200.8	10L0867	0.20	1.0	2.0	1	NH	12/09/10	
Thallium	EPA 200.8	10L0867	0.20	1.0	ND	1	NH	12/09/10	

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Sampled: 12/06/10 Received: 12/06/10

DISSOLVED METALS									
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water) - cont.									
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	10L0914	0.10	0.20	ND	1	DB	12/08/10	
Antimony	EPA 200.8-Diss	10L1101	0.30	2.0	ND	1	RDC	12/09/10	
Cadmium	EPA 200.8-Diss	10L1101	0.10	1.0	ND	1	RDC	12/09/10	
Copper	EPA 200.8-Diss	10L1101	0.500	2.00	1.68	1	RDC	12/09/10	Ja
Lead	EPA 200.8-Diss	10L1101	0.20	1.0	0.21	1	RDC	12/09/10	Ja
Thallium	EPA 200.8-Diss	10L1101	0.20	1.0	ND	1	RDC	12/09/10	

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

INORGANICS									
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water) - cont.									
Reporting Units: mg/l									
Chloride	EPA 300.0	10L0579	0.25	0.50	1.3	1	NN	12/06/10	
Total Cyanide	SM4500CN-E	10L0786	0.0022	0.0050	ND	1	HH	12/07/10	
Nitrate/Nitrite-N	EPA 300.0	10L0579	0.15	0.26	0.34	1	NN	12/06/10	
Sulfate	EPA 300.0	10L0579	0.20	0.50	2.2	1	NN	12/06/10	
Total Dissolved Solids	SM2540C	10L0663	1.0	10	30	1	MC	12/07/10	
Total Suspended Solids	SM 2540D	10L0787	1.0	10	6.0	1	MC	12/07/10	Ja

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

EPA-5 1613Bx										
A 17		D (1	MDL	Reporting	-	Dilution		Date	Data Qualifiers	
Analyte	Method	Batch	Limit	Limit	Result	Factor	Analyst	Analyzed	Quanners	
Sample ID: ITL0524-02 (Outfall 009 (Reporting Units: ug/L	Comp) - Water) - con	t.								
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	342249	0.0000002	6 0.00005	4.8e-005	0.97	MO	12/11/10	J, B	
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B		0.0000019		1.5e-005	0.97	MO	12/11/10	J, Q, B	
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B		0.0000037		ND	0.97	MO	12/11/10		
1,2,3,4,7,8-HxCDD	EPA-5 1613B		0.000004		ND	0.97	MO	12/11/10		
1,2,3,4,7,8-HxCDF	EPA-5 1613B		0.0000019		ND	0.97	MO	12/11/10		
1,2,3,6,7,8-HxCDD	EPA-5 1613B	342249	0.000004		ND	0.97	MO	12/11/10		
1,2,3,6,7,8-HxCDF 1,2,3,7,8,9-HxCDD	EPA-5 1613B EPA-5 1613B	342249 342249			ND ND	0.97 0.97	MO MO	12/11/10 12/11/10		
1,2,3,7,8,9-HxCDF	EPA-5 1613B	342249			ND	0.97	MO	12/11/10		
1,2,3,7,8-PeCDD	EPA-5 1613B	342249			ND	0.97	MO	12/11/10		
1,2,3,7,8-PeCDF	EPA-5 1613B	342249			ND	0.97	MO	12/11/10		
2,3,4,6,7,8-HxCDF	EPA-5 1613B		0.0000027		ND	0.97	MO	12/11/10		
2,3,4,7,8-PeCDF	EPA-5 1613B	342249	0.0000028	0.00005	ND	0.97	MO	12/11/10		
2,3,7,8-TCDD	EPA-5 1613B	342249	0.0000002	9 0.00001	ND	0.97	MO	12/11/10		
2,3,7,8-TCDF	EPA-5 1613B	342249	0.0000009	7 0.00001	4.4e-006	0.97	MO	12/11/10	J	
OCDD	EPA-5 1613B		0.0000005		0.00073	0.97	MO	12/11/10	В	
OCDF	EPA-5 1613B		0.0000004		3.3e-005	0.97	MO	12/11/10	J, Q, B	
Total HpCDD	EPA-5 1613B		0.0000002		0.00011	0.97	MO	12/11/10	J, Q, B	
Total HpCDF	EPA-5 1613B		0.0000019		2.7e-005	0.97	MO	12/11/10	J, Q, B	
Total HxCDD	EPA-5 1613B		0.0000003		ND	0.97	MO	12/11/10		
Total HxCDF Total PeCDD	EPA-5 1613B		0.0000002		1.3e-005	0.97 0.97	MO MO	12/11/10	J, Q, B	
Total PeCDD	EPA-5 1613B EPA-5 1613B		0.0000018		ND ND	0.97	MO MO	12/11/10 12/11/10		
Total TCDD	EPA-5 1613B		0.0000023		ND	0.97	MO	12/11/10		
Total TCDF	EPA-5 1613B		0.0000009		4.4e-006	0.97	MO	12/11/10	J	
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (2		512219	0.0000000	, 0.00001	39 %	0.97		12/11/10	0	
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (2					47 %					
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (2					44 %					
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-	-141%)				35 %					
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-	152%)				45 %					
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-	-130%)				41 %					
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-					48 %					
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-					41 %					
Surrogate: 13C-1,2,3,7,8-PeCDD (25-18	,				28 %					
Surrogate: 13C-1,2,3,7,8-PeCDF (24-18					33 %					
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-					48 %					
Surrogate: 13C-2,3,4,7,8-PeCDF (21-17 Surrogate: 13C-2,3,7,8-TCDD (25-164%	· ·				32 % 37 %					
Surrogate: 13C-2,3,7,8-TCDD (25-164%) Surrogate: 13C-2,3,7,8-TCDF (24-169%)	·				37 % 39 %					
Surrogate: 13C-2,3,7,8-1CDF (24-1097) Surrogate: 13C-OCDD (17-157%)	<i>יו</i>				39 % 37 %					
Surrogate: 37Cl4-2,3,7,8-TCDD (35-19)	7%)				98 %					
	/									

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MWH-Pasadena/BoeingProject IE618 Michillinda Avenue, Suite 200Arcadia, CA 91007Report NumberAttention: Bronwyn KellyReport Number	b: Routine Outfall 009 2010 Routine Outfall 009Sampled: 12/06/10c: ITL0524Received: 12/06/10
---	---

EPA-5 1613Bx									
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL0524-02RE (Outfall 009	(Comp) - Water) -	cont.							
Reporting Units: ug/L									
2,3,7,8-TCDF	EPA-5 1613B	342249	0.0000044	0.00001	ND	0.97	MO	12/14/10	
Surrogate: 13C-2,3,7,8-TCDF (24-169%)					39 %				
Surrogate: 37Cl4-2,3,7,8-TCDD (35-1979	6)				85 %				

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Uranium, Total

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		5	Routine O Routine O ITL0524	utfall 009 201 utfall 009	0		1	12/06/10 12/06/10	
8642 MDL Reporting Sample Dilution Date Data									
Analyte	Method	Batch		Limit	Result	Factor	Analyst	Analyzed	Qualifiers
Sample ID: ITL0524-02 (Outfall 009 (C Reporting Units: pCi/L	omp) - Water) - co	nt.							

1

0.093

1

CSS

12/21/10

Jb

8642

8642

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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: t Number:	Routine Or	utfall 009 201 utfall 009	0	1	12/06/10 12/06/10		
			900						
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL0524-02 (Outfall 009 (C	omp) - Water) - co	nt.							
Reporting Units: pCi/L									
Gross Alpha	900	8642		3	0.966	1	KT	12/17/10	Jb
Gross Beta	900	8642		4	2.02	1	KT	12/17/10	Jb

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly		5	Routine Or	utfall 009 201 utfall 009	0	1	12/06/10 12/06/10				
901.1											
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers		
Sample ID: ITL0524-02 (Outfall 009 (Co	mp) - Water) - co	nt.									
Reporting Units: pCi/L											
Cesium-137	901.1	8642		20	ND	1	LS	12/16/10	U		

25

ND

1

LS

12/16/10

U

8642

901.1

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Debby Wilson Project Manager

Potassium-40



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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly		5	Routine Ou	utfall 009 201 utfall 009	0	1	12/06/10 12/06/10		
Analyte	Method	Batch	903.1 MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL0524-02 (Outfall 009 (Co Reporting Units: pCi/L	., ,					·		10/00/110	
Radium-226	903.1	8642		1	0.272	1	TM	12/29/10	U

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly		J	Routine Ou	utfall 009 201 utfall 009	0	1	12/06/10 12/06/10			
Analyte	Method	Batch	904 MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers	
Sample ID: ITL0524-02 (Outfall 009 (Co Reporting Units: pCi/L Radium-228	omp) - Water) - co 904	nt. 8642		1	0.111	1	ASM	12/21/10	U	

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly		5	Routine Or	utfall 009 201 utfall 009	0	•	12/06/10 12/06/10		
Analyte	Method	Batch	905 MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL0524-02 (Outfall 009 (Co Reporting Units: pCi/L	• / /								
Strontium-90	905	8642		2	0.134	1	AI	12/20/10	U

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly		5	Routine Or	utfall 009 201 utfall 009	0	•	12/06/10 12/06/10		
			906 MDL	Reporting	Sample	Dilution		Date	Data
Analyte	Method	Batch	Limit	Limit	Result	Factor	Analyst	Analyzed	Qualifiers
Sample ID: ITL0524-02 (Outfall 009 (Co	omp) - Water) - co	nt.							
Reporting Units: pCi/L									
Tritium	906	8642		500	-10.5	1	JO	12/22/10	U

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 009 (Comp) (ITL0524-02	Hold Time (in days)) - Water	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 300.0	2	12/06/2010 03:11	12/06/2010 19:10	12/06/2010 21:20	12/06/2010 21:39
Filtration	1	12/06/2010 03:11	12/06/2010 19:10	12/07/2010 13:54	12/07/2010 13:56

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10

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Received: 12/06/10

METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L1431 Extracted: 12/13/10										
Blank Analyzed: 12/13/2010 (10L1431-E	BLK1)									
Hexane Extractable Material (Oil & Grease)	ND	5.0	mg/l							
LCS Analyzed: 12/13/2010 (10L1431-BS	,									MNR1
Hexane Extractable Material (Oil & Grease)	18.7	5.0	mg/l	20.0		94	78-114			
LCS Dup Analyzed: 12/13/2010 (10L143	81-BSD1)									
Hexane Extractable Material (Oil & Grease)	19.0	5.0	mg/l	20.0		95	78-114	2	11	

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Sampled: 12/06/10 Received: 12/06/10

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L0745 Extracted: 12/07/10										
Blank Analyzed: 12/07/2010 (10L0745-B	LK1)									
Mercury	ND	0.20	ug/l							
LCS Analyzed: 12/07/2010 (10L0745-BS	1)									
Mercury	8.25	0.20	ug/l	8.00		103	85-115			
Matrix Spike Analyzed: 12/07/2010 (10L	0745-MS1)				Source: I	TL0497-1	2			
Mercury	8.11	0.20	ug/l	8.00	ND	101	70-130			
Matrix Spike Dup Analyzed: 12/07/2010	(10L0745-MS	SD1)			Source: I	TL0497-1	2			
Mercury	8.18	0.20	ug/l	8.00	ND	102	70-130	0.8	20	
Batch: 10L0867 Extracted: 12/08/10										
Blank Analyzed: 12/09/2010 (10L0867-B	LK1)									
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 12/09/2010 (10L0867-BS	1)									
Antimony	83.2	2.0	ug/l	80.0		104	85-115			
Cadmium	84.2	1.0	ug/l	80.0		105	85-115			
Copper	84.0	2.00	ug/l	80.0		105	85-115			
Lead	83.9	1.0	ug/l	80.0		105	85-115			
Thallium	83.9	1.0	ug/l	80.0		105	85-115			

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Sampled: 12/06/10 Received: 12/06/10

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METHOD BLANK/QC DATA

METALS

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 10L0867 Extracted: 12/08/10										
Matrix Spike Analyzed: 12/09/2010 (101	.0867-MS1)				Source: I	TL0524-0	,			
	82.2	2.0	wa/1	80.0	ND	10324-0	70-130			
Antimony	02.2	2.0	ug/l	80.0	ND	105	/0-150			
Cadmium	83.3	1.0	ug/l	80.0	ND	104	70-130			
Copper	84.1	2.00	ug/l	80.0	3.25	101	70-130			
Lead	84.9	1.0	ug/l	80.0	2.00	104	70-130			
Thallium	83.0	1.0	ug/l	80.0	ND	104	70-130			
Matrix Spike Dup Analyzed: 12/09/2010) (10L0867-N	(ISD1)			Source: I	TL0524-0	2			
Antimony	83.0	2.0	ug/l	80.0	ND	104	70-130	1	20	
Cadmium	84.9	1.0	ug/l	80.0	ND	106	70-130	2	20	
Copper	82.9	2.00	ug/l	80.0	3.25	100	70-130	2	20	
Lead	87.1	1.0	ug/l	80.0	2.00	106	70-130	3	20	
Thallium	85.5	1.0	ug/l	80.0	ND	107	70-130	3	20	



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Sampled: 12/06/10 Received: 12/06/10

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L0914 Extracted: 12/08/10										
Blank Analyzed: 12/08/2010 (10L0914-B	LK1)									
Mercury	ND	0.20	ug/l							
LCS Analyzed: 12/08/2010 (10L0914-BS	1)									
Mercury	8.05	0.20	ug/l	8.00		101	85-115			
Matrix Spike Analyzed: 12/08/2010 (10L	0914-MS1)				Source: I	TL0524-0	2			
Mercury	8.08	0.20	ug/l	8.00	ND	101	70-130			
Matrix Spike Dup Analyzed: 12/08/2010	(10L0914-M	ISD1)			Source: I	TL0524-0	2			
Mercury	7.90	0.20	ug/l	8.00	ND	99	70-130	2	20	
Batch: 10L1101 Extracted: 12/09/10										
Blank Analyzed: 12/09/2010 (10L1101-B	LK1)									
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 12/09/2010 (10L1101-BS	1)									
Antimony	77.6	2.0	ug/l	80.0		97	85-115			
Cadmium	76.0	1.0	ug/l	80.0		95	85-115			
Copper	79.1	2.00	ug/l	80.0		99	85-115			
Lead	77.7	1.0	ug/l	80.0		97	85-115			
Thallium	78.1	1.0	ug/l	80.0		98	85-115			

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Sampled: 12/06/10 Received: 12/06/10

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METHOD BLANK/QC DATA

DISSOLVED METALS

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 10L1101 Extracted: 12/09/10										
Matrix Spike Analyzed: 12/09/2010 (10L	.1101-MS1)				Source: I	TL0791-0	1			
Antimony	77.4	2.0	ug/l	80.0	ND	97	70-130			
Cadmium	72.9	1.0	ug/l	80.0	ND	91	70-130			
Copper	78.6	2.00	ug/l	80.0	0.855	97	70-130			
Lead	76.9	1.0	ug/l	80.0	ND	96	70-130			
Thallium	76.1	1.0	ug/l	80.0	ND	95	70-130			
Matrix Spike Dup Analyzed: 12/09/2010	(10L1101-M	ISD1)			Source: I	TL0791-0	1			
Antimony	75.7	2.0	ug/l	80.0	ND	95	70-130	2	20	
Cadmium	73.9	1.0	ug/l	80.0	ND	92	70-130	1	20	
Copper	78.8	2.00	ug/l	80.0	0.855	97	70-130	0.2	20	
Lead	77.2	1.0	ug/l	80.0	ND	97	70-130	0.4	20	
Thallium	77.2	1.0	ug/l	80.0	ND	97	70-130	1	20	



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Sampled: 12/06/10 Received: 12/06/10

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L0579 Extracted: 12/06/10										
Blank Analyzed: 12/06/2010 (10L0579-B	LK1)									
Chloride	ND	0.50	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
Sulfate	ND	0.50	mg/l							
LCS Analyzed: 12/06/2010 (10L0579-BS	1)									
Chloride	4.93	0.50	mg/l	5.00		99	90-110			M-3
Sulfate	10.1	0.50	mg/l	10.0		101	90-110			<i>M-3</i>
Duplicate Analyzed: 12/06/2010 (10L057	9-DUP1)				Source: I	ТL0429-0	1			
Chloride	842	50	mg/l		841			0.1		
Nitrate/Nitrite-N	ND	26	mg/l		ND					
Sulfate	83.5	50	mg/l		80.1			4		
Matrix Spike Analyzed: 12/06/2010 (10L	0579-MS1)				Source: I	ТL0429-0	2			
Chloride	67.0	5.0	mg/l	50.0	16.9	100	80-120			
Sulfate	378	25	mg/l	100	323	55	80-120			M2
Matrix Spike Dup Analyzed: 12/06/2010	(10L0579-M	SD1)			Source: I	ТL0429-0	2			
Chloride	67.3	5.0	mg/l	50.0	16.9	101	80-120	0.6	20	
Sulfate	378	25	mg/l	100	323	55	80-120	0.01	20	M2
Batch: 10L0663 Extracted: 12/07/10										
Blank Analyzed: 12/07/2010 (10L0663-B	LK1)									
Total Dissolved Solids	ND	10	mg/l							
LCS Analyzed: 12/07/2010 (10L0663-BS	1)									
Total Dissolved Solids	994	10	mg/l	1000		99	90-110			

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Sampled: 12/06/10

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Received: 12/06/10

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L0663 Extracted: 12/07/10										
Duplicate Analyzed: 12/07/2010 (10L066 Total Dissolved Solids	3-DUP1) 1090	10	mg/l		Source: I 1110	TL0458-0	1	1	10	
Batch: 10L0786 Extracted: 12/07/10										
Blank Analyzed: 12/07/2010 (10L0786-B Total Cyanide	LK1) ND	0.0050	mg/l							
LCS Analyzed: 12/07/2010 (10L0786-BS Total Cyanide	1) 0.193	0.0050	mg/l	0.200		96	90-110			
Matrix Spike Analyzed: 12/07/2010 (10L	.0786-MS1)				Source: I	TL0520-0	3			
Total Cyanide	0.186	0.0050	mg/l	0.200	ND	93	70-115			
Matrix Spike Dup Analyzed: 12/07/2010	(10L0786-M	SD1)			Source: I	TL0520-0	3			
Total Cyanide	0.186	0.0050	mg/l	0.200	ND	93	70-115	0.2	15	
Batch: 10L0787 Extracted: 12/07/10										
Blank Analyzed: 12/07/2010 (10L0787-B	LK1)									
Total Suspended Solids	ND	10	mg/l							
LCS Analyzed: 12/07/2010 (10L0787-BS	1)									
Total Suspended Solids	987	10	mg/l	1000		99	85-115			
Duplicate Analyzed: 12/07/2010 (10L078	57-DUP1)				Source: I	TL0509-0	1			
Total Suspended Solids	19.0	10	mg/l		19.0			0	10	

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
·	Kesuit	Limit	Units	Level	Kesun	70KEU	Limits	KrD	Limit	Quaimers
Batch: 342249 Extracted: 12/08/10										
Blank Analyzed: 12/11/2010 (G0L080	000249B)				Source:					
1,2,3,4,6,7,8-HpCDD	5e-006	0.00005	ug/L				-			J, Q
1,2,3,4,6,7,8-HpCDF	6.4e-006	0.00005	ug/L				-			J, Q
1,2,3,4,7,8,9-HpCDF	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDD	2.5e-006	0.00005	ug/L				-			J, Q
1,2,3,4,7,8-HxCDF	2.8e-006	0.00005	ug/L				-			J, Q
1,2,3,6,7,8-HxCDD	2.5e-006	0.00005	ug/L				-			J, Q
1,2,3,6,7,8-HxCDF	2.8e-006	0.00005	ug/L				-			J, Q
1,2,3,7,8,9-HxCDD	3.2e-006	0.00005	ug/L				-			J
1,2,3,7,8,9-HxCDF	2.2e-006	0.00005	ug/L				-			J, Q
1,2,3,7,8-PeCDD	3.2e-006	0.00005	ug/L				-			J, Q
1,2,3,7,8-PeCDF	3.1e-006	0.00005	ug/L				-			J, Q
2,3,4,6,7,8-HxCDF	2.6e-006	0.00005	ug/L				-			J, Q
2,3,4,7,8-PeCDF	3.9e-006	0.00005	ug/L				-			J, Q
2,3,7,8-TCDD	ND	0.00001	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	ug/L				-			
OCDD	2.6e-005	0.0001	ug/L				-			J
OCDF	7.8e-006	0.0001	ug/L				-			J, Q
Total HpCDD	5e-006	0.00005	ug/L				-			J, Q
Total HpCDF	6.4e-006	0.00005	ug/L				-			J, Q
Total HxCDD	8.2e-006	0.00005	ug/L				-			J, Q
Total HxCDF	1e-005	0.00005	ug/L				-			J, Q
Total PeCDD	3.2e-006	0.00005	ug/L				-			J, Q
Total PeCDF	7e-006	0.00005	ug/L				-			J, Q
Total TCDD	ND	0.00001	ug/L				-			
Total TCDF	ND	0.00001	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.0011		ug/L	0.002		57	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0013		ug/L	0.002		66	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.0013		ug/L	0.002		63	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.001		ug/L	0.002		52	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0012		ug/L	0.002		58	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.0012		ug/L	0.002		58	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.0012		ug/L	0.002		62	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0012		ug/L	0.002		58	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0011		ug/L	0.002		57	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0012		ug/L	0.002		58	24-185			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.0013		ug/L	0.002		64	28-136			

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

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Sampled: 12/06/10 Received: 12/06/10

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 342249 Extracted: 12/08/10										
Blank Analyzade 12/11/2010 (COL 09)	00002400				Source:					
Blank Analyzed: 12/11/2010 (G0L08) Surrogate: 13C-2,3,4,7,8-PeCDF	0000249B) 0.0011		ug/L	0.002	Source:	56	21-178			
Surrogate: 13C-2,3,7,8-TCDD	0.00097		ug/L ug/L	0.002		50 49	25-164			
Surrogate: 13C-2,3,7,8-TCDD	0.001		ug/L ug/L	0.002		4) 52	23-164			
Surrogate: 13C-OCDD	0.0023		ug/L ug/L	0.002		52 58	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.0008		ug/L	0.0008		100	35-197			
LCS Analyzed: 12/11/2010 (G0L0800)00249C)				Source:					
1,2,3,4,6,7,8-HpCDD	0.00112	0.00005	ug/L	0.001	Sourcei	112	70-140			В
1,2,3,4,6,7,8-HpCDF	0.00116	0.00005	ug/L	0.001		116	82-122			В
1,2,3,4,7,8,9-HpCDF	0.00113	0.00005	ug/L	0.001		113	78-138			
1,2,3,4,7,8-HxCDD	0.00122	0.00005	ug/L	0.001		122	70-164			В
1,2,3,4,7,8-HxCDF	0.00118	0.00005	ug/L	0.001		118	72-134			В
1,2,3,6,7,8-HxCDD	0.00109	0.00005	ug/L	0.001		109	76-134			В
1,2,3,6,7,8-HxCDF	0.00109	0.00005	ug/L	0.001		109	84-130			В
1,2,3,7,8,9-HxCDD	0.00113	0.00005	ug/L	0.001		113	64-162			В
1,2,3,7,8,9-HxCDF	0.00112	0.00005	ug/L	0.001		112	78-130			В
1,2,3,7,8-PeCDD	0.00109	0.00005	ug/L	0.001		109	70-142			В
1,2,3,7,8-PeCDF	0.00116	0.00005	ug/L	0.001		116	80-134			В
2,3,4,6,7,8-HxCDF	0.00109	0.00005	ug/L	0.001		109	70-156			В
2,3,4,7,8-PeCDF	0.00116	0.00005	ug/L	0.001		116	68-160			В
2,3,7,8-TCDD	0.000223	0.00001	ug/L	0.0002		111	67-158			
2,3,7,8-TCDF	0.000218	0.00001	ug/L	0.0002		109	75-158			
OCDD	0.00208	0.0001	ug/L	0.002		104	78-144			В
OCDF	0.00224	0.0001	ug/L	0.002		112	63-170			В
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.000878		ug/L	0.002		44	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.000898		ug/L	0.002		45	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.000959		ug/L	0.002		48	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.000822		ug/L	0.002		41	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.000938		ug/L	0.002		47	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00101		ug/L	0.002		51	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00101		ug/L	0.002		51	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.000923		ug/L	0.002		46	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.000948		ug/L	0.002		47	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.000963		ug/L	0.002		48	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00103		ug/L	0.002		51	22-176			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.000982		ug/L	0.002		49	13-328			

TestAmerica Irvine



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

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

METHOD BLANK/QC DATA

EPA-5 1613Bx

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 342249 Extracted: 12/08/10										
LCS Analyzed: 12/11/2010 (G0L08000	0249C)				Source:					
Surrogate: 13C-2,3,7,8-TCDD	0.000869		ug/L	0.002		44	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.000902		ug/L	0.002		45	22-152			
Surrogate: 13C-OCDD	0.00189		ug/L	0.004		47	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000806		ug/L	0.0008		101	31-191			



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

METHOD BLANK/QC DATA

8642

Analyte Batch: 8642 Extracted: 12/21/10	Result	Reporting Limit	Units	Spike Level	Source Result %R	REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Analyzed: 12/21/2010 (S012154-03) Uranium, Total	56	1	pCi/L	56.5	Source:	99	80-120			
Blank Analyzed: 12/21/2010 (S012154-0 4 Uranium, Total	4) -0.005	1	pCi/L		Source:		-			U
Duplicate Analyzed: 12/21/2010 (S01215 Uranium, Total	4-05) 0.108	1	pCi/L		Source: ITL05 0.093	524-02	2 -	15		Jb

TestAmerica Irvine



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

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

METHOD BLANK/QC DATA

			900							
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8642 Extracted: 12/16/10										
LCS Analyzed: 12/20/2010 (S012154-03)					Source:					
Gross Alpha	41.5	3	pCi/L	40.4		103	70-130			
Gross Beta	34.8	4	pCi/L	35.1		99	70-130			
Blank Analyzed: 12/21/2010 (S012154-04)				Source:					
Gross Alpha	-0.13	3	pCi/L				-			U
Gross Beta	0.133	4	pCi/L				-			U
Duplicate Analyzed: 12/20/2010 (S012154	I-05)				Source: I	ТL0524-0 2	2			
Gross Alpha	0.816	3	pCi/L		0.966		-	17		Jb
Gross Beta	2.12	4	pCi/L		2.02		-	5		Jb

TestAmerica Irvine



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

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

METHOD BLANK/QC DATA

901.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8642 Extracted: 12/16/10										
LCS Analyzed: 12/16/2010 (S012154-03)					Source:					
Cobalt-60	113	10	pCi/L	103		110	80-120			
Cesium-137	122	20	pCi/L	110		111	80-120			
Blank Analyzed: 12/16/2010 (8012154-04	4)				Source:					
Cesium-137	ND	20	pCi/L				-			U
Potassium-40	ND	25	pCi/L				-			U
Duplicate Analyzed: 12/16/2010 (S01215	4-05)				Source: I	TL0524-0	2			
Cesium-137	ND	20	pCi/L		0		-	0		U
Potassium-40	ND	25	pCi/L		0		-	0		U

TestAmerica Irvine



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

METHOD BLANK/QC DATA

903.1

Analyte Batch: 8642 Extracted: 12/29/10	Result	Reporting Limit	Units	Spike Level	Source Result %F	REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Analyzed: 12/29/2010 (S012154-03) Radium-226	55.9	1	pCi/L	55.7	Source:	100	80-120			
Blank Analyzed: 12/29/2010 (S012154-04 Radium-226	4) 0.094	1	pCi/L		Source:		-			U
Duplicate Analyzed: 12/29/2010 (S01215 Radium-226	4-05) 0.219	1	pCi/L		Source: ITL05 0.272	524-02	-	0		U



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

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

METHOD BLANK/QC DATA

			904							
Analyte Batch: 8642 Extracted: 12/21/10	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Analyzed: 12/21/2010 (S012154-03) Radium-228	4.22	1	pCi/L	4.67	Source:	90	60-140			
Blank Analyzed: 12/21/2010 (S012154-04 Radium-228	4) -0.019	1	pCi/L		Source:		-			U
Duplicate Analyzed: 12/21/2010 (S01215 Radium-228	6 4-05) 0.047	1	pCi/L		Source: I 0.111	TL0524-02	-	0		U



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

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

METHOD BLANK/QC DATA

			905							
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8642 Extracted: 12/16/10										
LCS Analyzed: 12/20/2010 (S012154-03)				Source:					
Strontium-90	15.8	2	pCi/L	17.5		90	80-120			
Blank Analyzed: 12/20/2010 (S012154-0	4)				Source:					
Strontium-90	-0.065	2	pCi/L				-			U
Duplicate Analyzed: 12/20/2010 (S0121	54-05)				Source: I	TL0524-0	2			
Strontium-90	0.058	2	pCi/L		0.134		-	0		U



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10

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

Received: 12/06/10

METHOD BLANK/QC DATA

			906							
Analyte Batch: 8642 Extracted: 12/22/10	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Analyzed: 12/22/2010 (S012154-03) Tritium	2180	500	pCi/L	2550	Source:	85	80-120			
Blank Analyzed: 12/22/2010 (S012154-04 Tritium	- 148	500	pCi/L		Source:		-			U
Duplicate Analyzed: 12/22/2010 (S012154 Tritium	4-05) -96.5	500	pCi/L		Source: I ' -10.5	TL0524-02	-	0		U



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 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

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.

						Compliance
LabNumber	Analysis	Analyte	Units	Result	MRL	Limit
ITL0524-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0.095	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
ITL0524-02	Cadmium-200.8	Cadmium	ug/l	0.054	1.0	3.1
ITL0524-02	Chloride - 300.0	Chloride	mg/l	1.30	0.50	150
ITL0524-02	Copper-200.8	Copper	ug/l	3.25	2.00	14
ITL0524-02	Lead-200.8	Lead	ug/l	2.00	1.0	5.2
ITL0524-02	Nitrogen, NO3+NO2 -N EPA	300.0 Nitrate/Nitrite-N	mg/l	0.34	0.26	8
ITL0524-02	Sulfate-300.0	Sulfate	mg/l	2.15	0.50	300
ITL0524-02	TDS - SM2540C	Total Dissolved Solids	mg/l	30	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.

						Compliance
LabNumber	Analysis	Analyte	Units	Result	MRL	Limit



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 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

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 Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
- Jb The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- M2 The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- **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

TestAmerica Irvine



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly 17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 1664A	Water	Х	Х
EPA 200.8-Diss	Water	Х	Х
EPA 200.8	Water	Х	Х
EPA 245.1-Diss	Water	Х	Х
EPA 245.1	Water	Х	Х
EPA 300.0	Water	Х	Х
Filtration	Water	N/A	N/A
SM 2540D	Water	Х	Х
SM2540C	Water	Х	
SM4500CN-E	Water	Х	Х

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

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

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

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec Samples: ITL0524-02

- Analysis Performed: Gross Alpha Samples: ITL0524-02
- Analysis Performed: Gross Beta Samples: ITL0524-02
- Analysis Performed: HOLD Samples: ITL0524-03
- Analysis Performed: Level 4 Data Package Samples: ITL0524-02
- Analysis Performed: Radium, Combined Samples: ITL0524-02
- Analysis Performed: Strontium 90 Samples: ITL0524-02
- Analysis Performed: Tritium Samples: ITL0524-02
- Analysis Performed: Uranium, Combined Samples: ITL0524-02

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THE LEADER IN ENVIRONMENTAL TESTING

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Report Number: ITL0524

Sampled: 12/06/10 Received: 12/06/10

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

TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8642 Samples: ITL0524-02

Method Performed: 900 Samples: ITL0524-02

- Method Performed: 901.1 Samples: ITL0524-02
- Method Performed: 903.1 Samples: ITL0524-02
- Method Performed: 904 Samples: ITL0524-02
- Method Performed: 905 Samples: ITL0524-02
- Method Performed: 906 Samples: ITL0524-02

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

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B Samples: ITL0524-02, ITL0524-02RE

TestAmerica Irvine

Test America version ø/29/09 → ∓(19110

ITL0524

Client Name//				Project:											ANALYSIS F	REQUIRED
MWH-Arcad 618 Michillind Arcadia, CA Test America	la Ave, Su 91007		on	Boeing-SSFL N Routine Outfal GRAB Stormwater at S	009		(/									Field readings: (Log in and include in report Temp and pH) Temp °F = $7.7 \stackrel{\frown}{=} \frac{49}{5}$
Project Manas Sampler: ¢ ; ^{Sample}				Phone Number (626) 568-6691 Fax Number: (626) 568-6515 Sampling			& Grease (1664-HEM)									pH = 7.9 Time of readings = 07.40
Description	Matrix	Type	# of Cont.		Preservative	Bottle #	ō						-			Comments
Outfall 009		1L Amber	2	07:40	HCI	1A, 1B	×									
				r												
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		These			Dention of	Quittal! 000										to be added to this work order.
Relinquished By	7	Da 12-6-	ate/Tim 20/0	e:		Received By			rin ev	Date/	ime: tY		10 72-0)	Turn-around time: (Chec 24 Hour:	72 Hour: 10 Day
Relinquiched By	K	-h		12/4/10	1910	Received By	\geq			Date/Ti	ime:				48 Hour: Sample Integrity: (Check Intact:	5 Day: Normal: _X
Relinquished By		Da	ate/Tim	e: ' (/	Received By				Date/Ti		(0	(A',	10	Data Requirements: (Chr	eck) All Level IV: NPDES Level IV:

#401

CHAIN OF CUSTODY FORM

													1	Zv	1							
Client Name/A	ddress:			Project:			<u> </u>	•					-+			YSIS BE	QUIRE)			•	٦
MWH-Arcac 618 Michillinda Arcadia, CA 9 Test America (a Ave, Su 1007		n	Boeing-SSFL Routine Outf COMPOSITE Stormwater at	all 009 MiGiH		letals: Sb, Cd, Cu, Pb,	eners)	7		als: Sb, Cd, Cu, Pb,	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)									Comments	-
Project Manag Sampler:	•			Phone Numbe (626) 568-669 Fax Number: (626) 568-651 Sampling	5		Total Recoverable Metals: Hg, TI	TCDD (and all congeners)	CI', SO4, NO3+NO2-N	S, TSS	Total Dissolved Metals: Sb, Hg, Ti	ium (H-3) (900.0), ium (H-3) (906.0) mbined Radium 2 dium 228 (904.0) CS-137 (901.0 o	Cristian Parts	Cyanide								
Description	Matrix	Container Type		Date/Time	Preservative	Bottle #	+ -	1 D	ō	TDS,	Hg.	0 H C H G	đ	Š						_		1
Outfall 009	w	1L Poly	1	12-6-701		2A	×															_
Outfall 009 Dup	w	1L Poly	1	\vdash	HNO ₃	2B	X	<u> </u>														-
Outfall 009	w	1L Amber	2		None	3A, 3B		×		<u> </u>				<u> </u>								_
Outfall 009	w	500 mL Poly	2		None	4A, 4B			X					1		ļ		_ _		_		4
Outfall 009	w	500 mL Poly	1	\downarrow /	None	5				×			 	<u> </u>	ļ							4
Outfall 009	w	1L Poly	1	*	None	6	_				X		₩								Filter w/in 24hrs of receipt at lab	-
Outfall 009	w	2.5 Gal Cube 500 mL Amber	1	106-201	None None	7A 7B						x	╟								Unfiltered and unpreserved analysis	
-Outfell-000	₩.	1 Gal Poly		03.																	Only test if first or second rain	- 52
				12-6-261									<u> </u>				+ -				events of the year	
Outfall 009		500 mL Poly			NaOH	9								×								-
													Ι				1]
						COC Page	2 of/2	ist the	Com	posit	e Samp	hes for Outfall (009 fo	or this	storm	event.]
				-	These mus		d to the	same	work			OC Page 1 of 2	for O	utfall				t				_
Relinquished By	R_		2 - 6	-2010	26 (Received B	Y			Date/		12/6/1	o ra	IZÓ	24 Hour 48 Hour	ound time: (Спеск)	72 Hour: _ 5 Day:			10 Day: Normal: _ X'	
Relinquished By		\mathcal{H}	/Time:	12/6/1	01910	Received By	- (Date/	Time:				Intact:		On Ice: _	<u>×</u>	3	. (
					•		2	1	0	\mathcal{F}	12	2(6115	P1	\mathbb{U}	Data Re No Leve	quirements	: (Check) 	All Level IV	/:			

#401





NELAP - RECOGNIZED

CALIFORNIA STATE

ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM BRANCH

CERTIFICATE OF NELAP ACCREDITATION

Is hereby granted to

TESTAMERICA IRVINE

IRVINE

17461 DERIAN AVENUE, SUITE 100

IRVINE, CA 92614

Scope of the Certificate is limited to the "NELAP Fields of Accreditation" which accompany this Certificate.

Continued accredited status depends on successful ongoing participation in the program.

This Certificate is granted in accordance with provisions of Section 100825, et seq. of the Health and Safety Code.

- Certificate No.: 01108CA
- Expiration Date: 1/31/2011
- Effective Date: 2/1/2010

George C.

Richmond, California subject to forfeiture or revocation

George C. Kulasingam, Ph.D., Chief Environmental Laboratory Accreditation Program Branch



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 7, 2010

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

Reference: Test America-Irvine ITL0524 Eberline Analytical Report S012154-8642 Sample Delivery Group 8642

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Job No. ITL0524. The sample was received on December 8, 2010.

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

Sincerely,

2 Vinle

N. Joseph Verville Client Services Manager

NJV/ljb

Enclosure: Level IV CLP-like Data Package CD

Case Narrative, page 1

January 7, 2010

1.0 General Comments

Sample delivery group 8642 consists of the analytical results and supporting documentation for one water sample. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The sample was 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 sample as received i.e. the sample was 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 volume.

2.0 Quality Control

Quality Control Samples consisted of laboratory control samples (LCS), method blanks, duplicate analyses and matrix spike 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 2^{σ} 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%

Case Narrative, page 2

January 7, 2010

4.0 **Analysis Notes**

- Gross Alpha/Gross Beta Analysis No problems were encountered during 4.1 the processing of the samples. All quality control sample results were within required control limits.
- Tritium Analysis No problems were encountered during the processing of the 4.2 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.
- Radium-226 Analysis No problems were encountered during the processing of 4.4 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
- Total Uranium Analysis No problems were encountered during the processing 4.6 of the samples. All quality control sample results were within required control limits.
- Gamma Spectroscopy The K-40 MDA for the QC blank sample was 28.4 4.7 pCi/L, greater than the required detection limit of 25 pCi/L. No other problems were encountered during the processing of the samples. All other quality control sample results were within required control limits.

Case Narrative Certification Statement 5.0

"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."

N. Joseph Verville **Client Services Manager**

ון *ד*ון Date

EBERLINE ANALYTICAL SDG 8642

SDG	86	42	
Contact		Joseph	

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

SUMMARY DATA SECTION

TABLE OF	со	N T	EN	ΤS	
About this section	•	•	•	٠	1
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Work Summary	•	•	٠	•	6
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Prepared by

Reviewed by

Lab id	EAS
Protocol	
Version	<u>Ver 1.0</u>
Form	DVD-TOC
Version	3.06
Report date	01/06/11

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SDG 8642

SDG	86	42	
Contact	<u>N.</u>	Joseph	Verville

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

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

REPORT GUIDES Page 1 SUMMARY DATA SECTION Page 1

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	01/06/11

SDG 8642

SDG	864	42	
Contact	<u>N.</u>	Joseph	Verville

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

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	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	01/06/11

REPORT GUIDES Page 2 SUMMARY DATA SECTION Page 2

SDG 8642

SDG <u>8642</u>

Contact N. Joseph Verville

LAB SAMPLE SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S012154-01	ITL0524-02	Boeing-SSFL	WATER			ITL0524	12/06/10 03:11
S012154-03	Lab Control Sample		WATER				
S012154-04	Method Blank		WATER				
S012154-05	Duplicate (S012154-01)	Boeing-SSFL	WATER				12/06/10 03:11

LAB SUMMARY Page 1 SUMMARY DATA SECTION Page 3

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LS
Version	3.06
Report date	01/06/11

	G <u>8642</u> t N. Joseph Ve	erville	SDG 8642 QC SUMM					lient <u>Test Amer</u> tract <u>ITL0524</u>	ica, Inc
QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	۶ MOIST	SAMPLE	BASIS AMOUNT	DAYS SI	NCE LAB OLL SAMPLE ID	DEPARTMENT SAMPLE ID
8642	ITL0524	ITL0524-02	WATER		10.0 L	· · · · · · · · · · · · · · · · · · ·	12/08/10	2 S012154-01	8642-001
		Method Blank Lab Control Sample	WATER WATER					S012154-04 S012154-03	8642-004 8642-003

WATER

Duplicate (S012154-01)

EBERLINE ANALYTICAL

12/08/10 2 S012154-05 8642-005

10.0 L

QC SUMMARY Page 1 SUMMARY DATA SECTION Page 4

Lab id	EAS
Protocol	<u>TA</u>
Version	Ver 1.0
Form	DVD-QS
Version	3.06
Report date	01/06/11

SDG 8642

SDG <u>8642</u>

Contact N. Joseph Verville

PREP BATCH SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

			PREPARATION	ERROR			- PLANCHETS ANALYZED				QUALI-
TEST	MATRIX	METHOD	BATCH	20 ¥	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG MS/ORIG	FIERS
Beta	Counting										
AC	WATER	Radium-228 in Water	7258-151	10.4	1			1	1	1/1	
SR	WATER	Strontium-90 in Water	7258-151	10.4	1			1	1	1/1	
Gas F	proportiona	al Counting									
80A	WATER	Gross Alpha in Water	7258-151	20.6	1			1	1	1/1	
80B	WATER	Gross Beta in Water	7258-151	11.0	1			1	1	1/1	
Gamma	a Spectroso	сору									
GAM	WATER	Gamma Emitters in Water	7258-151	7.0	1			1	l	1/1	
Kinet	ic Phospho	primetry, ug									
U_T	WATER	Uranium, Total	7258-151		1			1	1	1/1	
Liqui	d Scintill	Lation Counting									
н	WATER	Tritium in Water	7258-151	10.0	1			1	1	1/1	
Rador	n Counting										
RA	WATER	Radium-226 in Water	7258-151	16.4	1			1	1	1/1	

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.

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

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-PBS
Version	3.06
Report date	01/06/11

PREP BATCH SUMMARY Page 1 SUMMARY DATA SECTION Page 5

SDG 8642

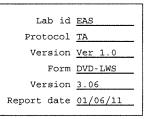
SDG	864	12	
Contact	<u>N.</u>	Joseph	<u>Verville</u>

LAB WORK SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

LAB SAMPLE	CLIENT SAMPLE ID	MATRIX			SUF-				
COLLECTED	CUSTODY SAS no	MAIRIX	PLANCHET	TEST		ANALYZED	REVIEWED	ВҮ	METHOD
S012154-01	ITL0524-02		8642-001	80A/80		12/17/10	12/20/10	BW	Gross Alpha in Water
12/06/10	Boeing-SSFL	WATER	8642-001	80B/80		12/17/10	12/20/10	BW	Gross Beta in Water
12/08/10	ITL0524		8642-001	AC		12/21/10	12/23/10	BW	Radium-228 in Water
			8642-001	GAM		12/16/10	12/20/10	MWT	Gamma Emitters in Water
			8642-001	Н		12/22/10	01/05/11	BW	Tritium in Water
			8642-001	RA		12/29/10	12/30/10	BW	Radium-226 in Water
			8642-001	SR		12/20/10	12/30/11	BW	Strontium-90 in Water
			8642-001	U_T		12/21/10	12/22/10	MWT	Uranium, Total
S012154-03	Lab Control Sample		8642-003	80A/80		12/20/10	12/20/10	BW	Gross Alpha in Water
		WATER	8642-003	80B/80		12/20/10	12/20/10	BW	Gross Beta in Water
			8642-003	AC		12/21/10	12/23/10	BW	Radium-228 in Water
			8642-003	GAM		12/16/10	12/20/10	MWT	Gamma Emitters in Water
			8642-003	н		12/22/10	01/05/11	BW	Tritium in Water
			8642-003	RA		12/29/10	12/30/10	BW	Radium-226 in Water
			8642-003	SR		12/20/10	12/30/11	BW	Strontium-90 in Water
			8642-003	U_T		12/21/10	12/22/10	MWT	Uranium, Total
S012154-04	Method Blank		8642-004	80A/80		12/21/10	12/20/10	BW	Gross Alpha in Water
		WATER	8642-004	80B/80		12/21/10	12/20/10	BW	Gross Beta in Water
			8642-004	AC		12/21/10	12/23/10	BW	Radium-228 in Water
			8642-004	GAM		12/16/10	12/20/10	MWT	Gamma Emitters in Water
			8642-004	н		12/22/10	01/05/11	BW	Tritium in Water
			8642-004	RA		12/29/10	12/30/10	BW	Radium-226 in Water
			8642-004	SR		12/20/10	12/30/11	BW	Strontium-90 in Water
			8642-004	U_T		12/21/10	12/22/10	MWT	Uranium, Total
S012154-05	Duplicate (S012154-01)		8642-005	80A/80		12/20/10	12/20/10	BW	Gross Alpha in Water
12/06/10	Boeing-SSFL	WATER	8642-005	80B/80		12/20/10	12/20/10	BW	Gross Beta in Water
12/08/10			8642-005	AC		12/21/10	12/23/10	BW	Radium-228 in Water
			8642-005	GAM		12/16/10	12/20/10	MWT	Gamma Emitters in Water
			8642-005	н		12/22/10	01/05/11	BW	Tritium in Water
			8642-005	RA		12/29/10	12/30/10	BW	Radium-226 in Water
			8642-005	SR		12/20/10	12/30/11	BW	Strontium-90 in Water
			8642-005	U_T		12/21/10	12/22/10	MWT	Uranium, Total

WORK SUMMARY Page 1 SUMMARY DATA SECTION Page 6



SDG 8642

SDG <u>8642</u> Contact <u>N. Joseph Verville</u>

WORK SUMMARY, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

TEST	SAS no	COUNTS METHOD	OF TESTS REFERENCE	ВҮ	SAMPLE TYPE CLIENT MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
80A/80		Gross Alpha in Water	900.0		· 1		1	1	1	4
80B/80		Gross Beta in Water	900.0		1		l	1	1	4
AC		Radium-228 in Water	904.0		1		1	1	1	4
GAM		Gamma Emitters in Water	901.1		1		1	1	1	4
н		Tritium in Water	906.0		1		1	1	1	4
RA		Radium-226 in Water	903.1		1		1	1	l	4
SR		Strontium-90 in Water	905.0		1		1	1	1	4
U_T		Uranium, Total	D5174		1		1	1	1	4
TOTALS					8		8	8	8	32

WORK SUMMARY Page 2 SUMMARY DATA SECTION Page 7

Lab id <u>EAS</u> Protocol TA Version Ver 1.0 Form DVD-LWS Version 3.06 Report date 01/06/11

SDG 8642

8642-004

METHOD BLANK

Method Blank

	8642 N. Joseph Verville	Client Contract	Test America, Inc. ITL0524	
ab sample id ot sample id		Client sample id Material/Matrix		WATER

ANALYTE	CAS NO	RESULT pCi/L	20 ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	-0.130	0.26	0.604	3.00	U	80A
Gross Beta	12587472	0.133	0.65	1.12	4.00	U	80B
Tritium	10028178	-148	210	372	500	U	н
Radium-226	13982633	0.094	0.27	0.474	1.00	U	RA
Radium-228	15262201	-0.019	0.18	0.408	1.00	U	AC
Strontium-90	10098972	-0.065	0.26	0.556	2.00	U	SR
Uranium, Total		-0.005	0.008	0.019	1.00	U	UΤ
Potassium-40	13966002	U		28.4	25.0	U	GAM
Cesium-137	10045973	U		1.40	20.0	υ	GAM

QC-BLANK #76427

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-DS
Version	3.06
Report date	01/06/11

METHOD BLANKS Page 1 SUMMARY DATA SECTION Page 8

SDG 8642

8642-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>8642</u>

Contact N. Joseph Verville

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

Client sample id <u>Lab Control Sample</u>

Material/Matrix ______ WATER

Lab sample id <u>S012154-03</u> Dept sample id <u>8642-003</u>

ANALYTE	RESULT pCi/L	20 ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED pCi/L	20 ERR pCi/L	REC %	20 LMTS (TOTAL)	PROTOCOI LIMITS
						1					
Gross Alpha	41.5	2.4	0.635	3.00		80A	40.4	1.6	103	78-122	70-130
Gross Beta	34.8	1.4	1.05	4.00		80B	35.1	1.4	99	88-112	70-130
Tritium	2180	300	353	500		н	2550	100	85	85-115	80-120
Radium-226	55.9	1.8	0.438	1.00		RA	55.7	2.2	100	83-117	80-120
Radium-228	4.22	0.29	0.398	1.00		AC	4.67	0.19	90	88-112	60-140
Strontium-90	15.8	1.5	0.915	2.00		SR	17.5	0.70	90	87-113	80-120
Uranium, Total	56.0	6.4	0.194	1.00		U_T	56.5	2.3	99	88-112	80-120
Cobalt-60	113	4.7	2.48	10.0		GAM	103	4.1	110	90-110	80-120
Cesium-137	122	4.1	2.90	20.0		GAM	110	4.4	111	90-110	80-120

QC-LCS #76426

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>01/06/11</u>

LAB CONTROL SAMPLES Page 1 SUMMARY DATA SECTION Page 9

SDG 8642

8642-005

ITL0524-02

DUPLICATE

	8642 N. Joseph Verville			Client Contract	<u>Test America, Inc.</u> ITL0524	
	DUPLICATE		ORIGINAL			
Lab sample id	<u>S012154-05</u>	Lab sample id	<u>S012154-01</u>	Client sample id	ITL0524-02	
Dept sample id	8642-005	Dept sample id	8642-001	Location/Matrix	Boeing-SSFL	WATER
		Received	12/08/10	Collected/Volume	<u>12/06/10 03:11 10.0 L</u>	-
				Chain of custody id	ITL0524	

ANALYTE	DUPLICATE pCi/L	20 ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	20 ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	3о тот	DER σ
Gross Alpha	0.816	0.27	0.340	3.00	J	80A	0.966	0.29	0.282	J	17	80	0.6
Gross Beta	2.12	0.53	0.763	4.00	J	80B	2.02	0.58	0.888	J	5	62	0.2
Tritium	-96.5	210	362	500	U	н	-10.5	210	356	U	-		0.6
Radium-226	0.219	0.28	0.462	1.00	U	RA	0.272	0.28	0.456	U	-		0.3
Radium-228	0.047	0.24	0.491	1.00	U	AC	0.111	0.20	0.442	U	-		0.4
Strontium-90	0.058	0.35	0.707	2.00	U	SR	0.134	0.32	0.680	U	-		0.3
Uranium, Total	0.108	0.015	0.019	1.00	J	U_T	0.093	0.013	0.019	J	15	30	1.5
Potassium-40	U		21.5	25.0	U	GAM	U		14.8	U	-		0.5
Cesium-137	υ		1.31	20.0	U	GAM	υ		1.24	U	-		0.1

QC-DUP#1 76428

DUPLICATES Page 1 SUMMARY DATA SECTION Page 10 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-DUP</u> Version <u>3.06</u> Report date <u>01/06/11</u>

SDG 8642

8642-001

DATA SHEET

ITL0524-02

	8642	_ Client	<u>Test America, Inc.</u>
	N. Joseph Verville	_ Contract	ITL0524
Lab sample id Dept sample id Received	8642-001 12/08/10	Client sample id Location/Matrix Collected/Volume hain of custody id	Boeing-SSFL WATER 12/06/10 03:11 10.0 L

ANALYTE	CAS NO	RESULT pCi/L	20 ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.966	0.29	0.282	3.00	J	80A
Gross Beta	12587472	2.02	0.58	0.888	4.00	J	80B
Tritium	10028178	-10.5	210	356	500	U	н
Radium-226	13982633	0.272	0.28	0.456	1.00	U	RA
Radium-228	15262201	0.111	0.20	0.442	1.00	U	AC
Strontium-90	10098972	0.134	0.32	0.680	2.00	U	SR
Uranium, Total		0.093	0.013	0.019	1.00	J	UΤ
Potassium-40	13966002	U		14.8	25.0	U	GAM
Cesium-137	10045973	U		1.24	20.0	U	GAM

Lab id	EAS
Protocol	ТА
Version	<u>Ver 1.0</u>
Form	DVD-DS
Version	3.06
Report date	01/06/11

DATA SHEETS Page 1 SUMMARY DATA SECTION Page 11

SDG 8642

Test	AC Matrix WATER
SDG	8642
Contact	N. Joseph Verville

LAB METHOD SUMMARY RADIUM-228 IN WATER

BETA COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX PLANCHET	CLIENT SAMPLE ID	Radium-228	
Preparation	batch 7258-151	<u></u>		
- S012154-01	8642-001	ITL0524-02	U	
S012154-03	8642-003	Lab Control Sample	ok	
S012154-04	8642-004	Method Blank	υ	
S012154-05	8642-005	Duplicate (S012154-01)	- U	
	8642-005			

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF ¥	COUNT min			PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7258-151 20 prep error 1	.0.4 % Ref	erence	Lab N	lotebool	k No. '	7258	pg. 15	51				
S012154-01	ITL0524-02	0.442	1.80			78		150		15	12/21/10	12/21	GRB-221
S012154-03	Lab Control Sample	0.398	1.80			81		150			12/21/10	12/21	GRB-222
S012154-04	Method Blank	0.408	1.80			82		150			12/21/10	12/21	GRB-223
S012154-05	Duplicate (S012154-01)	0.491	1.80			83		150		15	12/21/10	12/21	GRB-224
Nominal val	ues and limits from method	1.00	1.80			30-10	5	50		 180			

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

AVERAGES ± 2 SD	MDA	0.435	±	0.084
FOR 4 SAMPLES	YIELD	81	±	4

Lab id	EAS				
Protocol	TA				
Version	Ver 1.0				
Form	DVD-LMS				
Version	3.06				
Report date	01/06/11				

METHOD SUMMARIES Page 1 SUMMARY DATA SECTION Page 12

SDG 8642

Test	SR Matrix WATER
SDG	8642
Contact	N. Joseph Verville

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER BETA COUNTING Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

RESULTS

LAB	RAW SUF-									
SAMPLE ID	TEST FIX PLANCHET	CLIENT SAMPLE ID	Strontium-90							
Preparation batch 7258-151										
S012154-01	8642-001	ITL0524-02	υ							
S012154-03	8642-003	Lab Control Sample	ok							
S012154-04	8642-004	Method Blank	υ							
S012154-05	8642-005	Duplicate (S012154-01)	- U							
		· ·								
Nominal val	lues and limits from m	ethod RDLs (pCi/L)	2.00							

METHOD PERFORMANCE

LAB	RAW SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX CLIENT SAMPLE ID	pCi/L	L	FAC	TION	울	ale	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation	batch 7258-151 20 prep error 10	0.4 % Re	ference	Lab N	lotebool	c No.	7258	pg. 15	51					
S012154-01	ITL0524-02	0.680	0.500			84		61			14	12/16/10	12/20	GRB-228
S012154-03	Lab Control Sample	0.915	0.500			56		55				12/16/10	12/20	GRB-225
S012154-04	Method Blank	0.556	0.500			88		100				12/16/10	12/20	GRB-202
S012154-05	Duplicate (S012154-01)	0.707	0.500			68		100			14	12/16/10	12/20	GRB-203
Nominal val	ues and limits from method	2.00	0.500			30-10	5	50			180			

PROCEDURES	REFERENCE	905.0	AVERAGES ± 2 SD	MDA <u>0.714</u> ± <u>0.298</u>
	DWP-380	Strontium in Drinking Water, rev 8	FOR 4 SAMPLES	YIELD ±30

Lab id	EAS			
Protocol	<u>TA</u>			
Version	<u>Ver 1.0</u>			
Form	DVD-LMS			
Version	3.06			
Report date	01/06/11			

METHOD SUMMARIES Page 2 SUMMARY DATA SECTION Page 13

SDG 8642

Test <u>80A</u> Matrix <u>WATER</u> SDG <u>8642</u> Contact <u>N. Joseph Verville</u>

LAB METHOD SUMMARY

GROSS ALPHA IN WATER GAS PROPORTIONAL COUNTING Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
Preparation	batch 725	8-151		
S012154-01	80	8642-001	ITL0524-02	0.966 J
S012154-03	80	8642-003	Lab Control Sample	ok
S012154-04	80	8642-004	Method Blank	U
S012154-05	80	8642-005	Duplicate (S012154-01)	ok J

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC		RESID mq	EFF %	COUNT min		DRIFT KeV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 725	8-151 2σ prep error 2	0.6 % Re	ference	Lab N	lotebool	¢No.'	7258	pg. 15	51					
S012154-01	80	ITL0524-02	0.282	0.300			8		400			11	12/16/10	12/17	GRB-216
S012154-03	80	Lab Control Sample	0.635	0.250			58		400				12/16/10	12/20	GRB~101
S012154-04	80	Method Blank	0.604	0.250			59		400				12/16/10	12/21	GRB-216
S012154-05	80	Duplicate (S012154-01)	0.340	0.300			8		400			14	12/16/10	12/20	GRB-104
Nominal val	ues and li	nits from method	3.00	0.250			0-20	0	100			180			

PROCEDURES	REFERENCE	900.0		AVERAGES
	DWP-121	Gross Alpha and Gross Beta in Drinking Water,		FOR 4 SAM
		rev 10		L
			i i	

AVERAGES ± 2 SD	MDA	0.465	±	0.360
FOR 4 SAMPLES	RESIDUE		±	58

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	01/06/11

METHOD SUMMARIES Page 3 SUMMARY DATA SECTION Page 14

SDG 8642

Test	80B Matrix WATER
SDG	8642
Contact	N. Joseph Verville

LAB METHOD SUMMARY

GROSS BETA IN WATER GAS PROPORTIONAL COUNTING Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

RESULTS

LAB SAMPLE ID	RAW SUF		CLIENT SAMPLE ID	Gross Beta	
Preparation	batch 72	58-151			
S012154-01	80	8642-001	ITL0524-02	2.02 J	
S012154-03	80	8642-003	Lab Control Sample	ok	
S012154-04	80	8642-004	Method Blank	U	
S012154-05	80	8642-005	Duplicate (S012154-01)	ok J	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX		MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	RESID mg	EFF %				PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 725	8-151 20 prep error 1	1.0 % Re	ference	Lab N	loteboo	k No. '	7258	pg. 15	51				
S012154-01	80	ITL0524-02	0.888	0.300			8		400		11	12/16/10	12/17	GRB-216
S012154-03	80	Lab Control Sample	1.05	0.250			58		400			12/16/10	12/20	GRB-101
S012154-04	80	Method Blank	1.12	0.250			59		400			12/16/10	12/21	GRB-216
S012154-05	80	Duplicate (S012154-01)	0.763	0.300			8		400		14	12/16/10	12/20	GRB-104
Nominal val	ues and li	mits from method	4.00	0.250		-	0-20	0	100		180			

PROCEDURES	REFERENCE	900.0	AVERAGES ± 2 SD	MDA <u>0.955</u> ± <u>0.322</u>
	DWP-121	Gross Alpha and Gross Beta in Drinking Water,	FOR 4 SAMPLES	RESIDUE <u>33</u> ± <u>58</u>
		rev 10		

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Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	01/06/11

METHOD SUMMARIES Page 4 SUMMARY DATA SECTION Page 15

SDG 8642

Test <u>GAM</u> Matrix <u>WATER</u> SDG <u>8642</u> Contact <u>N. Joseph Verville</u>

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER GAMMA SPECTROSCOPY Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137	
Preparation	n batch 7258-151				
S012154-01	8642-001	ITL0524-02		υ	
S012154-03	8642-003	Lab Control Sample	ok	ok	
S012154-04	8642-004	Method Blank		υ	
S012154-05	8642-005	Duplicate (S012154-01)		- U	
Nominal val	lues and limits from m	ethod RDLs (pCi/L)	10.0	20.0	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV		PREPARED	ANAL- YZED	DETECTOR
			c		1 1		2050					····		
Preparation	batch 7258-151 20 prep error 7	.0 % Re:	ference	Lab N	lotebool	K NO.	7258	pg. 15	1					
S012154-01	ITL0524-02		2.00					616			10	12/16/10	12/16	MB,08,00
S012154-03	Lab Control Sample		2.00					616				12/16/10	12/16	01,01,00
S012154-04	Method Blank		2.00					616				12/16/10	12/16	01,02,00
S012154-05	Duplicate (S012154-01)		2.00					616			10	12/16/10	12/16	01,04,00
Nominal val	ues and limits from method	6.00	2.00					400			180		<u>,</u>	

1		
PROCEDURES	REFERENCE	901.1
	DWP-100	Preparation of Drinking Water Samples for Gamma
		Spectroscopy, rev 5

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	01/06/11

METHOD SUMMARIES Page 5 SUMMARY DATA SECTION Page 16

SDG 8642

Test <u>U T</u> Matrix <u>WATER</u> SDG <u>8642</u> Contact <u>N. Joseph Verville</u>

LAB METHOD SUMMARY

URANIUM, TOTAL KINETIC PHOSPHORIMETRY, UG Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

RESULTS

SAMPLE ID TEST F	IX PLANCHET		
	IN I HAVOIDI	CLIENT SAMPLE ID	Total
Preparation batch	7258-151		
S012154-01	8642-001	ITL0524-02	0.093 J
S012154-03	8642-003	Lab Control Sample	ok
S012154-04	8642-004	Method Blank	σ
S012154-05	8642-005	Duplicate (S012154-01)	ok J

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %			FWHM keV	 	PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7258-151 20 prep error	Ref	erence	Lab N	otebool	k No. '	7258	pg. 19	51				
S012154-01	ITL0524-02	0.019 0	0.0200							15	12/21/10	12/21	KPA-001
S012154-03	Lab Control Sample	0.194 0	0.0200								12/21/10	12/21	KPA-001
S012154-04	Method Blank	0.019 0	0.0200								12/21/10	12/21	KPA-001
S012154-05	Duplicate (S012154-01)	0.019 0	0.0200							15	12/21/10	12/21	KPA-001
Nominal val	ues and limits from method	1.00 0).0200							 180			

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD	MDA 0.063 ± 0.175
FOR 4 SAMPLES	YIELD ±

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	01/06/11

METHOD SUMMARIES Page 6 SUMMARY DATA SECTION Page 17

SDG 8642

Test	H Matrix WATER
SDG	8642
Contact	N. Joseph Verville

LAB METHOD SUMMARY

TRITIUM IN WATER

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Trit	ium
Preparation	batch 725	8-151			
S012154-01		8642-001	ITL0524-02	U	
S012154-03		8642-003	Lab Control Sample	ok	
S012154-04		8642-004	Method Blank	υ	
S012154-05		8642-005	Duplicate (S012154-01)	-	υ

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD					PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7258-151 20 prep error	10.0 %	Reference	Lab N	lotebool	c No. '	7258	pg. 19	51				
S012154-01	ITL0524-02	356	0.0100			100		50		16	12/22/10	12/22	LSC-006
S012154-03	Lab Control Sample	353	0.100			10		<u> </u>			12/22/10	12/22	LSC-006
S012154-04	Method Blank	372	0.100			10		50			12/22/10	12/22	LSC-006
S012154-05	Duplicate (S012154-01)	362	0.0100			100		50		16	12/22/10	12/22	LSC-006
Nominal val	ues and limits from method	500	0.0100					100		 180	919		

PROCEDURES	REFERENCE	906.0	AVERAGES ± 2 SD
	DWP-212	Tritium in Drinking Water by Distillation, rev 8	FOR 4 SAMPLES

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	01/06/11

MDA <u>361</u> ± <u>16.8</u> YIELD <u>55</u> ± <u>104</u>

METHOD SUMMARIES Page 7 SUMMARY DATA SECTION Page 18

SDG 8642

Test	RA Matrix WATER
SDG	8642
Contact	N. Joseph Verville

LAB METHOD SUMMARY

RADIUM-226 IN WATER RADON COUNTING Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX PLANCHET	CLIENT SAMPLE ID	Radium-226	
Preparation	n batch 7258-151			
S012154-01	8642-001	ITL0524-02	υ	
S012154-03	8642-003	Lab Control Sample	ok	
S012154-04	8642-004	Method Blank	U	
S012154-05	8642-005	Duplicate (S012154-01)	- U	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC		YIELD %		COUNT min	FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7258-151 20 prep error 1	6.4 % Re	ference	Lab N	lotebool	k No. '	7258	pg. 19	51				
S012154-01	ITL0524-02	0.456	0.100			100		160		23	12/29/10	12/29	RN-013
S012154-03	Lab Control Sample	0.438	0.100			100		160			12/29/10	12/29	RN-012
S012154-04	Method Blank	0.474	0.100			100		160			12/29/10	12/29	RN-015
S012154-05	Duplicate (S012154-01)	0.462	0.100			100		160		23	12/29/10	12/29	RN-014
Nominal val	ues and limits from method	1.00	0.100					100		 180			

PROCEDURES REFEI	RENCE 903.1	AVERAGES ± 2 S	D MDA 0.458 ± 0.030
DWP-4	381A Ra-226 Screening in Drinking Water, rev	7 6 FOR 4 SAMPLES	YIELD <u>100</u> ± <u>0</u>

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	01/06/11

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SDG 8642

SDG <u>8642</u> Contact <u>N. Joseph Verville</u>

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

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	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	01/06/11

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SDG 8642

SDG	86	42	
Contact	<u>N.</u>	Joseph	Verville

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

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.

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	01/06/11

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SDG 8642

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REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

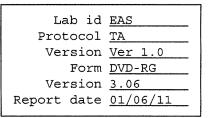
WORK SUMMARY

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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REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

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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Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	01/06/11

SDG 8642

SDG	8642		
Contact	N.	Joseph	Verville

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

DATA SHEET

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J	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
в	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.
н	Similar to 'L' except the recovery was high.
₽	The RESULT is 'preliminary'.
х	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.
Th	e 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

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>01/06/11</u>

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SDG 8642

SDG <u>8642</u> Contact <u>N. Joseph Verville</u>

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

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.

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	01/06/11

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SDG 8642

SDG <u>8642</u> Contact <u>N. Joseph Verville</u>

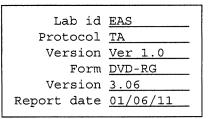
REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

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.

REPORT GUIDES Page 7 **SUMMARY DATA SECTION** Page 26



EBERLINE ANALYTI	ΙΖΑΙ	L
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SDG	8642

SDG <u>8642</u> Contact <u>N. Joseph Verville</u>

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

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DUPLICATE

 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 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: A fixed percentage specified in the protocol. 		The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.			
 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 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: 	The	e following notes apply to this report:			
<pre>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 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:</pre>	*	usage. This applies both to the Duplicate and Original sample			
<pre>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: </pre>					
 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: 	*	the difference of the RESULTs divided by their average expressed			
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<pre>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:</pre>		data for only one, the MDA from the sample with data is used as			
<pre>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:</pre>	*	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			
* The second limit for the RPD is the larger of:					
		This value reported for this limit is at most 999.			
1. A fixed percentage specified in the protocol.	*	The second limit for the RPD is the larger of:			
		1. A fixed percentage specified in the protocol.			

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-RG</u>
Version <u>3.06</u>
Report date <u>01/06/11</u>

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GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

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	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	01/06/11

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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.

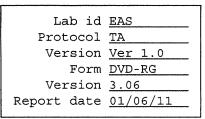
An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * 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.

Lab id EAS Protocol TA Version Ver 1.0 Form DVD-RG Version 3.06 Report date 01/06/11

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REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

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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Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	01/06/11

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SDG	864	42	
Contact	N.	Joseph	Verville

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

METHOD SUMMARY

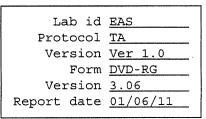
correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- * 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

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GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

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.

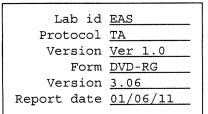
Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

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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GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>

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 <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>01/06/11</u>

REPORT GUIDES Page 15 SUMMARY DATA SECTION Page 34

SUBCONTRACT ORDER TestAmerica Irvine

ITL0524

8642

SENDING LABORATORY:	RECEIVING LABORATORY:
TestAmerica Irvine	Eberline Services
17461 Derian Avenue. Suite 100	2030 Wright Avenue
Irvine, CA 92614	Richmond, CA 94804
Phone: (949) 261-1022	Phone :(510) 235-2633
Fax: (949) 260-3297	Fax: (510) 235-0438
Project Manager: Debby Wilson	Project Location: CA - CALIFORNIA
	Receipt Temperature:°C Ice: Y / N

Analysis	Units	Due	Expires	Comments
ample ID: ITL0524-02 (Outf	all 009 (Co	mp) - Water)	Sampled: 12/06/10 0	3:11
Gamma Spec-O	mg/kg	12/13/10	12/06/11 03:11	Out Eberline, k-40 and cs-137 only, De NOT FILTER!
Gross Alpha-O	pCi/L	12/13/10	06/04/11 03:11	Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	12/13/10	06/04/11 03:11	Out Eberline Boeing permit, DO NOT FILTER!
Level 4 Data Package - Out	N/A	12/13/10	01/03/11 03:11	
Radium, Combined-O	pCi/L	12/13/10	12/06/11 03:11	Out Eberline Boeing permit, DO NOT FILTER!
Strontium 90-0	pCi/L	12/13/10	12/06/11 03:11	Out Eberline, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	12/13/10	12/06/11 03:11	Out Eberline, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	12/13/10	12/06/11 03:11	Out Eberline, Boeing permit, DO NOT FILTER!
Containers Supplied: 2.5 gal Poly (H) HNO3 5	00 mL Am	ber (I)		
Sample ID: ITL0524-03 (Trip	Blank - Wa	ter)	Sampled: 12/06/10 03	3:11 PRES. W/HNO3
HOLD	N/A	12/13/10	12/06/11 03:11	
Containers Supplied: 2.5 gal Poly (A) HNO3				

Released

1217/10

Date/Time

Released By

Date/Time

1700 Fed-EX 12/7/10 Date/Time Received By KELENSON IS/8/10 10:00 Date/Time Page 1 of 1 x Keleen Received By



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-	N/A-	Requested 1	ra⊤ (Days)§	TAND P.O. Rec	eived Yes []	No[]	
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Custody	seals on shippi	ng container dat	ted & signed	?	-	No[] N/A [
Custody	seals on sample	e containers inti	act?			No[] N/A [
Custody	seals on sampl	e containers da	ted & signed	?	• •	No[] N/A [
					Wet []	Dry[] N/	t V
b lu una la cart	of comples in s	hipping contain	er:	Sample Matri	x	<u> </u>	
Number	of containers p	er sample:		(Or see CoC _)		
	are in correct			Yes [V]			
Paperwo	ork agrees with	samples?		Yes [1	NUL J		
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3. Describ 4. Was P. 5. Inspect Customer Sample No.	e any anomalie M. notified of a red by Beta/Gamma cpm	any anomalies?	Yes Date:	[] No [12/08/10 Customer] Date e:/3 :10 Beta/Gamma	Ion Chamber	wipe
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Form SCP-02, 07-30-07

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APPENDIX G

Section 29

Outfall 009 – December 18, 2010 MECX Data Validation Report THIS PAGE LEFT INTENTIONALLY BLANK



DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ITL1881

Prepared by

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

I. INTRODUCTION

Task Order Title: Contract Task Order:	Boeing SSFL NPDES 1261.100D.00
Sample Delivery Group:	ITL1881
Project Manager:	B. Kelly
Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 009 (Comp)	ITL1881-02	G0L210472-001, S012300-001	Water	12/18/2010 5:10:00 PM	1613B, 900, 901.1, 903.1, 904, 905, 906, 245.1, 245.1-Diss, SM 2540D, D5174

II. Sample Management

A portion of the samples in this SDG were received at TestAmerica-Irvine and TestAmerica-West Sacramento marginally below the control limit; however, as the samples were not noted to be frozen or damaged, no qualifications were required. The samples were received marginally above the temperature limit at Eberline; 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 Eberline and TestAmerica West Sacramento. If necessary, the client ID was added to the sample result summary by the reviewer.

Qualifie	r 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.
Ν	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.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
Н	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
С	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
В	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.
Е	Not applicable.	Duplicates showed poor agreement.
Ι	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
А	Not applicable.	ICP Serial Dilution %D were not within control limits.
М	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
Т	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

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.
Ρ	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.
*11, *111	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 18, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the MEC^{\times} 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.
 - o 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 between the EDL and the RL for 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, OCDD, OCDF, total HpCDD, and total HpCDF. All but OCDD were reported as EMPCs in the method blank; however, due to the extent of the method blank contamination, the reviewer considered it appropriate to use the EMPCs to qualify sample results. The method blank result for OCDD was insufficient to qualify the

sample result. All other individual isomers detected in both the method blank and site sample were qualified as nondetected, "U" at the EDL, or at the level of contamination in the sample. The sample totals containing one or more peaks detected in the method blank were qualified as estimated, "J."

- Blank Spikes and Laboratory Control Samples: The LCS 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: There were no field duplicate samples identified for this SDG.
- Internal Standards Performance: The labeled standard recoveries in 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 a representative number of reportable sample results. Any individual isomers reported as EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. Remaining EMPCs in the sample were qualified as estimated nondetects, "UJ," at the level of the EMPC. Any totals including EMPC peaks were qualified as estimated, "J." 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 METHOD 245.1—Mercury

Reviewed By: P. Meeks Date Reviewed: January 14, 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 Method 245.1, and the National Functional Guidelines for Inorganic Data Review (7/02).

• Holding Times: The analytical holding time, six months for ICP and ICP-MS metals and 28 days for mercury, was met.

- Tuning: Not applicable to this analysis.
- Calibration: Calibration criteria were met. Mercury initial calibration r² values were ≥0.995 and all initial and continuing calibration recoveries were within 85-115%. 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 laboratoryestablished QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. 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: February 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. The remaining aliquots were prepared within the five-day analytical holding time for unpreserved samples.
- Calibration: The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

The remaining 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.

- Blanks: There were no analytes detected in the method blanks.
- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratoryestablished control limits.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG for all analytes. The 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.
- A notation in the sample preparation logbook indicated that the aliquot for Radium-228 was filtered and that the filter was digested and added to the aliquot.
- 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 14, 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 Standard Method SM2540D, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding time, seven days from collection, was met.
- Calibration: The balance logs were acceptable.
- Blanks: TSS was not detected in the method blank.
- Blank Spikes and Laboratory Control Samples: The recovery was within laboratoryestablished QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample 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:

9

- 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 ITL1881

Analysis Method 8643 Matrix Type: WATER Sample Name Outfall 009 (Comp) Validation Level: IV ITL1881-02 Sample Date: 12/18/2010 5:10:00 PM Lab Sample Name: Analyte CAS No Result RL MDL Result Lab Validation Validation Value Units Qualifier **Oualifier** Notes Uranium. Total NA 0.103 0.019 pCi/L DNQ 1 Jb J 900 Analysis Method Sample Name Outfall 009 (Comp) Matrix Type: WATER Validation Level: IV Sample Date: 12/18/2010 5:10:00 PM ITL1881-02 Lab Sample Name: Result RL Analyte CAS No MDL Result Lab Validation Validation Value Units Qualifier Qualifier Notes Gross Alpha 12587461 1.22 3 0.326 pCi/L Jb J DNQ Gross Beta 12587472 1.61 4 0.853 pCi/L Jb J DNO Analysis Method 901.1 Matrix Type: WATER Sample Name Outfall 009 (Comp) Validation Level: IV ITL1881-02 Sample Date: 12/18/2010 5:10:00 PM Lab Sample Name: CAS No Result RL Analyte MDL Result Lab Validation Validation Value Units Qualifier Qualifier Notes Cesium-137 10045973 ND 20 1.28 pCi/L U U Potassium-40 13966002 ND 25 17.8 pCi/L U U Analysis Method 903.1 Matrix Type: WATER Validation Level: IV Outfall 009 (Comp) Sample Name Sample Date: 12/18/2010 5:10:00 PM ITL1881-02 Lab Sample Name: CAS No Analyte Result RL MDL Result Lab Validation Validation Qualifier Value Units Notes Qualifier Radium-226 13982633 0.332 1 0.604 pCi/L U U Analysis Method 904 Matrix Type: WATER Validation Level: IV Sample Name Outfall 009 (Comp) Sample Date: 12/18/2010 5:10:00 PM Lab Sample Name: ITL1881-02 Analyte CAS No Result RL MDL Result Lab Validation Validation Value Units Qualifier Qualifier Notes

Tuesday, February 08, 2011

15262201

0.118

1

0.459

pCi/L

U

U

Radium-228

Sample Name	Outfall 009 (0	Comp)	Matri	х Туре:	WATER	V	alidation Le	vel: IV
Lab Sample Name:	ITL1881-02	Sam	ple Date:	12/18/20	10 5:10:00 PM	М		
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	0.012	2	1.12	pCi/L	U	U	
Analysis Metho	od 906							
Sample Name	Outfall 009 (Comp)	Matri	x Type:	WATER	۲	alidation Le	vel: IV
Lab Sample Name:	ITL1881-02	Sam	ple Date:	12/18/20	10 5:10:00 PM	М		
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-81.5	500	294	pCi/L	U	U	
Analysis Metho	od EPA	245.1						
Sample Name	Outfall 009 (Comp)	Matri	x Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	ITL1881-02	Sam	ple Date:	12/18/20	10 5:10:00 PM	Μ		
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 Metho	od EPA	245.1-L	Diss					
Sample Name	Outfall 009 (Comp)	Matri	x Type:	Water	I.	alidation Le	vel: IV
Lab Sample Name:	ITL1881-02	Sam	ple Date:	12/18/20	10 5:10:00 PM	M		
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
							-	

Analysis Method 905

Sample Name	Outfall 009 (C	Comp)	Matri	х Туре: 🕚	WATER	۷	alidation Le	vel: IV
Lab Sample Name:	ITL1881-02	Samj	ple Date:	12/18/2010) 5:10:00 Pl	M		
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	0.000049	0.0000006	ug/L	J, B	U	В
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.000049	0.0000004	ug/L	J, Q, B	U	В
1,2,3,4,7,8,9-HpCDF	55673-89-7	0.000001	0.000049	0.0000005	ug/L	J	J	DNQ
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.000049	0.0000001	ug/L	J, Q	UJ	*III
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.000049	0.0000001	ug/L	J, Q	UJ	*Ш
1,2,3,6,7,8-HxCDD	57653-85-7	0.000002	0.000049	0.0000001	ug/L	J	J	DNQ
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.000049	0.0000001	ug/L	J, Q	UJ	*Ш
1,2,3,7,8,9-HxCDD	19408-74-3	0.000002	0.000049	0.0000001	ug/L	J	J	DNQ
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.000049	0.0000001	ug/L	J, Q	UJ	*III
1,2,3,7,8-PeCDD	40321-76-4	ND	0.000049	0.0000014	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.000049	0.0000005	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	0.000000	0.000049	0.0000001	ug/L	J	J	DNQ
2,3,4,7,8-PeCDF	57117-31-4	0.000001	0.000049	0.0000005	ug/L	J	J	DNQ
2,3,7,8-TCDD	1746-01-6	ND	0.0000098	0.0000003	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.0000098	0.0000006	ug/L		U	
OCDD	3268-87-9	0.00036	0.000098	0.0000013	ug/L	В		
OCDF	39001-02-0	ND	0.000098	0.0000005	ug/L	J, B	U	В
Total HpCDD	37871-00-4	0.00008	0.000049	0.0000006	ug/L	J, B	J	B, DNQ
Total HpCDF	38998-75-3	0.000021	0.000049	0.0000004	ug/L	J, Q, B	J	B, DNQ, *III
Total HxCDD	34465-46-8	0.000014	0.000049	0.0000001	ug/L	J, Q	J	DNQ, *III
Total HxCDF	55684-94-1	0.00001	0.000049	0.0000001	ug/L	J, Q	J	DNQ, *III
Total PeCDD	36088-22-9	ND	0.000049	0.0000014	ug/L		U	
Total PeCDF	30402-15-4	0.000002	0.000049	0.0000005	ug/L	J	J	DNQ
Total TCDD	41903-57-5	ND	0.0000098	0.0000003	ug/L		U	
Total TCDF	55722-27-5	ND	0.0000098	0.0000006	ug/L		U	
Analysis Method	d SM 25	540D						
Sample Name	Outfall 009 (C	Comp)	Matri	x Type:	Water	V	alidation Le	vel: IV

Analysis Method EPA-5 1613B

Sample Name	Outfall 009 (Comp) M		Matri	х Туре:	Water	Validation Level: IV			
Lab Sample Name:	ITL1881-02	Sam	ple Date:	12/18/201	0 5:10:00 PM	1			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Total Suspended Solids	TSS	19	10	1.0	mg/l				

APPENDIX G

Section 30

Outfall 009 – December 18, 2010 Test America Analytical Laboratory Report THIS PAGE LEFT INTENTIONALLY BLANK

THE LEADER IN ENVIRONMENTAL TESTING

LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Sampled: 12/18/10 Received: 12/18/10 Issued: 02/04/11 12:05

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

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 3 pages, are

included and are an integral part of this report. This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

Refer to the last page for specific subcontract laboratory information included in this report. SUBCONTRACTED: ADDITIONAL **INFORMATION:** WATER, 1613B, Dioxins/Furans with Totals 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. **CLIENT ID** LABORATORY ID MATRIX ITL1881-01 Outfall 009 (Grab) Water ITL1881-02 Outfall 009 (Comp) Water

Trip Blank

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

ITL1881-03

TestAmerica Irvine Debby Wilson Project Manager

Water



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

Grease)

Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

HEXANE EXTRACTABLE MATERIAL MDL Reporting Sample Dilution Date Data Qualifiers Method Analyte Batch Limit Limit Result Factor Analyzed Analyst Sample ID: ITL1881-01 (Outfall 009 (Grab) - Water) Reporting Units: mg/l Hexane Extractable Material (Oil & EPA 1664A 10L2313 1.3 4.7 ND 1 DA 12/20/10

TestAmerica Irvine

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 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METALS									
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL1881-02 (Outfall 009 (
Reporting Units: ug/l									
Mercury	EPA 245.1	10L2344	0.10	0.20	ND	1	DB	12/20/10	
Antimony	EPA 200.8	10L2490	0.30	2.0	0.41	1	NH	12/21/10	J
Cadmium	EPA 200.8	10L2490	0.10	1.0	ND	1	NH	12/21/10	
Copper	EPA 200.8	10L2490	0.500	2.00	3.86	1	NH	12/21/10	
Lead	EPA 200.8	10L2490	0.20	1.0	2.3	1	NH	12/21/10	
Thallium	EPA 200.8	10L2490	0.20	1.0	ND	1	NH	12/21/10	

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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 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

DISSOLVED METALS MDL Reporting Sample Dilution Date Data Method Batch Limit Limit Result Factor Analyzed Qualifiers Analyte Analyst Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water) - cont. Reporting Units: ug/l 0.20 DB EPA 245.1-Diss 10L2349 0.10 ND 12/20/10 Mercury 1 Antimony EPA 200.8-Diss 10L2387 0.30 2.0 0.57 FR 12/21/10 J 1 10L2387 ND FR 12/21/10 Cadmium EPA 200.8-Diss 0.10 1.0 1 EPA 200.8-Diss 10L2387 0.500 2.00 2.60 FR 12/21/10 Copper 1 EPA 200.8-Diss 10L2387 0.20 0.36 FR 12/21/10 J Lead 1.0 1 Thallium EPA 200.8-Diss 10L2387 0.20 1.0 ND 1 FR 12/21/10

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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 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

INORGANICS										
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers	
Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water) - cont.										
Reporting Units: mg/l										
Chloride	EPA 300.0	10L2303	0.25	0.50	2.5	1	NN	12/20/10		
Nitrate/Nitrite-N	EPA 300.0	10L2303	0.15	0.26	0.51	1	NN	12/20/10		
Sulfate	EPA 300.0	10L2303	0.20	0.50	3.4	1	NN	12/20/10		
Total Dissolved Solids	SM2540C	10L2247	1.0	10	64	1	MC	12/20/10		
Total Suspended Solids	SM 2540D	10L2549	1.0	10	19	1	DK	12/21/10		
Sample ID: ITL1881-02 (Outfall 009 (Co	omp) - Water)									
Reporting Units: ug/l										
Total Cyanide	SM4500CN-E	10L2367	2.2	5.0	ND	1	HH	12/20/10		

TestAmerica Irvine

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 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

EPA-5 1613Bx									
			MDL	Reporting	Sample	Dilution		Date	Data
Analyte	Method	Batch	Limit	Limit	Result	Factor	Analyst	Analyzed	Qualifiers
Sample ID: ITL1881-02 (Outfall 009) Reporting Units: ug/L	(Comp) - Water) - con	t.							
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	356427	0.0000006	3 0.000049	0.000033	0.98	SY	12/23/10	J, B
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	356427	0.0000004	4 0.000049	0.0000082	0.98	SY	12/23/10	J, Q, B
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B			4 0.000049	0.0000016		SY	12/23/10	J
1,2,3,4,7,8-HxCDD	EPA-5 1613B			7 0.000049	0.0000017		SY	12/23/10	J, Q
1,2,3,4,7,8-HxCDF	EPA-5 1613B				0.0000096		SY	12/23/10	J, Q
1,2,3,6,7,8-HxCDD	EPA-5 1613B			4 0.000049	0.0000022		SY	12/23/10	J
1,2,3,6,7,8-HxCDF	EPA-5 1613B			7 0.000049	0.0000011	0.98	SY SY	12/23/10	J, Q
1,2,3,7,8,9-HxCDD 1,2,3,7,8,9-HxCDF	EPA-5 1613B EPA-5 1613B			4 0.000049 9 0.000049	0.0000023		SY	12/23/10 12/23/10	J J, Q
1,2,3,7,8-PeCDD	EPA-5 1613B			4 0.000049	ND	0.98	SY	12/23/10	J, Q
1,2,3,7,8-PeCDF	EPA-5 1613B			54 0.000049	ND	0.98	SY	12/23/10	
2,3,4,6,7,8-HxCDF	EPA-5 1613B				0.00000091		SY	12/23/10	J
2,3,4,7,8-PeCDF	EPA-5 1613B			8 0.000049	0.0000011	0.98	SY	12/23/10	J
2,3,7,8-TCDD	EPA-5 1613B			10.0000098	ND	0.98	SY	12/23/10	
2,3,7,8-TCDF	EPA-5 1613B			30.0000098	ND	0.98	SY	12/23/10	
OCDD	EPA-5 1613B	356427	0.000001	3 0.000098	0.00036	0.98	SY	12/23/10	В
OCDF	EPA-5 1613B	356427	0.0000005	4 0.000098	0.000021	0.98	SY	12/23/10	J, B
Total HpCDD	EPA-5 1613B	356427	0.0000006	3 0.000049	0.00008	0.98	SY	12/23/10	J, B
Total HpCDF	EPA-5 1613B			6 0.000049	0.000021	0.98	SY	12/23/10	J, Q, B
Total HxCDD	EPA-5 1613B			5 0.000049	0.000014	0.98	SY	12/23/10	J, Q
Total HxCDF	EPA-5 1613B			7 0.000049	0.00001	0.98	SY	12/23/10	J, Q
Total PeCDD	EPA-5 1613B			4 0.000049	ND	0.98	SY	12/23/10	-
Total PeCDF	EPA-5 1613B			6 0.000049	0.0000021	0.98	SY	12/23/10	J
Total TCDD	EPA-5 1613B			10.0000098	ND	0.98	SY	12/23/10	
Total TCDF	EPA-5 1613B	356427	0.0000006	30.0000098	ND	0.98	SY	12/23/10	
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (86 % 82 %				
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (82 % 83 %				
Surrogate: 13C-1,2,3,4,7,8-HxCDD (3.					74 %				
Surrogate: 13C-1,2,3,4,7,8-HxCDF (20					73 %				
Surrogate: 13C-1,2,3,6,7,8-HxCDD (20					91 %				
Surrogate: 13C-1,2,3,6,7,8-HxCDF (20					76 %				
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29					74 %				
Surrogate: 13C-1,2,3,7,8-PeCDD (25-	181%)				90 %				
Surrogate: 13C-1,2,3,7,8-PeCDF (24-1	185%)				89 %				
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28					77 %				
Surrogate: 13C-2,3,4,7,8-PeCDF (21-1					91 %				
Surrogate: 13C-2,3,7,8-TCDD (25-164	·				70 %				
Surrogate: 13C-2,3,7,8-TCDF (24-169	%)				67 %				
Surrogate: 13C-OCDD (17-157%)	070()				77 %				
Surrogate: 37Cl4-2,3,7,8-TCDD (35-1)	97%)				100 %				

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Re Attention: Bronwyn Kelly	Project ID: port Number:	Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite ITL1881	Sampled: Received:	
		8643		

			0010						
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water) - cont.									
Reporting Units: pCi/L									
Uranium, Total	8643	8643		1	0.103	1	CSS	01/18/11	Jb

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MWH-Pasadena/BoeingProject ID:618 Michillinda Avenue, Suite 200Arcadia, CA 91007Arcadia, CA 91007Report Number:Attention: Bronwyn KellyImage: State Stat	Routine Outfall 009 2010Sampled: 12/18/10Routine Outfall 009 Grab and CompositeSampled: 12/18/10ITL1881Received: 12/18/10
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			8643						
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL1881-03 (Trip Blank - Water) Reporting Units: pCi/L									
Uranium, Total	8643	8643		1	ND	1	CSS	01/20/11	U

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

Attention: Bronwyn Kelly	Report Number:	900	Keceived.	12/18/10
MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007	5	Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite	Sampled: Received:	

			900						
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water)									
Reporting Units: pCi/L									
Gross Alpha	900	8643		3	1.22	1	LS	01/04/11	Jb
Gross Beta	900	8643		4	1.61	1	LS	01/04/11	Jb
Sample ID: ITL1881-03 (Trip Blank	- Water)								
Reporting Units: pCi/L									
Gross Alpha	900	8643		3	-0.162	1	KT	01/14/11	U
Gross Beta	900	8643		4	-0.78	1	KT	01/14/11	U

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MWH-Pasadena/BoeingProject ID:Routine Outfall 009 2010618 Michillinda Avenue, Suite 200Routine Outfall 009 Grab and CompositeSampled: 12/18/10Arcadia, CA 91007Report Number:ITL1881Received: 12/18/10Attention: Bronwyn KellyKellyItlastReceived: 12/18/10	
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			901.1						
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water)									
Reporting Units: pCi/L	0.04.4	0.640		•				10/00/10	••
Cesium-137	901.1	8643		20	ND	1	LS	12/29/10	U
Potassium-40	901.1	8643		25	ND	1	LS	12/29/10	U
Sample ID: ITL1881-03 (Trip Blank - V	Vater)								
Reporting Units: pCi/L									
Cesium-137	901.1	8643		20	ND	1	LS	01/13/11	U
Potassium-40	901.1	8643		25	ND	1	LS	01/13/11	U

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THE LEADER IN ENVIRONMENTAL TESTING

Reporting Units: pCi/L

Reporting Units: pCi/L

Sample ID: ITL1881-03 (Trip Blank - Water)

Radium-226

Radium-226

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: Report Number:	Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite ITL1881	Sampled: 12/18/10 Received: 12/18/10					
		903.1 MDL Reporting Sample Dilution	Date Data					
Analyte	Method Batch		Analyst Analyzed Qualifiers					
Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water)								

1

1

0.332

0.415

1

1

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01/06/11

01/24/11

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8643

8643

903.1

903.1

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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: t Number:	Routine Or	Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite ITL1881			1	12/18/10 12/18/10	
Analyte	Method	Batch	904 MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL1881-02 (Outfall 009 (Co Reporting Units: pCi/L Radium-228	mp) - Water) 904	8643		1	0.118	1	ASM	01/21/11	U

1

-0.097

1

ASM

01/26/11

U

8643

Sample ID: ITL1881-03 (Trip Blank - Water) Reporting Units: pCi/L Radium-228

904

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly		Project ID: t Number:	Routine Or	Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite ITL1881				: 12/18/10 : 12/18/10	
Analyte	Method	Batch	905 MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL1881-02 (Outfall 009 (C Reporting Units: pCi/L	Comp) - Water)								

2

2

0.012

0.238

1

1

WL

ASM

01/06/11

01/24/11

U

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8643

8643

Strontium-90	905
Sample ID: ITL1881-03 (Trip Blank - Water)	
Reporting Units: pCi/L	
Strontium-90	905

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MWH-Pasadena/BoeingProject618 Michillinda Avenue, Suite 200Arcadia, CA 91007Report NumAttention: Bronwyn KellyReport NumReport Num]	Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite ITL1881	Sampled: Received:				
906							

200									
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water) Reporting Units: pCi/L									
Tritium	906	8643		500	-81.5	1	JO	01/13/11	U

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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 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 009 (Comp) (ITL1881-02	Hold Time (in days) 2) - Water	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 300.0	2	12/18/2010 17:10	12/18/2010 16:40	12/20/2010 11:00	12/20/2010 11:38
Filtration	1	12/18/2010 17:10	12/18/2010 16:40	12/20/2010 09:00	12/20/2010 09:39

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2313 Extracted: 12/20/10										
Blank Analyzed: 12/20/2010 (10L2313-B	SLK1)									
Hexane Extractable Material (Oil & Grease)	ND	5.0	mg/l							
LCS Analyzed: 12/20/2010 (10L2313-BS	51)									MNR1
Hexane Extractable Material (Oil & Grease)	19.5	5.0	mg/l	20.0		98	78-114			
LCS Dup Analyzed: 12/20/2010 (10L2313-BSD1)										
Hexane Extractable Material (Oil & Grease)	19.1	5.0	mg/l	20.0		96	78-114	2	11	

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2344 Extracted: 12/20/10										
Blank Analyzed: 12/20/2010 (10L2344-B	LK1)									
Mercury	ND	0.20	ug/l							
LCS Analyzed: 12/20/2010 (10L2344-BS	1)									
Mercury	7.94	0.20	ug/l	8.00		99	85-115			
Matrix Spike Analyzed: 12/20/2010 (10L	2344-MS1)				Source: I	TL1882-0	2			
Mercury	7.98	0.20	ug/l	8.00	ND	100	70-130			
Matrix Spike Dup Analyzed: 12/20/2010	(10L2344-M	SD1)			Source: I	TL1882-0	2			
Mercury	8.05	0.20	ug/l	8.00	ND	101	70-130	0.8	20	
Batch: 10L2490 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2490-B	LK1)									
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 12/21/2010 (10L2490-BS	1)									
Antimony	82.1	2.0	ug/l	80.0		103	85-115			
Cadmium	81.5	1.0	ug/l	80.0		102	85-115			
Copper	82.8	2.00	ug/l	80.0		103	85-115			
Lead	83.1	1.0	ug/l	80.0		104	85-115			
Thallium	85.1	1.0	ug/l	80.0		106	85-115			

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

METALS

	Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 10L2490 Extracted: 12/21/10										
Matrix Spike Analyzed: 12/21/2010 (101	.2490-MS1)				Source: I	TL1829-0	3			
Antimony	83.7	2.0	ug/l	80.0	ND	105	70-130			
Cadmium	77.1	1.0	ug/l	80.0	0.125	96	70-130			
Copper	78.7	2.00	ug/l	80.0	5.15	92	70-130			
Lead	80.1	1.0	ug/l	80.0	4.26	95	70-130			
Thallium	76.0	1.0	ug/l	80.0	ND	95	70-130			
Matrix Spike Analyzed: 12/21/2010 (101	.2490-MS2)				Source: I	TL1829-0	4			
Antimony	84.7	2.0	ug/l	80.0	ND	106	70-130			
Cadmium	78.3	1.0	ug/l	80.0	ND	98	70-130			
Copper	76.3	2.00	ug/l	80.0	ND	95	70-130			
Lead	77.4	1.0	ug/l	80.0	0.729	96	70-130			
Thallium	77.4	1.0	ug/l	80.0	ND	97	70-130			
Matrix Spike Dup Analyzed: 12/21/2010	(10L2490-M	SD1)			Source: I	TL1829-0	3			
Antimony	84.4	2.0	ug/l	80.0	ND	105	70-130	0.8	20	
Cadmium	77.6	1.0	ug/l	80.0	0.125	97	70-130	0.7	20	
Copper	79.4	2.00	ug/l	80.0	5.15	93	70-130	0.8	20	
Lead	81.4	1.0	ug/l	80.0	4.26	96	70-130	2	20	
Thallium	78.5	1.0	ug/l	80.0	ND	98	70-130	3	20	

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2349 Extracted: 12/20/10										
Blank Analyzed: 12/20/2010 (10L2349-B	LK1)									
Mercury	ND	0.20	ug/l							
LCS Analyzed: 12/20/2010 (10L2349-BS	1)									
Mercury	8.07	0.20	ug/l	8.00		101	85-115			
Matrix Spike Analyzed: 12/20/2010 (10L	2349-MS1)				Source: I	TL1813-0	1			
Mercury	7.58	0.20	ug/l	8.00	ND	95	70-130			
Matrix Spike Dup Analyzed: 12/20/2010	(10L2349-M	SD1)			Source: I	TL1813-0	1			
Mercury	7.56	0.20	ug/l	8.00	ND	95	70-130	0.2	20	
Batch: 10L2387 Extracted: 12/20/10										
Blank Analyzed: 12/21/2010 (10L2387-B	LK1)									
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 12/21/2010 (10L2387-BS	1)									
Antimony	80.9	2.0	ug/l	80.0		101	85-115			
Cadmium	80.9	1.0	ug/l	80.0		101	85-115			
Copper	91.2	2.00	ug/l	80.0		114	85-115			
Lead	72.8	1.0	ug/l	80.0		91	85-115			
Thallium	74.9	1.0	ug/l	80.0		94	85-115			

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

DISSOLVED METALS

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 10L2387 Extracted: 12/20/10										
Matrix Spike Analyzed: 12/21/2010 (10L	2387-MS1)				Source: I	TL1877-0	1			
Antimony	83.0	2.0	ug/l	80.0	ND	104	70-130			
Cadmium	80.8	1.0	ug/l	80.0	ND	101	70-130			
Copper	89.8	2.00	ug/l	80.0	2.12	110	70-130			
Lead	73.6	1.0	ug/l	80.0	0.473	91	70-130			
Thallium	78.3	1.0	ug/l	80.0	0.289	98	70-130			
Matrix Spike Dup Analyzed: 12/21/2010	(10L2387-M	(SD1)			Source: I	TL1877-0	1			
Antimony	81.4	2.0	ug/l	80.0	ND	102	70-130	2	20	
Cadmium	79.2	1.0	ug/l	80.0	ND	99	70-130	2	20	
Copper	89.5	2.00	ug/l	80.0	2.12	109	70-130	0.4	20	
Lead	72.9	1.0	ug/l	80.0	0.473	91	70-130	0.9	20	
Thallium	77.2	1.0	ug/l	80.0	0.289	96	70-130	1	20	

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2247 Extracted: 12/20/10										
Blank Analyzed: 12/20/2010 (10L2247-B	LK1)									
Total Dissolved Solids	ND	10	mg/l							
LCS Analyzed: 12/20/2010 (10L2247-BS	1)									
Total Dissolved Solids	1000	10	mg/l	1000		100	90-110			
Duplicate Analyzed: 12/20/2010 (10L224	7-DUP1)				Source: I	TL1836-0	9			
Total Dissolved Solids	322	10	mg/l		313			3	10	
Batch: 10L2303 Extracted: 12/20/10										
Blank Analyzed: 12/20/2010 (10L2303-B	LK1)									
Chloride	ND	0.50	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
Sulfate	ND	0.50	mg/l							
LCS Analyzed: 12/20/2010 (10L2303-BS	1)									
Chloride	4.56	0.50	mg/l	5.00		91	90-110			
Sulfate	9.32	0.50	mg/l	10.0		93	90-110			
Matrix Spike Analyzed: 12/20/2010 (10L	.2303-MS1)				Source: I	TL1881-0	2			
Chloride	6.92	0.50	mg/l	5.00	2.48	89	80-120			
Sulfate	12.9	0.50	mg/l	10.0	3.40	95	80-120			
Matrix Spike Dup Analyzed: 12/20/2010	(10L2303-M	ISD1)			Source: I	TL1881-0	2			
Chloride	6.69	0.50	mg/l	5.00	2.48	84	80-120	3	20	
Sulfate	13.1	0.50	mg/l	10.0	3.40	97	80-120	2	20	

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2367 Extracted: 12/20/10										
Blank Analyzed: 12/20/2010 (10L2367-B	LK1)									
Total Cyanide	ND	5.0	ug/l							
LCS Analyzed: 12/20/2010 (10L2367-BS	1)									
Total Cyanide	190	5.0	ug/l	200		95	90-110			
Matrix Spike Analyzed: 12/20/2010 (10L	2367-MS1)				Source: I	TL1881-0	2			
Total Cyanide	169	5.0	ug/l	200	ND	85	70-115			
Matrix Spike Dup Analyzed: 12/20/2010	(10L2367-MS	SD1)			Source: I	TL1881-0	2			
Total Cyanide	168	5.0	ug/l	200	ND	84	70-115	0.7	15	
Batch: 10L2549 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2549-B	LK1)									
Total Suspended Solids	ND	10	mg/l							
LCS Analyzed: 12/21/2010 (10L2549-BS	1)									
Total Suspended Solids	991	10	mg/l	1000		99	85-115			
Duplicate Analyzed: 12/21/2010 (10L254	9-DUP1)				Source: I	TL1881-0	2			
Total Suspended Solids	19.0	10	mg/l		19.0			0	10	

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
-	Result	Linnt	Units	Level	Kesuit	70NEU	Linnts	KF D	Linnt	Quanners
Batch: 356427 Extracted: 12/22/10										
Blank Analyzed: 12/23/2010 (G0L22()000427B)				Source:					
1,2,3,4,6,7,8-HpCDD	9e-007	0.00005	ug/L				-			J, Q
1,2,3,4,6,7,8-HpCDF	7.7e-007	0.00005	ug/L				-			J, Q
1,2,3,4,7,8,9-HpCDF	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDD	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDD	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,4,6,7,8-HxCDF	ND	0.00005	ug/L				-			
2,3,4,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,7,8-TCDD	ND	0.00001	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	ug/L				-			
OCDD	5.4e-006	0.0001	ug/L				-			J
OCDF	1.4e-006	0.0001	ug/L				-			J, Q
Total HpCDD	2.1e-006	0.00005	ug/L				-			J, Q
Total HpCDF	7.7e-007	0.00005	ug/L				-			J, Q
Total HxCDD	ND	0.00005	ug/L				-			
Total HxCDF	ND	0.00005	ug/L				-			
Total PeCDD	ND	0.00005	ug/L				-			
Total PeCDF	ND	0.00005	ug/L				-			
Total TCDD	ND	0.00001	ug/L				-			
Total TCDF	ND	0.00001	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.0018		ug/L	0.002		92	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	1700		ug/L	2000		86	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	1800		ug/L	2000		90	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	1700		ug/L	2000		84	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	1600		ug/L	2000		80	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.0019		ug/L	0.002		95	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	1600		ug/L	2000		80	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	1600		ug/L	2000		80	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	2000		ug/L	2000		99	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.002		ug/L	0.002		100	24-185			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	1700		ug/L	2000		83	28-136			

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
·						,				Z
Batch: 356427 Extracted: 12/22/10										
Blank Analyzed: 12/23/2010 (G0L2200	000427B)				Source:					
Surrogate: 13C-2,3,4,7,8-PeCDF	2000		ug/L	2000		100	21-178			
Surrogate: 13C-2,3,7,8-TCDD	1600		ug/L	2000		81	25-164			
Surrogate: 13C-2,3,7,8-TCDF	0.0015		ug/L	0.002		76	24-169			
Surrogate: 13C-OCDD	0.0034		ug/L	0.004		84	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.00082		ug/L	0.0008		102	35-197			
LCS Analyzed: 12/28/2010 (G0L22000)0427C)				Source:					
1,2,3,4,6,7,8-HpCDD	0.00114	0.00005	ug/L	0.001		114	70-140			В
1,2,3,4,6,7,8-HpCDF	0.00122	0.00005	ug/L	0.001		122	82-122			В
1,2,3,4,7,8,9-HpCDF	0.00121	0.00005	ug/L	0.001		121	78-138			
1,2,3,4,7,8-HxCDD	0.00127	0.00005	ug/L	0.001		127	70-164			
1,2,3,4,7,8-HxCDF	0.00112	0.00005	ug/L	0.001		112	72-134			
1,2,3,6,7,8-HxCDD	0.00107	0.00005	ug/L	0.001		107	76-134			
1,2,3,6,7,8-HxCDF	0.00114	0.00005	ug/L	0.001		114	84-130			
1,2,3,7,8,9-HxCDD	0.00119	0.00005	ug/L	0.001		119	64-162			
1,2,3,7,8,9-HxCDF	0.00115	0.00005	ug/L	0.001		115	78-130			
1,2,3,7,8-PeCDD	0.00119	0.00005	ug/L	0.001		119	70-142			
1,2,3,7,8-PeCDF	0.00107	0.00005	ug/L	0.001		107	80-134			
2,3,4,6,7,8-HxCDF	0.00114	0.00005	ug/L	0.001		114	70-156			
2,3,4,7,8-PeCDF	0.00108	0.00005	ug/L	0.001		108	68-160			
2,3,7,8-TCDD	0.000233	0.00001	ug/L	0.0002		117	67-158			
2,3,7,8-TCDF	0.000206	0.00001	ug/L	0.0002		103	75-158			
OCDD	0.00211	0.0001	ug/L	0.002		106	78-144			В
OCDF	0.00201	0.0001	ug/L	0.002		100	63-170			В
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.00219		ug/L	0.002		109	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.00189		ug/L	0.002		94	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.0021		ug/L	0.002		105	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	1630		ug/L	2000		82	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.00153		ug/L	0.002		76	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	1910		ug/L	2000		95	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00157		ug/L	0.002		79	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.00154		ug/L	0.002		77	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	1690		ug/L	2000		85	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0019		ug/L	0.002		95	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00156		ug/L	0.002		78	22-176			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.00173		ug/L	0.002		86	13-328			

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

EPA-5 1613Bx

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 356427 Extracted: 12/22/10										
LCS Analyzed: 12/28/2010 (G0L2200	00427C)				Source:					
Surrogate: 13C-2,3,7,8-TCDD	1740		ug/L	2000		87	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.00158		ug/L	0.002		79	22-152			
Surrogate: 13C-OCDD	0.00402		ug/L	0.004		101	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000783		ug/L	0.0008		98	31-191			

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

8643

Analyte Batch: 8643 Extracted: 01/18/11	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Analyzed: 01/18/2011 (S012300-03) Uranium, Total	58.7	1	pCi/L	56.5	Source:	104	80-120			
Blank Analyzed: 01/18/2011 (S012300-0 4 Uranium, Total	4) 0	1	pCi/L		Source:		-			U
Duplicate Analyzed: 01/18/2011 (S01230 Uranium, Total	0-05) 0.102	1	pCi/L		Source: I 0.103	TL1881-0	2	1		Jb

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

			900							
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8643 Extracted: 12/31/10										
LCS Analyzed: 01/04/2011 (S012300-03)					Source:					
Gross Alpha	43.6	3	pCi/L	40.4		108	70-130			
Gross Beta	33.7	4	pCi/L	35		96	70-130			
Blank Analyzed: 01/04/2011 (S012300-04	l)				Source:					
Gross Alpha	-0.006	3	pCi/L				-			U
Gross Beta	0.047	4	pCi/L				-			U
Duplicate Analyzed: 01/04/2011 (S01230	0-05)				Source: I	TL1881-02	2			
Gross Alpha	1.05	3	pCi/L		1.22		-	15		Jb
Gross Beta	1.72	4	pCi/L		1.61		-	7		Јb

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

901.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8643 Extracted: 12/22/10										
LCS Analyzed: 12/29/2010 (S012300-03)					Source:					
Cobalt-60	98.6	10	pCi/L	102		97	80-120			
Cesium-137	113	20	pCi/L	110		103	80-120			
Blank Analyzed: 12/30/2010 (8012300-04	4)				Source:					
Cesium-137	ND	20	pCi/L				-			U
Potassium-40	ND	25	pCi/L				-			U
Duplicate Analyzed: 12/30/2010 (S01230	0-05)				Source: I	TL1881-0	2			
Cesium-137	ND	20	pCi/L		0		-	0		U
Potassium-40	ND	25	pCi/L		0		-	0		U

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Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

903.1

Analyte Batch: 8643 Extracted: 01/06/11	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Analyzed: 01/06/2011 (S012300-03) Radium-226	46.2	1	pCi/L	55.7	Source:	83	80-120			
Blank Analyzed: 01/06/2011 (S012300-04 Radium-226	4) 0.052	1	pCi/L		Source:		-			U
Duplicate Analyzed: 01/06/2011 (S01230 Radium-226	0-05) 0.84	1	pCi/L		Source: I 0.332	TL1881-0	2	87		Jb



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Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

904 Reporting Spike %REC RPD Data Source Analyte Result Limit Units Level Result %REC Limits RPD Limit Qualifiers Batch: 8643 Extracted: 01/21/11 LCS Analyzed: 01/21/2011 (S012300-03) Source: Radium-228 3.81 1 pCi/L 4.63 82 60-140 Blank Analyzed: 01/21/2011 (S012300-04) Source: Radium-228 0.032 U1 pCi/L Duplicate Analyzed: 01/21/2011 (S012300-05) Source: ITL1881-02 Radium-228 0.187 1 pCi/L 0.118 0 U

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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

905 Reporting Spike %REC RPD Data Source Analyte Result Limit Units Level Result %REC Limits RPD Limit Qualifiers Batch: 8643 Extracted: 01/07/11 LCS Analyzed: 01/06/2011 (S012300-03) Source: Strontium-90 17.1 2 pCi/L 17.5 98 80-120 Blank Analyzed: 01/06/2011 (S012300-04) Source: 2 UStrontium-90 -0.11 pCi/L Duplicate Analyzed: 01/06/2011 (S012300-05) Source: ITL1881-02 Strontium-90 -0.065 2 pCi/L 0.012 0 U

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Sampled: 12/18/10 Received: 12/18/10

METHOD BLANK/QC DATA

			906							
Analyte Batch: 8643 Extracted: 01/10/11	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Analyzed: 01/13/2011 (S012300-03) Tritium	2330	500	pCi/L	2550	Source:	91	80-120			
Blank Analyzed: 01/13/2011 (S012300-04 Tritium	-94.9	500	pCi/L		Source:		-			U
Duplicate Analyzed: 01/13/2011 (S01230) Tritium	0-05) -140	500	pCi/L		Source: I ' -81.5	TL1881-02	-	0		U

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

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.

						Compliance
LabNumber	Analysis	Analyte	Units	Result	MRL	Limit
ITL1881-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0.28	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
ITL1881-02	Cadmium-200.8	Cadmium	ug/l	0	1.0	3.1
ITL1881-02	Chloride - 300.0	Chloride	mg/l	2.48	0.50	150
ITL1881-02	Copper-200.8	Copper	ug/l	3.86	2.00	14
ITL1881-02	Lead-200.8	Lead	ug/l	2.25	1.0	5.2
ITL1881-02	Nitrogen, NO3+NO2 -N EPA	A 300.0 Nitrate/Nitrite-N	mg/l	0.51	0.26	8
ITL1881-02	Sulfate-300.0	Sulfate	mg/l	3.40	0.50	300
ITL1881-02	TDS - SM2540C	Total Dissolved Solids	mg/l	64	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.

						Compliance
LabNumber	Analysis	Analyte	Units	Result	MRL	Limit



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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

DATA QUALIFIERS AND DEFINITIONS

- **B** Method blank contamination. The associated method blank contains the target analyte at a reportable level.
- J Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
- Jb The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- 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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Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 1664A	Water	Х	Х
EPA 200.8-Diss	Water	Х	Х
EPA 200.8	Water	Х	Х
EPA 245.1-Diss	Water	Х	Х
EPA 245.1	Water	Х	Х
EPA 300.0	Water	Х	Х
Filtration	Water	N/A	N/A
Level 4	Water		
SM 2540D	Water	Х	Х
SM2540C	Water	Х	
SM4500CN-E	Water	Х	Х

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

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

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

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec Samples: ITL1881-02

Samples: ITL1881-03

Analysis Performed: Gross Alpha Samples: ITL1881-02

Samples: ITL1881-03

Analysis Performed: Gross Beta Samples: ITL1881-02

Samples: ITL1881-03

Analysis Performed: Radium, Combined Samples: ITL1881-02

Samples: ITL1881-03

Analysis Performed: Strontium 90 Samples: ITL1881-02

Samples: ITL1881-03

Analysis Performed: Tritium Samples: ITL1881-02

Samples: ITL1881-03

Analysis Performed: Uranium, Combined Samples: ITL1881-02

Samples: ITL1881-03

TestAmerica Irvine

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

Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly 17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

Project ID: Routine Outfall 009 2010 Routine Outfall 009 Grab and Composite Report Number: ITL1881

Sampled: 12/18/10 Received: 12/18/10

TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8643 Samples: ITL1881-02, ITL1881-03

- Method Performed: 900 Samples: ITL1881-02, ITL1881-03
- Method Performed: 901.1 Samples: ITL1881-02, ITL1881-03
- Method Performed: 903.1 Samples: ITL1881-02, ITL1881-03
- Method Performed: 904 Samples: ITL1881-02, ITL1881-03
- Method Performed: 905 Samples: ITL1881-02, ITL1881-03
- Method Performed: 906 Samples: ITL1881-02

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

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B Samples: ITL1881-02

TestAmerica Irvine



CHAIN OF CUSTODY FORM

Page 1 of

TestA	meric	Ca Version 6	/29/09			C	HAI	NC		CUS	510	DY	FO	RIV	1			1	(00)	Page 1 of
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Project Manag	-	-	<u>e</u>	Phone Number (626) 568-669 Fax Number: (626) 568-651	1		Grease (1664-HEM)													Time of readings =
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CHAIN OF CUSTODY FORM

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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

February 4, 2011

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

Reference: Test America-Irvine ITL1881 Eberline Analytical Report S012300-8643 Sample Delivery Group 8643

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for two water samples received under Test America Job No. ITL1881. The samples were received on December 21, 2010.

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

Sincerely, 11. Melgoulfor

N. Joseph Verville Client Services Manager

RM/ljb

Enclosure: Level IV CLP-like Data Package CD

Case Narrative, page 1

1.0 General Comments

Sample delivery group 8643 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 sample was 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 sample as received i.e. the sample was 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 volume.

2.0 Quality Control

For efficiency of analysis, sample ITL1881-02 (Trip Blank) was analyzed in a common prep batch with other TA samples. The QC samples from that common prep batch were assigned to SDG 8657 and are reported herein. Quality Control Samples consisted of laboratory control samples (LCS), method blanks, duplicate analyses and matrix spike 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 2^{σ} 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%

Case Narrative, page 2

February 4, 2011

4.0 Analysis Notes

- Gross Alpha/Gross Beta Analysis No problems were encountered during 4.1 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.
- Strontium-90 Analysis The Sr-90 MDA in the QC Method Blank (2.02 pCi/L) 4.3 was greater than the required detection limit of 2.00 pCi/L. No other 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
- Radium-228 Analysis No problems were encountered during the processing of 4.5 the samples. All quality control sample results were within required control limits
- Total Uranium Analysis No problems were encountered during the processing 4.6 of the samples. All quality control sample results were within required control limits.
- 4.7 Gamma Spectroscopy - The K-40 MDA for the duplicate of sample ITL2724-02 (28.0 pCi/L) was greater than the required detection limit of 25 pCi/L. No other 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."

N. Joseph Verville

Client Services Manager

2/4/11 Date

SDG	8643	
Contact	N. Joseph V	<u>erville</u>

Client	<u>Test America, Inc.</u>
Contract	ITL1881

SUMMARY DATA SECTION

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Lab id	EAS
Protocol	<u>TA</u>
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	02/03/11
*	

SDG 8643

SDG	8643	
Contact	N. Joseph	Verville

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

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

REPORT GUIDES Page 1 SUMMARY DATA SECTION Page 1

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	02/03/11
-	

SDG 8643

SDG	8643	
Contact	N. Joseph	Verville

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

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.

EAS
TA
<u>Ver 1.0</u>
DVD-RG
3.06
02/03/11

REPORT GUIDES Page 2 SUMMARY DATA SECTION Page 2

SDG 8643

SDG <u>8643</u>

Contact N. Joseph Verville

LAB SAMPLE SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S012300-01	ITL1881-02	Boeing - SSFL	WATER			ITL1881	12/18/10 17:10
S012300-02	ITL1881-02 (Trip Blank)	Boeing - SSFL	WATER			ITL1881	12/18/10 17:10
S012300-03	Lab Control Sample		WATER				
S012300-04	Method Blank		WATER				1
S012300-05	Duplicate (S012300-01)	Boeing - SSFL	WATER				12/18/10 17:10
S101004-02	Lab Control Sample		WATER				
S101004-03	Method Blank		WATER				
S101004-04	Duplicate (S101004-01)	Boeing - SSFL	WATER				12/30/10 02:55

LAB SUMMARY Page 1 SUMMARY DATA SECTION Page 3

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-LS</u> Version <u>3.06</u> Report date <u>02/03/11</u>

SDG <u>8643</u> Contact <u>N. Joseph Verville</u>

SDG 8643

QC SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	* MOIST	SAMPLE	BASIS AMOUNT	DAYS S		LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8643	ITL1881	ITL1881-02 ITL1881-02 (Trip Blank)	WATER WATER		9.5 L 9.5 L	-	12/21/10 12/21/10	3 3	S012300-01 S012300-02	8643-001 8643-002
		Method Blank Lab Control Sample Duplicate (S012300-01)	WATER WATER WATER		9.5 L		12/21/10	3	S012300-04 S012300-03 S012300-05	8643-004 8643-003 8643-005
8657		Method Blank Lab Control Sample Duplicate (S101004-01)	WATER WATER WATER	n,	10.0 L		12/31/10	1	S101004-03 S101004-02 S101004-04	8657-003 8657-002 8657-004

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-QS</u> Version <u>3.06</u> Report date <u>02/03/11</u>

QC SUMMARY Page 1 SUMMARY DATA SECTION Page 4

SDG 8643

SDG <u>8643</u>

Contact N. Joseph Verville

PREP BATCH SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

		PREPARATION ERROR				- PLA	QUALI-				
TEST	MATRIX	METHOD	BATCH	20 %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG MS/ORIG	FIERS
Beta	Counting										
AC	WATER	Radium-228 in Water	7258-155	10.4	1			1	1	1/1	
			7271-039	10.4	1			1	1	1/0/1	
SR	WATER	Strontium-90 in Water	7258-155	10.4	1			1	1	1/1	
			7271-039	10.4	1			1	1	1/0/1	
Gas E	roportion	al Counting									
80A	WATER	Gross Alpha in Water	7258-155	20.6	1			1	1	1/1	
			7271-039	20.6	1			1	1	1/0/1	
80B	WATER	Gross Beta in Water	7258-155	11.0	1			1	1	1/1	
			7271-039	11.0	l			1	1	1/0/1	
Gamma	a Spectros	сору									
GAM	WATER	Gamma Emitters in Water	7258-155	7.0	1,			1	1	1/1	
			7271-039	7.0	1			1	1	1/0/1	
Kinet	ic Phosph	orimetry, ug									
U_T	WATER	Uranium, Total	7258-155		1			1	1	1/1	
			7271-039		1			1	1	1/0/1	
Liqu:	id Scintil	lation Counting									
н	WATER	Tritium in Water	7258-155	10.0	1			1	1	1/1	
Rado	n Counting	1									
RA	WATER	Radium-226 in Water	7258-155	16.4	1			1	1	1/1	
			7271-039	16.4	1			1	1	1/0/1	

Blank, LCS, Duplicate and Spike planchets are those in the same preparation batch as some Client sample. In counts like a/b/c', a' = QC planchets, b' = Originals in this SDG, c' = Originals in other SDGs.

PREP BATCH SUMMARY Page 1 SUMMARY DATA SECTION Page 5

Lab id	EAC
Lab Id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-PBS
Version	3.06
Report date	02/03/11

SDG 8643

SDG <u>8643</u> Contact <u>N. Joseph Verville</u>

LAB WORK SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY SAS no	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	ву	METHOD
S012300-01	ITL1881-02 ·		8643-001	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water
12/18/10	Boeing - SSFL	WATER	8643-001	80B/80		01/04/11	01/17/11	BW	Gross Beta in Water
12/21/10	ITL1881		8643-001	AC		01/21/11	01/27/11	BW	Radium-228 in Water
			8643-001	GAM		12/29/10	01/14/11	MWT	Gamma Emitters in Water
			8643-001	н		01/13/11	01/18/11	BW	Tritium in Water
			8643-001	RA		01/06/11	01/24/11	BW	Radium-226 in Water
			8643-001	SR		01/06/11	01/26/11	BW	Strontium-90 in Water
			8643-001	U_T		01/18/11	01/21/11	BW	Uranium, Total
S012300-02	ITL1881-02 (Trip Blank)		8643-002	80A/80		01/14/11	01/17/11	BW	Gross Alpha in Water
12/18/10	Boeing - SSFL	WATER	8643-002	80B/80		01/14/11	01/17/11	BW	Gross Beta in Water
12/21/10	ITL1881		8643-002	AC		01/26/11	01/27/11	BW	Radium-228 in Water
			8643-002	GAM		01/13/11	01/14/11	MWT	Gamma Emitters in Water
			8643-002	RA		01/24/11	01/24/11	BW	Radium-226 in Water
		2	8643-002	SR		01/24/11	01/26/11	BW	Strontium-90 in Water
			8643-002	U_T		01/20/11	01/21/11	BW	Uranium, Total
S012300-03	Lab Control Sample		8643-003	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water
		WATER	8643-003	80B/80		01/04/11	01/17/11	BW	Gross Beta in Water
			8643-003	AC		01/21/11	01/27/11	BW	Radium-228 in Water
			8643-003	GAM		12/29/10	01/14/11	MWT	Gamma Emitters in Water
			8643-003	н		01/13/11	01/18/11	BW	Tritium in Water
			8643-003	RA		01/06/11	01/24/11	BW	Radium-226 in Water
			8643-003	SR		01/06/11	01/26/11	BW	Strontium-90 in Water
			8643-003	U_T		01/18/11	01/21/11	BW	Uranium, Total
S012300-04	Method Blank		8643-004	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water
		WATER	8643-004	80B/80		01/04/11	01/17/11	BW	Gross Beta in Water
			8643-004	AC		01/21/11	01/27/11	BW	Radium-228 in Water
			8643-004 [′]	GAM		12/30/10	01/14/11	MWT	Gamma Emitters in Water
			8643-004	н		01/13/11	01/18/11	BW	Tritium in Water
			8643-004	RA		01/06/11	01/24/11	BW	Radium-226 in Water
	*		8643-004	SR		01/06/11	01/26/11	BW	Strontium-90 in Water
			8643-004	U_T		01/18/11	01/21/11	BW	Uranium, Total

Lab id <u>EAS</u> Protocol <u>TA</u> Version Ver 1.0 Form DVD-LWS Version 3.06 Report date 02/03/11

WORK SUMMARY Page 1 SUMMARY DATA SECTION Page 6

SDG 8643

SDG <u>8643</u> Contact <u>N. Joseph Verville</u>

WORK SUMMARY, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

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LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY SAS no	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	ву	METHOD
S012300-05	Duplicate (S012300-01)		8643-005	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water
12/18/10	Boeing - SSFL	WATER	8643-005	80B/80		01/04/11	01/17/11	BW	Gross Beta in Water
12/21/10			8643-005	AC		01/21/11	01/27/11	BW	Radium-228 in Water
			8643-005	GAM		12/30/10	01/14/11	MWT	Gamma Emitters in Water
			8643-005	н		01/13/11	01/18/11	BW	Tritium in Water
			8643-005	RA		01/06/11	01/24/11	BW	Radium-226 in Water
			8643-005	SR		01/06/11	01/26/11	BW	Strontium-90 in Water
			8643-005	U_T		01/18/11	01/21/11	BW	Uranium, Total
S101004-02	Lab Control Sample		8657-002	80 A /80		01/11/11	01/12/11	BW	Gross Alpha in Water
		WATER	8657-002	80B/80		01/11/11	01/12/11	BW	Gross Beta in Water
			8657-002	AC		01/26/11	01/31/11	BW	Radium-228 in Water
			8657-002	GAM		01/10/11	01/31/11	MWT	Gamma Emitters in Water
			8657-002	RA		01/21/11	01/24/11	BW	Radium-226 in Water
			8657-002	SR		01/26/11	01/31/11	BW	Strontium-90 in Water
		<i></i>	8657-002	U_T		01/20/11	01/24/11	BW	Uranium, Total
S101004-03	Method Blank		8657-003	80A/80		01/11/11	01/12/11	BW	Gross Alpha in Water
		WATER	8657-003	80B/80		01/11/11	01/12/11	BW	Gross Beta in Water
			8657-003	AC		01/26/11	01/31/11	BW	Radium-228 in Water
			8657-003	GAM		01/10/11	01/31/11	MWT	Gamma Emitters in Water
			8657-003	RA		01/21/11	01/24/11	BW	Radium-226 in Water
			8657-003	SR		01/26/11	01/31/11	BW	Strontium-90 in Water
			8657-003	U_T .		01/20/11	01/24/11	BW	Uranium, Total
S101004-04	Duplicate (S101004-01)		8657-004	80A/80		01/11/11	01/12/11	BW	Gross Alpha in Water
12/30/10	Boeing - SSFL	WATER	8657-004	80B/80		01/11/11	01/12/11	BW	Gross Beta in Water
12/31/10			8657-004	AC		01/26/11	01/31/11	BW	Radium-228 in Water
			8657-004	GAM		01/11/11	01/31/11	MWT	Gamma Emitters in Water
			8657-004	RA		01/21/11	01/24/11	BW	Radium-226 in Water
			8657-004	SR		01/26/11	01/31/11	BW	Strontium-90 in Water
			8657-004	U_T		01/20/11	01/24/11	BW	Uranium, Total

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LWS
Version	3.06
Report date	02/03/11

WORK SUMMARY Page 2 SUMMARY DATA SECTION Page 7

SDG 8643

SDG <u>8643</u>

Contact N. Joseph Verville

WORK SUMMARY, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

TEST	SAS no	COUNTS METHOD	OF TESTS REFERENCE	ВҮ	SAMPLE TYPE CLIENT MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
/		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~			2		2	2	2	8
80A/80		Gross Alpha in Water	900.0				_			
80B/80		Gross Beta in Water	900.0		2		2	2	2	8
AC		Radium-228 in Water	904.0		2		2	2	2	8
GAM		Gamma Emitters in Water	901.1		2		2	2	2	8
н		Tritium in Water	906.0		1		1	1	1	4
RA		Radium-226 in Water	903.1		2		2	2	2	8
SR		Strontium-90 in Water	905.0		2		2	2	2	8
U_T		Uranium, Total	D5174		2		2	2	2	8
TOTALS					15		15	15	15	60

WORK SUMMARY Page 3 SUMMARY DATA SECTION Page 8 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-LWS</u> Version <u>3.06</u> Report date <u>02/03/11</u>

8643-004

Method Blank

METHOD BLANK

SDG <u>8643</u>	Client	<u>Test America, Inc.</u>	
Contact <u>N. Joseph Verville</u>	Contract	ITL1881	
Lab sample id <u>S012300-04</u> Dept sample id <u>8643-004</u>	Client sample id Material/Matrix		WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Grade Alpha	12587461	-0.006	0.27	0.617	3.00	υ	80A
Gross Alpha Gross Beta	12587481	-0.008	0.27	0.017	4.00	U	80B
Tritium	10028178	-94.9	170	294	500	U	н
Radium-226	13982633	0.052	0.48	0.888	1.00	U	RA
Radium-228	15262201	0.032	0.17	0.396	1.00	U	AC
Strontium-90	10098972	-0.110	0.53	1.27	2.00	U	SR
Uranium, Total		· 0	0.008	0.019	1.00	U	UT
Potassium-40	13966002	U		24.4	25.0	U	GAM
Cesium-137	10045973	U		2.00	20.0	U	GAM

QC-BLANK #76649

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-DS
Version	3.06
Report date	02/03/11

METHOD BLANKS Page 1 SUMMARY DATA SECTION Page 9

8657-003

Method Blank

METHOD BLANK

	8643 N. Joseph Verville	Client Contract	<u>Test America, Inc.</u> ITL1881	
Lab sample id Dept sample id		Client sample id Material/Matrix		WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.035	0.30	0.620	3.00	υ	80A
Gross Beta	12587472	-0.211	0.63	1.11	4.00	U	80B
Tritium	10028178	N.A.			500		н
Radium-226	13982633	0.053	0.35	0.627	1.00	U	RA
Radium-228	15262201	-0.165	0.28	0.717	1.00	U	AC
Strontium-90	10098972	0.357	0.92	2.02	2.00	U	SR
Uranium, Total		0	0.007	0.017	1.00	U	υт
Potassium-40	13966002	υ		22.5	25.0	υ	GAM
Cesium-137	10045973	υ		0.916	20.0	υ	GAM

QC-BLANK #76735

METHOD BLANKS Page 2 **SUMMARY DATA SECTION** Page 10

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-DS
Version	3.06
Report date	02/03/11

SDG 8643

LAB CONTROL SAMPLE

8643-003

Lab Control Sample

SDG <u>8643</u> Contact <u>N. Joseph Verville</u>

Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

Client sample id Lab Control Sample______ Material/Matrix ______

WATER

Lab sample id <u>S012300-03</u> Dept sample id <u>8643-003</u>

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED pCi/L	20 ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	43.6	2.4	0.575	3.00		80A	40.4	1.6	108	77-123	70-130
Gross Beta	33.7	1.5	1.23	4.00		80B	35.0	1.4	96	88-112	70-130
Tritium	2330	270	297	500		н	2550	100	91	85-115	80-120
Radium-226	46.2	1.9	0.686	1.00		RA	55.7	2.2	83	85-115	80-120
Radium-228	3.81	0.83	0.391	1.00		AC	4.63	0.19	82	80-120	60-140
Strontium-90	17.1	1.5	0.850	2.00		SR	17.5	0.70	98	86-114	80-120
Uranium, Total	58.7	6.6	0.188	1.00		U_T	56.5	2.3	104	88-112	80-120
Cobalt-60	98.6	4.6	2.03	10.0		GAM	102	4.1	97	91-109	80-120
Cesium-137	113	4.3	2.86	20.0		GAM	110	4.4	103	91-109	80-120

QC-LCS #76648

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-LCS</u> Version <u>3.06</u> Report date <u>02/03/11</u>

LAB CONTROL SAMPLES Page 1 SUMMARY DATA SECTION Page 11

SDG 8643

8657-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>8643</u> Contact <u>N. Joseph Verville</u> Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

Lab sample id <u>S101004-02</u> Dept sample id <u>8657-002</u> Client sample id Lab Control Sample 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)	PROTOCOI LIMITS
Gross Alpha	36.1	2.2	0.821	3.00		80A	40.4	1.6	89	80-120	70-130
Gross Beta	33.7	1.4	1.13	4.00		80B	35.0	1.4	96	88-112	70-130
Tritium	N.A.			500		н					80-120
Radium-226	59.0	2.5	0.639	1.00		RA	55.7	2.2	106	82-118	80-120
Radium-228	4.07	0.98	0.438	1.00		AC	4.62	0.18	88	77-123	60-140
Strontium-90	17.8	1.9	1.12	2.00		SR	17.5	0.70	102	84-116	80-120
Uranium, Total	60.8	7.3	0.174	1.00		U_T	62.5	2.5	97	88-112	80-120
Cobalt-60	104	5.2	2.76	10.0		GAM	102	4.1	102	90-110	80-120
Cesium-137	117	4.6	3.40	20.0		GAM	110	4.4	106	91-109	80-120

QC-LCS #76734

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LCS
Version	3.06
Report date	02/03/11

LAB CONTROL SAMPLES Page 2 SUMMARY DATA SECTION Page 12

SDG 8643

8643-005

ITL1881-02

DUPLICATE

SDG <u>8643</u>		Client <u>Test America, Inc.</u>
Contact N. Joseph Vervil	lle	Contract ITL1881
DUPLICATE	ORIGINAL	
Lab sample id <u>S012300-05</u>	Lab sample id <u>S012300-01</u>	Client sample id <u>ITL1881-02</u>
Dept sample id <u>8643-005</u>	Dept sample id <u>8643-001</u>	Location/Matrix Boeing - SSFL WATER
	Received <u>12/21/10</u>	Collected/Volume <u>12/18/10 17:10 9.5 L</u>
		Chain of custody id ITL1881

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 o
Gross Alpha	1.05	0.34	0.322	3.00	J	A08	1.22	0.35	0.326	J	15	78	0.6
Gross Beta	1.72	0.54	0.800	4.00	J	80B	1.61	0.57	0.853	J	7	74	0.3
Tritium	-140	160	295	500	υ	н	-81.5	170	294	U	-		0.5
Radium-226	0.840	0.40	0.558	1.00	J	RA	0.332	0.37	0.604	U	87	144	1.8
Radium-228	0.187	0.20	0.435	1.00	υ	AC	0.118	0.21	0.459	U	-		0.5
Strontium-90	-0.065	0.41	0.986	2.00	υ	SR	0.012	0.48	1.12	U	-		0.2
Uranium, Total	0.102	0.014	0.019	1.00	J	U_T	0.103	0.014	0.019	J	1	29	0.1
Potassium-40	υ		20.3	25.0	U	GAM	υ		17.8	U	-		0.2
Cesium-137	υ		1.86	20.0	υ	GAM	υ		1.28	υ	- '		0.5

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QC-DUP#1 76650

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DUPLICATES Page 1 SUMMARY DATA SECTION Page 13 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-DUP</u> Version <u>3.06</u> Report date <u>02/03/11</u>

SDG 8643

8657-004

ITL2724-02

DUPLICATE

SDG <u>8643</u>	χ.	Client Test America, Inc.
Contact N. Joseph Verville		Contract <u>ITL1881</u>
DUPLICATE	ORIGINAL	
Lab sample id <u>S101004-04</u>	Lab sample id <u>S101004-01</u>	Client sample id <u>ITL2724-02</u>
Dept sample id <u>8657-004</u>	Dept sample id <u>8657-001</u>	Location/Matrix Boeing - SSFL WATER
	Received <u>12/31/10</u>	Collected/Volume <u>12/30/10 02:55</u> 10.0 L
		Chain of custody id <u>ITL2724</u>

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 τοτ	DER σ
Gross Alpha	0.672	0.31	0.372	3.00	J	80A	0.336	0.29	0.412	U	67	134	1.5
Gross Beta	1.60	0.58	0.884	4.00	J	80B	1.23	0.54	0.835	J	26	87	0.9
Tritium	N.A.			500		н	N.A.						
Radium-226	0.082	0.32	0.566	1.00	U	RA	0.146	0.31	0.541	U	-		0.3
Radium-228	0.063	0.29	0.734	1.00	Ū	AC	0.030	0.21	0.458	U	-		0.2
Strontium-90	-0.236	0.71	1.75	2.00	U	SR	-0.099	0.80	1.94	U	-		0.3
Uranium, Total	0.082	0.012	0.017	1.00	J	U_T	0.093	0.013	0.017	J	13	30	1.2
Potassium-40	υ		28.0	25.0	υ	GAM	υ		16.2	U	-		0.7
Cesium-137	U		1.50	20.0	υ	GAM	υ		1.25	U	-		0.3

QC-DUP#1 76736

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-DUP
Version	3.06
Report date	02/03/11

DUPLICATES Page 2 SUMMARY DATA SECTION Page 14

8643-001

ITL1881-02

DATA SHEET

	8643	Client	<u>Test America, Inc.</u>
	N. Joseph Verville	Contract	ITL1881
Lab sample id Dept sample id Received	<u>8643-001</u> 12/21/10	Client sample id Location/Matrix Collected/Volume ain of custody id	Boeing - SSFL WATER 12/18/10 17:10 9.5 L

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	1.22	0.35	0.326	3.00	J	80A
Gross Beta	12587472	1.61	0.57	0.853	4.00	J	80B
Tritium	10028178	-81.5	170	294	500	U	H
Radium-226	13982633	0.332	0.37	0.604	1.00	υ	RA
Radium-228	15262201	0.118	0.21	0.459	1.00	U	AC
Strontium-90	10098972	0.012	0.48	1.12	2.00	U	SR
Uranium, Total		0.103	0.014	0.019	1.00	J	U_T
Potassium-40	13966002	U		17.8	25.0	U	GAM
Cesium-137	10045973	υ		1.28	20.0	U	GAM

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-DS
Version	3.06
Report date	02/03/11

DATA SHEETS Page 1 SUMMARY DATA SECTION Page 15

SDG 8643

8643-002

ITL1881-02 (Trip Blank)

DATA SHEET

1	8643 N. Joseph Verville	Client Contract	<u>Test America, Inc.</u> ITL1881	
Lab sample id Dept sample id Received	8643-002 12/21/10	Client sample id Location/Matrix Collected/Volume ain of custody id	<u>12/18/10 17:10 9.5 L</u>	-

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	-0.162	0.14	0.332	3.00	U	80A
Gross Beta	12587472	-0.780	0.56	0.978	4.00	U	80B
Radium-226	13982633	0.415	0.32	0.492	1.00	U	RA
Radium-228	15262201	-0.097	0.16	0.383	1.00	U	AC
Strontium-90	10098972	0.238	0.35	0.653	2.00	U	SR
Uranium, Total		0	0.007	0.017	1.00	U	UΤ
Potassium-40	13966002	U		14.5	25.0	U	GAM
Cesium-137	10045973	U		1.14	20.0	U	GAM

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-DS
Version	3.06
Report date	02/03/11

DATA SHEETS Page 2 SUMMARY DATA SECTION Page 16

SDG 8643

Test	AC Matrix WATER
SDG	8643
Contact	N. Joseph Verville

LAB METHOD SUMMARY RADIUM-228 IN WATER BETA COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX		CLIENT SAMPLE ID	Radium	1-228			
Preparation	batch 725	8-155						
S012300-01		8643-001	ITL1881-02	U				
S012300-03		8643-003	Lab Control Sample	ok				
S012300-04		8643-004	Method Blank	U				
S012300-05		8643-005	Duplicate (S012300-01)	-	υ			
Preparation	h batch 727	71-039	allan (1997)			 	 	
- S012300-02		8643-002	ITL1881-02 (Trip Blank)	U				
S101004-02		8657-002	Lab Control Sample	ok				
S101004-03		8657-003	Method Blank	U				
		8657-004	Duplicate (S101004-01)	-	U			

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7258-155 2 σ prep error			Lab N	locepool		1258		55				
S012300-01	ITL1881-02	0.459	1.80			80		150		34	01/21/11	01/21	GRB-201
S012300-03	Lab Control Sample	0.391	1.80			88		150			01/21/11	01/21	GRB-202
S012300-04	Method Blank	0.396	1.80			85		150			01/21/11	01/21	GRB-203
S012300-05	Duplicate (S012300-01)	0.435	1.80			78		150		34	01/21/11	01/21	GRB-204
Preparation	batch 7271-039 2 prep error	10.4 % Re	ference	Lab N	loteboo	k No. '	7271	pg.03	ə		,		
- S012300-02	ITL1881-02 (Trip Blank)	0.383	1.80			82		150		39	01/26/11	01/26	GRB-230
S101004-02	Lab Control Sample	0.438	1.80			85		150			01/26/11	01/26	GRB-204
S101004-03	Method Blank	0.717	1.80			88		150			01/26/11	01/26	GRB-229
S101004-04	Duplicate (S101004-01)	0.734	1.80			78		150		27	01/26/11	01/26	GRB-230
	ues and limits from method	1.00	1.80			30-10		50		180			

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-LMS</u> Version <u>3.06</u> Report date <u>02/03/11</u>

METHOD SUMMARIES Page 1 SUMMARY DATA SECTION Page 17

SDG 8643

Test	AC Matrix
SDG	8643
Contact	N. Joseph Verville

LAB METHOD SUMMARY, cont.

Client Test America, Inc. Contract ITL1881

	RADIUM-228 IN WATER
,	BETA COUNTING

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

AVERAGES ± 2 SD	MDA	0.494	±	0.291
FOR 8 SAMPLES	YIELD	83	±	8

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	02/03/11

METHOD SUMMARIES Page 2 SUMMARY DATA SECTION Page 18

SDG 8643

Test	<u>SR</u> Matrix <u>WATER</u>
SDG	8643
Contact	N. Joseph Verville

LAB METHOD SUMMARY STRONTIUM-90 IN WATER BETA COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

RESULTS

LAB RAW				
SAMPLE ID TES	T FIX PLANCHET	CLIENT SAMPLE ID	Strontium-90	
Preparation bat	ch 7258-155			
S012300-01	8643-001	ITL1881-02	υ	
S012300-03	8643-003	Lab Control Sample	ok	
S012300-04	8643-004	Method Blank	υ	
S012300-05	8643-005	Duplicate (S012300-01)	- U	
Preparation bat	ch 7271-039			 var.o.
S012300-02	8643-002	ITL1881-02 (Trip Blank)	U	
S101004-02	8657-002	Lab Control Sample	ok	
S101004-03	8657-003	Method Blank	U	
5101004-03		Duplicate (S101004-01)	- U	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT	SAMPLE	ID		DA i/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT	FWHM keV	DRIFT KeV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batcl	n 725	8-155	2σ p	rep err	or 10.4	₹ Re	ference	Lab N	otebool	No.	7258	pg. 19	55					
S012300-01			ITL1881	-02		1	.12	0.500			76		50			19	01/06/11	01/06	GRB-223
S012300-03			Lab Cor	ntrol Sa	ample	0	.850	0.500			86		50				01/07/11	01/06	GRB-206
S012300-04			Method	Blank		1	.27	0.500			69		50				01/07/11	<u>01/06</u>	GRB-221
S012300-05			Duplica	ate (SO	12300-0	1) 0	.986	0.500			85		50			20	01/07/11	01/06	GRB-222
Preparation S012300-02	batcl	n 727:	1-039 ITL1881	_	-	or 10.4		ference	Lab N	otebooł	NO. 7	7271	pg.039	•		37	01/19/11	01/24	GRB-221
S101004-02			Lab Cor		-		.12	0.500			59		50			57	01/19/11		GRB-221
S101004-03			Method				.02	0.500			44		50				01/19/11	01/26	GRB-230
S101004-04			Duplica	ite (S10	01004-0	1) 1	.75	0.500			55		50			27	01/19/11	01/26	GRB-231
Nominal valu	les ar	nd lin	mits fro	om metho	bd	2	.00	0.500			30-105	5	50			180			

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-LMS</u> Version <u>3.06</u> Report date <u>02/03/11</u>

METHOD SUMMARIES Page 3 SUMMARY DATA SECTION Page 19

SDG 8643

Test	<u>SR</u> Matrix
SDG	8643
Contact	N. Joseph Verville

LAB METHOD SUMMARY, cont.

STRONTIUM-90 IN WATER BETA COUNTING Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

FOR 8 SAMPLE	2 SD MDA _	$1.22 \pm$	0.912
DWP-380 Strontium in Drinking Water, rev 8 FOR 8 SAMPLE	LES YIELD _	<u> 69 </u>	

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LMS</u>
Version <u>3.06</u>
Report date <u>02/03/11</u>

METHOD SUMMARIES Page 4 SUMMARY DATA SECTION Page 20

SDG 8643

Test <u>80A</u> Matrix <u>WATER</u> SDG <u>8643</u> Contact <u>N. Joseph Verville</u>

LAB METHOD SUMMARY GROSS ALPHA IN WATER GAS PROPORTIONAL COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

RESULTS

RAW SUF-

LAB

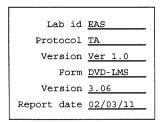
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross 1	Alpha
Preparation	batch 725	8-155			
S012300-01	80	8643-001	ITL1881-02	1.22	J
S012300-03	80	8643-003	Lab Control Sample	ok	
S012300-04	80	8643-004	Method Blank	U	
S012300-05	80	8643-005	Duplicate (S012300-01)	ok	J
Preparation batch 7271-039 S012300-02 80 8643-002 ITL1881-02 (Trip Blank)					
S101004-02		8657-002	Lab Control Sample	U ok	
S101004-03	80	8657-003	Method Blank	U	
	80	8657-004	Duplicate (S101004-01)	ok	J

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC		RESID mg	EFF %	COUNT min	FWHM keV			PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 725	8-155 2σ prep error 20	0.6 % Re	ference	Lab N	loteboo	k No.	7258	pq. 15	55					
S012300-01		ITL1881-02	0.326				13		400			17	12/31/10	01/04	GRB-101
S012300-03	80	Lab Control Sample	0.575	0.250			54		400				12/31/10	01/04	GRB-103
S012300-04	80	Method Blank	0.617	0.250			56		400				12/31/10	01/04	GRB-104
S012300-05	80	Duplicate (S012300-01)	0.322	0.300			14		400			17	12/31/10	01/04	GRB-109
Preparation	batch 727	1-039 2σ prep error 20	0.6 % Re	ference	Lab N	loteboo	k No.	7271	pg.039		:				
S012300-02	80	ITL1881-02 (Trip Blank)	0.332	0.300			0		400			27	01/14/11	01/14	GRB-103
S101004-02	80	Lab Control Sample	0.821	0.250			62		400				01/11/11	01/11	GRB-214
S101004-03	80	Method Blank	0.620	0.250			61		400				01/11/11	01/11	GRB-216
S101004-04	80	Duplicate (S101004-01)	0.372	0.300			20		400			12	01/11/11	01/11	GRB-105
Nominal val	ues and li	mits from method	3.00	0.250			0-20	0	100			180			

,

METHOD SUMMARIES Page 5 SUMMARY DATA SECTION Page 21



SDG 8643

Test	<u>80A</u> Matrix	
SDG	8643	
Contact	N. Joseph Verville	

LAB METHOD SUMMARY, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

GROSS ALPHA IN WATER GAS PROPORTIONAL COUNTING

PROCEDURES	REFERENCE	900.0	AVERAGES
	DWP-121	Gross Alpha and Gross Beta in Drinking Water,	FOR 8 SAM
		rev 10	L

				•	l
AVERAGES ± 2 SD	MDA _	0.498	±	0.373	
FOR 8 SAMPLES	RESIDUE -	35	±		

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	02/03/11

METHOD SUMMARIES Page 6 SUMMARY DATA SECTION Page 22

SDG 8643

Test	80B Matrix WATER
SDG	8643
Contact	N. Joseph Verville

LAB METHOD SUMMARY

GROSS BETA IN WATER GAS PROPORTIONAL COUNTING Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

RESULTS

LAB SAMPLE ID	RAW SU TEST FI	JF- LX PLANCHET	CLIENT SAMPLE ID	Gross B	Beta
Preparation	batch '	7258-155			
S012300-01		8643-001	ITL1881-02	1.61	J
S012300-03	80	8643-003	Lab Control Sample	ok	
S012300-04	80	8643-004	Method Blank	υ	
S012300-05	80	8643-005	Duplicate (S012300-01)	ok	J
Preparation	h batch	7271-039	anter de la composition		
S012300-02		8643-002	ITL1881-02 (Trip Blank)	υ	
S101004-02	80	8657-002	Lab Control Sample	ok	
S101004-03	80	8657-003	Method Blank	U	
S101004-04		8657-004	Duplicate (S101004-01)	ok	J
Nominal val	lues and	limits from m	ethod RDLs (pCi/L)	4.00	0

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	RESID mg	EFF %		FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 725	8-155 2σ prep error 1:	1.0 % Re	ference	Lab N	oteboo	k No.	7258	pg. 1	55				
S012300-01		ITL1881-02	0.853	0.300			13		400		17	12/31/10	01/04	GRB-101
	80	Lab Control Sample	1.23	0.250			54		400			12/31/10	01/04	GRB-103
	80	Method Blank	0.950	0.250			56		400			12/31/10		GRB-104
S012300-05		Duplicate (S012300-01)	0.800	0.300			14		400		17	12/31/10	01/04	GRB-109
Preparation	batch 727	1-039 2σ prep error 1	1.0 % Re	ference	Lab N	loteboo	k No.	7271	pg.03	9				
S012300-02	80	ITL1881-02 (Trip Blank)	0.978				0		400		27	01/14/11	01/14	GRB-103
		Lab Control Sample	1.13	0.250			62		400			01/11/11	01/11	GRB-214
S101004-03		Method Blank	1.11	0.250			61		400			01/11/11	01/11	GRB-216
S101004-04		Duplicate (S101004-01)	0.884	0.300			20		400		 12	01/11/11	01/11	GRB-105
Nominal val	ues and li	mits from method	4.00	0.250			0-20	00	100		180			

METHOD SUMMARIES Page 7 SUMMARY DATA SECTION Page 23

SDG 8643

80B Matrix
8643
N. Joseph Verville

LAB METHOD SUMMARY, cont.

GROSS BETA IN WATER GAS PROPORTIONAL COUNTING Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

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

AVERAGES ± 2 SD	MDA _	0.992	±	0.302	
FOR 8 SAMPLES	RESIDUE _	35	±	51	

Lab id <u>EAS</u>	
Protocol <u>TA</u>	
Version Ver 1.0	
Form DVD-LMS	
Version 3.06	
Report date <u>02/03/11</u>	

METHOD SUMMARIES Page 8 SUMMARY DATA SECTION Page 24

SDG 8643

Test <u>GAM</u> Matrix <u>WATER</u> SDG <u>8643</u> Contact <u>N. Joseph Verville</u>

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER GAMMA SPECTROSCOPY Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

RESULTS

LAB SAMPLE ID	raw Test	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium	-137
Preparation	batc	h 725	8-155				
S012300-01	2400		8643-001	ITL1881-02		υ	
S012300-03			8643-003	Lab Control Sample	ok	ok	
5012300-04			8643-004	Method Blank		υ	
S012300-05			8643-005	Duplicate (S012300-01)		-	υ
Preparation	a batc	h 727	1-039		<u>,</u>		
S012300-02			8643-002	ITL1881-02 (Trip Blank)		U	
S101004-02			8657-002	Lab Control Sample	ok	ok	
S101004-03			8657-003	Method Blank		υ	
S101004-04			8657-004	Duplicate (S101004-01)		-	υ
Nominal va	lues a	and 1:	imits from m	method RDLs (pCi/L)	10.0	20.0	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT	SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min			PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 725	3-155	2σ prep error 7	.0 % Re	ference	Lab N	lotebool	k No.	7258	pg. 1	55				
S012300-01		ITL188:	1-02		2.00					634		11	12/22/10	12/29	01,03,00
S012300-03		Lab Con	ntrol Sample		2.00					630			12/22/10	12/29	01,04,00
5012300-04		Method	-		2.00					406			12/22/10	12/30	01,01,00
S012300-04			ate (S012300-01)		2.00					406		12	12/22/10	12/30	01,02,00
Preparation	batch 727	1-039	2σ prep error 7	7.0 % Re	ference	Lab M	loteboo	k No.	7271	pg.03	9				
S012300-02			1-02 (Trip Blank)		2.00					711		26	01/10/11	01/13	MB,08,00
S101004-02			ntrol Sample		2.00					946			01/10/11	01/10	MB,05,00
S101004-02		Method			2.00					924			01/10/11	01/10	MB,08,00
S101004-04			ate (S101004-01)		2.00					596		 12	01/10/11	01/11	01,02,00
Nominal val	ues and li	mits fr	om method	6.00	2.00					400		180			-

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	02/03/11

METHOD SUMMARIES Page 9 SUMMARY DATA SECTION Page 25

SDG 8643

Test	GAM_ Matrix
SDG	8643
Contact	N. Joseph Verville

LAB METHOD SUMMARY, cont.

Client Test America, Inc. Contract ITL1881

GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

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

METHOD SUMMARIES Page 10 SUMMARY DATA SECTION Page 26

Lab id	EAS
Protocol	<u>AT</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	02/03/11

SDG 8643

Test <u>U T</u> Matrix <u>WATER</u> SDG <u>8643</u> Contact <u>N. Joseph Verville</u>

LAB METHOD SUMMARY

URANIUM, TOTAL KINETIC PHOSPHORIMETRY, UG Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

RESULTS

LAB RAW SAMPLE ID TEST	SUF- FIX PLANCHET	CLIENT SAMPLE ID	Uranium, Total	
Preparation batc	h 7258-155			
S012300-01	8643-001	ITL1881-02	0.103 J	
S012300-03	8643-003	Lab Control Sample	ok	
S012300-04	8643-004	Method Blank	υ	
S012300-05	8643-005	Duplicate (S012300-01)	ok J	 anna - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
Preparation batc	h 7271-039			
S012300-02	8643-002	ITL1881-02 (Trip Blank)	U	
S101004-02	8657-002	Lab Control Sample	ok	
S101004-03	8657-003	Method Blank	υ	
S101004-04	8657-004	Duplicate (S101004-01)	ok J	
Nominal values a	und limits from m	nethod RDLs (pCi/L)	1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX		SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC		ÅIEPD	EFF %	COUNT min		DRIFT KeV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 725	8-155	2ø prep error	Re	ference	Lab N	loteboo]	cNo.	7258	pg. 1	55					
S012300-01		ITL188	1-02	0.019	0.0200								31	01/18/11	01/18	KPA-001
S012300-03		Lab Co	ntrol Sample	0.188	0.0200									01/18/11	01/18	KPA-001
S012300-04		Method		0.019	0.0200									01/18/11	01/18	KPA-001
S012300-05			ate (S012300-01)	0.019	0.0200								31	01/18/11	01/18	KPA-001
Preparation	batch 727	1-039	2ø prep error	Re	eference	Lab M	lotebool	k No.	7271	pg.03	9,					
S012300-02			1-02 (Trip Blank)	0.017	0.0200								33	01/20/11	01/20	KPA-001
S101004-02		Lab Co	ntrol Sample	0.174	0.0200									01/20/11	01/20	KPA-001
S101004-03			Blank	0.017	0.0200									01/20/11	01/20	KPA-001
S101004-04			ate (S101004-01)	0.017	0.0200								21	01/20/11	01/20	KPA-001
Nominal val	ues and li	mits fr	om method	1.00	0.0200								180			

	1
Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	02/03/11

METHOD SUMMARIES Page 11 SUMMARY DATA SECTION Page 27

SDG 8643

Test	<u>U T</u> Matrix
SDG	8643
Contact	N. Joseph Verville

LAB METHOD SUMMARY, cont.

URANIUM, TOTAL KINETIC PHOSPHORIMETRY, UG Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD	MDA	0.059	±	0.151
FOR 8 SAMPLES	YIELD .		±	

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	02/03/11

METHOD SUMMARIES Page 12 SUMMARY DATA SECTION Page 28

SDG 8643

Test	H Matrix WATER
SDG	8643
Contact	N. Joseph Verville

LAB METHOD SUMMARY

TRITIUM IN WATER

Client <u>Test America, Inc.</u> Contract <u>ITL1881</u>

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Trit	າມກ		
Preparation	batch 72	58-155	<u>, , , , , , , , , , , , , , , , , , , </u>				
S012300-01		8643-001	ITL1881-02	U			
5012300-03		8643-003	Lab Control Sample	ok			
3012300-04		8643-004	Method Blank	U			
S012300-05		8643-005	Duplicate (S012300-01)	-	U		

METHOD PERFORMANCE

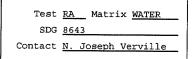
LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/I	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	PREP FAC		YIELD %	EFF %	COUNT min			PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 725	58-155 2σ prep error	10.0 %	Reference	Lab	Noteboo	k No.	7258	pg. 15	55				
S012300-01		ITL1881-02	294	0.0100			100		50		26	01/10/11	01/13	LSC-004
S012300-03		Lab Control Sample	297	0.100			10		50			01/10/11	01/13	LSC-004
S012300-04		Method Blank	294	0.100			10		50			01/10/11	01/13	LSC-004
S012300-05		Duplicate (S012300-01)	295	0.0100			100		50		26	01/10/11	01/13	LSC-004
Nominal val	ues and 1:	imits from method	500	0.0100					100		 180			

PROCEDURES	REFERENCE DWP-212	906.0 Tritium in Drinking Water by Distillation, rev 8	AVERAGES ± 2 SD FOR 4 SAMPLES	MDA <u>295</u> ± <u>2.83</u> YIELD <u>55</u> ± 104

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	02/03/11

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LAB METHOD SUMMARY RADIUM-226 IN WATER RADON COUNTING

Client Test America, Inc. Contract <u>ITL1881</u>

RESULTS

LAB RAW SAMPLE ID TEST	SUF- FIX PLANCHET		n 11	
	FIX PLANCHET	CLIENT SAMPLE ID	Radium-226	
Preparation bate	h 7258-155			
S012300-01	8643-001	ITL1881-02	υ	
S012300-03	8643-003	Lab Control Sample	ok	
S012300-04	8643-004	Method Blank	U	
S012300-05	8643-005	Duplicate (S012300-01)	ok J	
Preparation batc	h 7271-039			
s012300-02	8643-002	ITL1881-02 (Trip Blank)	. U	
	8643-002 8657-002	ITL1881-02 (Trip Blank) Lab Control Sample	່ ປ ok	
S012300-02 S101004-02 S101004-03				

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX		SAMPLE	ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %		FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 725	8-155	2σ pi	rep error	16.4 % Re:	ference	Lab N	otebool	c No.	7258	pg. 1	55				
S012300-01		ITL1883	-02		0.604	0.100			100		132		19	01/06/11	01/06	RN-015
S012300-03		Lab Cor	ntrol Sa	ample	0.686	0.100			100		132			01/06/11		RN-009
S012300-04		Method	Blank		0.888	0.100			100		70			01/06/11		RN-011
S012300-05		Duplica	te (S01	12300-01)	0.558	0.100			100		132		19	01/06/11	-	
Preparation	batch 727				16.4 % Rei		Lab No	otebook	No.	7271	pg.039)	 			
S012300-02				ip Blank)	0.492	0.100			100		150		37	01/24/11	01/24	RN-012
S101004-02		Lab Con	itrol Sa	umple	0.639	0.100			100		106			01/21/11	01/21	RN-011
S101004-03		Method	Blank		0.627	0.100			100		106			01/21/11	01/21	RN-015
S101004-04		Duplica	te (S10	1004-01)	0.566	0.100			100		106		22	01/21/11	01/21	RN-014
Nominal valu	ues and li	mits fro	m metho	od	1.00	0.100					100		 180			

METHOD SUMMARIES Page 14 SUMMARY DATA SECTION Page 30

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Test	<u>RA</u> Matrix
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LAB METHOD SUMMARY, cont. RADIUM-226 IN WATER RADON COUNTING

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

AVERAGES ± 2 SD	MDA <u>0.632</u> ± <u>0.238</u>
FOR 8 SAMPLES	YIELD 100 ±0

Lab id	EAS
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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.

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SUMMARY DATA SECTION
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Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	02/03/11

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ang	OUTJ	

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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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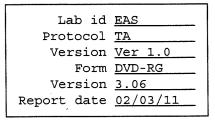
WORK SUMMARY

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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Version	
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DATA SHEET

J	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
В	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.
t.	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.
Н	Similar to 'L' except the recovery was high.
P	The RESULT is 'preliminary'.
х	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	e 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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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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Version	3.06
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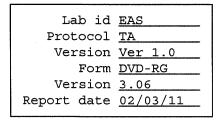
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LAB CONTROL SAMPLE

suj	oporting information for one Lab Control Sample.
The	e 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.

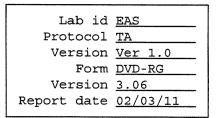
If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

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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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 <u>02/03/11</u>

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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.

> Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>02/03/11</u>

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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'

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>02/03/11</u>

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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

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Lab id EAS Protocol TA Version Ver 1.0 Form DVD-RG Version 3.06 Report date 02/03/11

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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 02/03/11

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GUIDE, cont.

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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.

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Protocol	<u>TA</u>
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SUBCONTRACT ORDER TestAmerica Irvine

ITL1881

8643

RECEIVING LABORATORY: SENDING LABORATORY: **TestAmerica** Irvine **Eberline Services** 2030 Wright Avenue 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Richmond, CA 94804 Phone: (949) 261-1022 Phone :(510) 235-2633 Fax: (510) 235-0438 Fax: (949) 260-3297 Project Manager: Debby Wilson Project Location: California °C Receipt Temperature: Ice: Y / N

Analysis	Units	Due	Expires	Comments
Sample ID: ITL1881-02 (O	utfall 009 (Co	mp) - Water)	Sampled: 12/18/10 1	7:10
Gamma Spec-O	mg/kg	12/23/10	12/18/11 17:10	Out Eberline, k-40 and cs-137 only, DC NOT FILTER!
Gross Alpha-O	pCi/L	12/23/10	06/16/11 17:10	Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	12/23/10	06/16/11 17:10	Out Eberline Boeing permit, DO NOT FILTER!
Radium, Combined-O	pCi/L	12/23/10	12/18/11 17:10	Out Eberline Boeing permit, DO NOT FILTER!
Strontium 90-0	pCi/L	12/23/10	12/18/11 17:10	Out Eberline, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	12/23/10	12/18/11 17:10	Out Eberline, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	12/23/10	12/18/11 17:10	Out Eberline, Boeing permit, DO NOT FILTER!
Containers Supplied:				
2.5 gal Poly (H) HNO3	500 mL Am	ber (I)		
Sample ID: ITL1881-03 (Ti	rip Blank - Wa	iter)	Sampled: 12/18/10 1	7:10 HOLD
HOLD	N/A	12/23/10	12/18/11 17:10	
Containers Supplied:				
2.5 gal Poly (A) HNO:	3			· · · · ·

() with	12/20/10	Fed-e	EK I	2/20/10	
Released By	Date/Time	Received By	1 0 0	Date/Time	ŕ
FEDER	12/21/10	10:00 Alex	Kluf	12/2//	10
Released By	Date/Time	Received By		Date/Time	Page 1 of 1

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lient:	Test	AMER	<u>1CA</u>	ity <u>IRV</u>	INE	State	CA	
	maning	Nallio	10.100 COC NO.	ITL 1	88/			
ate/ I inte	IECEIVEC	several	 Perwested 1	FAT (Davs)	The DP.O. Rec	eived Yes []	No[]	
ontainer	I.D. No	TRENT		INSPECT				
			- eentoiner int			Yes [🖌 🛛	No[] N/A []
. C	ustody sea	ais on snippin	g container inti g container da	ted & signed	?	Yes [🗸] 🛛 I	No[] N/A []
. C	ustody sea	ais on sample	containers int	act?			NO[] N/A [/
. C	ustody se	ais on sample	containers da	ited & signed	?	• •	No[] N/A [• /
	acking ma					• •		IA V
	tumber of	comples in sh	hipping contain		Sample Matrix	WAT	LR	
7. N	Number of	containers pe	r sample:		(Or see CoC			
В. 5	Samples a	re in correct c	ontainer		Yes[']	No[]		
9. F	Paperwork	agrees with s	amples?			No []		
					ad labels [] A			
11. 3	Samples a	ire: In goo	d condition [*	J Leaking	pH_2_Pre	servative		
12.	Samples a	are: Preserve	d [1] Not pr	reserved [
		any anomalies						
13.	Describe a	any anomalies		Yes	[] No[] Date		
13. - - 14.	Describe a	any anomalies		Yes] Date	6	
13. - 14. 15.	Describe a Was P.M. Inspected	ny anomalies notified of an		Yes Date: _	[] No [[2.[2.[/k] Customer] Date e:/ // // Beta/Gamma	lon Chamber	wipe
13. - - 14.	Was P.M. Inspected	any anomalies notified of an d by Beta/Gamma cpm	nyanomalies? #K	Yes	[] No[<u> 2 21/</u> k7 ime] Date ::/ // .//	6	wipe
13. 14. 15. Custo Sample	Was P.M. Inspected	any anomalies	ny anomalies? HK Ion Chamber	Yes Date: _	[] No [[2.[2.[/k] Customer] Date e:/ // // Beta/Gamma	lon Chamber	wipe
13. 14. 15. Custo Sample	Was P.M. Inspected	any anomalies notified of an d by Beta/Gamma cpm	ny anomalies? HK Ion Chamber	Yes Date: _	[] No [[2.[2.[/k] Customer] Date e:/ // // Beta/Gamma	lon Chamber	wipe
13. 14. 15. Custo Sample	Was P.M. Inspected	any anomalies notified of an d by Beta/Gamma cpm	ny anomalies? HK Ion Chamber	Yes Date: _	[] No [[2.[2.[/k] Customer] Date e:/ // // Beta/Gamma	lon Chamber	wipe
13. 14. 15. Custo Sample	Was P.M. Inspected	any anomalies notified of an d by Beta/Gamma cpm	ny anomalies? HK Ion Chamber	Yes Date: _	[] No [[2.[2.[/k] Customer] Date e:/ // // Beta/Gamma	lon Chamber	wipe
13. 14. 15. Custo Sample	Was P.M. Inspected	any anomalies notified of an d by Beta/Gamma cpm	ny anomalies? HK Ion Chamber	Yes Date: _	[] No [[2.[2.[/k] Customer] Date e:/ // // Beta/Gamma	lon Chamber	wipe
13. 14. 15. Custo Sample	Was P.M. Inspected	any anomalies notified of an d by Beta/Gamma cpm	ny anomalies? HK Ion Chamber	Yes Date: _	[] No [[2.[2.[/k] Customer] Date e:/ // // Beta/Gamma	lon Chamber	wipe
13. 14. 15. Custo Sample	Was P.M. Inspected	any anomalies notified of an d by Beta/Gamma cpm	ny anomalies? HK Ion Chamber	Yes Date: _	[] No [[2.[2.[/k] Customer] Date e:/ // // Beta/Gamma	lon Chamber	wipe
13. 14. 15. Custo Sample	Was P.M. Inspected	any anomalies notified of an d by Beta/Gamma cpm	ny anomalies? HK Ion Chamber	Yes Date: _	[] No [[2.[2.[/k] Customer] Date e:/ // // Beta/Gamma	lon Chamber	wipe
13. 14. 15. Custo Sample	Was P.M. Inspected	any anomalies notified of an d by Beta/Gamma cpm	ny anomalies? HK Ion Chamber	Yes Date: _	[] No [[2.[2.[/k] Customer] Date e:/ // // Beta/Gamma	lon Chamber	wipe
13. 14. 15. Custo Sample	Was P.M. Inspected	any anomalies notified of an d by Beta/Gamma cpm	ny anomalies? HK Ion Chamber	Yes Date: _	[] No [[2.[2.[/k] Customer] Date e:/ // // Beta/Gamma	lon Chamber	wipe
13. 14. 15. Custo Sample	Was P.M. Inspected	any anomalies notified of an d by Beta/Gamma cpm	ny anomalies? HK Ion Chamber	Yes Date: _	[] No [[2.[2.[/k] Customer] Date e:/ // // Beta/Gamma	lon Chamber	wipe
13. 14. 15. Custo Sample ITL/2	Describe a Was P.M. Inspected mer f e No. Rf(~O2	notified of an by Beta/Gamma cpm 60	ton Chamber mR/hr	Yes Date: Wipe	[] No [<u>12/21/k</u> time Customer Sample No.) Date ::/ /// Beta/Gamma cpm	ion Chamber mR/hr	wipe
13. 14. 15. Custo Sample IT L / 2 Ion Char	Describe a Was P.M. Inspected No. Rf(~O2	notified of an by Beta/Gamma cpm 60	Ion Chamber mR/hr	Yes Date: Wipe	[] No [<u>12/21/k</u> time Customer Sample No.) Date Beta/Gamma cpm	ion Chamber mR/hr	

Form SCP-02, 07-30-07

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