TestAmerica St. Louis



## **ANALYTICAL REPORT**

PROJECT NO. RFP-CBA-022

HEM SAHEM00297

Lot #: F9A150281

Gerry Rood

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TESTAMERICA LABORATORIES, INC.

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Jerry Everett Project Manager

February 9, 2009

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LOT# F9A150281

1 of 31.

#### Case Narrative LOT NUMBER: **F9A150281**

This report contains the analytical results for the six samples received under chain of custody by TestAmerica St. Louis on January 15, 2009. These samples are associated with your HEM SAHEM00297 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

#### **Observations/Nonconformances**

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

#### Isotopic Uranium Method EML A-01-R MOD

The samples require an additional dilution due to high activity. The Blank and LCS samples are contaminated with Uranium. Samples were sent back for re-extraction. The re-extracted sample results are acceptable and will be reported.

#### Affected Samples:

F9A150281 (1): S0027	F9A150281 (4): S0030
F9A150281 (2): S0028	F9A150281 (5): S0031
F9A150281 (3): S0029	F9A150281 (6): S0032

#### Technetium-99 Method EML TC-02-RC MOD

The LCS recovery is outside the upper QC limits, indicating a potential positive bias for the analyte. The sample duplicate %RPD was >40% and RER was >1.0. Samples were sent back for re-extraction.

The re-extracted results yielded an acceptable LCS recovery. The sample and duplicate reanalysis yielded similar results indicating a matrix effect. The sample matrix is heterogeneous. The re-extracted results are reported.

#### Affected Samples:

F9A150281 (1): S0027	F9A150281 (4): S0030
F9A150281 (2): S0028	F9A150281 (5): S0031
F9A150281 (3): S0029	F9A150281 (6): S0032

TestAmerica St. Louis

## **METHODS SUMMARY**

#### F9A150281

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Isotopic Uranium by Alpha Spectroscopy Percent Moisture TC-99 by LSC	EML A-01-R MOD MCAWW 160.3 MOD EML TC-02-RC MO	MCAWW 160.3 MOD

#### References:

- EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY
- MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

## SAMPLE SUMMARY

#### F9A150281

WO	#	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
K51	WC9	001	S0027	01/07/09	
K51	MDA	002	S0028	01/07/09	
K51	WDC	003	S0029	01/07/09	
K51	WDD	004	S0030	01/07/09	
K51	WDE	005	S0031	01/07/09	
K51	WDF	006	S0032	01/07/09	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.

- All calculations are performed before rounding to avoid round-off errors in calculated results.

- Results noted as "ND" were not detected at or above the stated limit.

- This report must not be reproduced, except in full, without the written approval of the laboratory.

- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor,

paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Client Sample ID: S0027

#### General Chemistry

Lot-Sample #: F9A150	)281-001 Work (	Order #: 3	K5WC9	Matrix:	SOLID
Date Sampled: 01/07/	09 Date I	Received:	01/15/09		
<b>% Moisture:</b> 19					

					PREPARATION-	PREP
PARAMETER	RESULT	RL	UNITS	METHOD	ANALYSIS DATE	BATCH #
Percent Moisture	18.6	0.10	8	MCAWW 160.3 MOD	01/16-01/17/09	9016231
	Di	lution Fact	or: 1	Analysis Time: 00:00	MDL	. :

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Client Sample ID: S0028

### General Chemistry

Lot-Sample #: F9A150	281-002 Work	Order #:	K5WDA	Matrix SOLID
Date Sampled: 01/07/	09 Date	Received:	01/15/09	
<b>% Moisture:</b> 18				

					PREPARATION-	PREP
PARAMETER	RESULT	RL	UNITS	METHOD	ANALYSIS DATE	BATCH #
Percent Moisture	18.0	0.10	8	MCAWW 160.3 MOD	01/16-01/17/09	9016231
	Di	lution Fact	or: 1	Analysis Time: 00:00	MDL	:

LOT# F9A150281

Client Sample ID: S0029

General Chemistry

Lot-Sample #:	F9A150281-003	Work Order #: K5WDC	Matrix SOLID
Date Sampled:	01/07/09	Date Received: 01/15/09	
<pre>% Moisture:</pre>	17		

					PREPARATION-	PREP
PARAMETER	RESULT	RL	UNITS	METHOD	ANALYSIS DATE	BATCH #
Percent Moisture	16.7	0.10	8	MCAWW 160.3 MOD	01/16-01/17/09	9016231
	Di	lution Facto	or: 1	Analysis Time: 00:00	MDL	:

LOT# F9A150281

Client Sample ID: S0030

### General Chemistry

Lot-Sample #:	F9A150281-004	Work Order #: K5WDD	Matrix SOLID
Date Sampled:	01/07/09	Date Received: 01/15/09	
<pre>% Moisture:</pre>	23		

					PREPARATION-	PREP
PARAMETER	RESULT	RL	UNITS	METHOD	ANALYSIS DATE	BATCH #
Percent Moisture	22.6	0.10	8	MCAWW 160.3 MOD	01/16-01/17/09	9016231
	Dilu	tion Facto	or: 1	Analysis Time: 00:00	MDL	:

LOT# F9A150281

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Client Sample ID: S0031

General Chemistry

Lot-Sample #: F9A150281-00!	5 Work Order #: K5WDE	Matrix SOLID
Date Sampled: 01/07/09	Date Received: 01/15/09	
<b>% Moisture:</b> 16		

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Moisture	15.5	0.10	8	MCAWW 160.3 MOD	01/16-01/17/09	9016231
	Di	lution Fact	or: 1	Analysis Time: 00:00	MDL	:

LOT# F9A150281

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### Westinghouse Electric Company LLC

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Client Sample ID: S0032

### General Chemistry

Lot-Sample #:	F9A150281-006	Work Order #:	K5WDF	Matrix SOLID
Date Sampled:	01/07/09	Date Received:	01/15/09	
<pre>% Moisture:</pre>	20			

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Moisture	19.6	0.10	8	MCAWW 160.3 MOD	01/16-01/17/09	9016231
	Di	lution Fact	or: 1	Analysis Time: 00:00	MDL	:

\_\_\_\_\_↓OT# F9A150281

#### SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

Client Lot #:	F9A150281	Work Or	rder #:	K5WDF-SMP Mata K5WDF-DUP	ix: SOLID	
Date Sampled:	01/07/09	Date Re	eceived:	01/15/09		
<pre>% Moisture:</pre>	20					
	DUPLICATE		RPD		PREPARATION-	PREP
PARAM RESULT	RESULT	UNITS F	RPD LIMI	r method	ANALYSIS DATE	BATCH #
Percent Moisture				SD Lot-Sample #:	F9A150281-006	
19.6	21.4	۶ ۶	3.8 (0-3	0) MCAWW 160.3 MOD	01/16-01/17/09	9016231
		Dilution Factor	r: 1	Analysis Time: 00:00		

### Client Sample ID: S0027

#### Radiochemistry

Lab Sample II Work Order: Matrix:	9: F9A150 K5WC9 SOLID	281-001			Date Colle Date Recei		01/07/09 01/15/09	0000 1600	
Parameter	Result	Qual	Count Uncert.	Total Uncert. (2 g+/-)	RL	MDC	Pr Da		Analysis Date
ISO URANIUM (LC	NG CT) DOI	3 A-01-R MC	מו	q	Ci/g	в	atch # 90261	47	Yld % 82
Uranium 234	1160			130	30	10	01	/26/09	01/26/09
Uranium 235/236	67			25	30	9	01	/26/09	01/26/09
Uranium 238	129			32	30	10	01	/26/09	01/26/09
TC-99 by LSC by	DOE TC-02	2-RC Mod.		p	Ci/g	В	atch # 90341	60	Yld % 107
Technetium 99	34.4			3.1	1.0	0.3	02	/03/09	02/06/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

### Client Sample ID: S0027 DUP

#### Radiochemistry

Lab Sample II Work Order: Matrix:	): F9A150 K5WC9 SOLID	281-001X	•		Date Colle Date Recei		01/07/09 01/15/09	0000 1600		
Parameter	Result	Qual	Count Uncert.	Total Uncert. (2 g+/-)	RL	MDC	Pro Da	-	Analys Date	is
ISO URANIUM (LC	NG CT) DO	E A-01-R MO	ס		Ci/g	Ba	atch # 90261	47	Yld %	80
Uranium 234	930			110	30	9	01	/26/09	01/26	/09
Uranium 235/236	88	·		28	30	9	01	/26/09	01/26	/09
Uranium 238	135			32	30	4	01	/26/09	01/26	/09
TC-99 by LSC by	DOE TC-0	2-RC Mod.		P	Ci/g	Ba	atch # 90341	60	Yld %	88
Technetium 99	54.4			4.8	1.0	0.4	02	/03/09	02/06	/09

NOTE(S)

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LOT# F9A150281

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### Client Sample ID: S0028

### Radiochemistry

Lab Sample ID: Work Order: Matrix:	F9A150281-002 K5WDA SOLID			Date Collec Date Receiv		01/07/09 01/15/09	000 160	-
Parameter	Result Qual	Count Uncert.	Total Uncert. (2 g+/-)	RL	MDC	Pr Da		Analysis Date
ISO URANIUM (LON	G CT) DOE A-01-R M	סכ	P	Ci/g	Ba	atch # 90261	47	Yld % 66
Uranium 234	465		62	18	7	01	/26/09	9 01/26/09
Uranium 235/236	52		19	18	9	01	/26/09	9 01/26/09
Uranium 238	81		21	18	3	01	/26/09	9 01/26/09
TC-99 by LSC by 1	DOE TC-02-RC Mod.		Þ	Ci/g	Ba	atch # 90341	60	Yld % 104
Technetium 99	70.6		6.1	1.0	0.3	02	/03/09	9 02/06/09

NOTE (S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

### Client Sample ID: S0029

### Radiochemistry

Lab Sample ID Work Order: Matrix:	: F9A150 K5WDC SOLID	281-003			Date Colled Date Receiv		01/07/09 01/15/09	0000 1600	
Parameter	Result	Qual	Count Uncert.	Total Uncert. (2 g+/-)	RL	мрс		rep ate	Analysis Date
ISO URANIUM (LO	NG CT) DO	E A-01-R MC	מו	P	Ci/g	В	atch # 90261	L47	Yld % 77
Uranium 234	763			99	30	12	0	1/26/09	01/26/09
Uranium 235/236	51			23	30	1.0	0	1/26/09	01/26/09
Uranium 238	102			29	30	8	0	1/26/09	01/26/09
TC-99 by LSC by	DOE TC-0	2-RC Mod.		p	Ci/g	В	atch # 90341	L60	¥1d % 99
Technetium 99	40.9			3.6	1.0	0.4	03	2/03/09	02/06/09

NOTE (S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only. Bold results are greater than the MDC

LOT# F9A150281

### Client Sample ID: S0030

#### Radiochemistry

Lab Sample ID: Work Order: Matrix:	F9A150 K5WDD SOLID	281-004			Date Colle Date Recei		01/07/09 01/15/09	0000 1600	
Parameter	Result	Qual	Count Uncert.	Total Uncert. (2 g+/-)	RL	MDC	Pre Dat	-	alysis te
Iso URANIUM (LON	G CT) DOP	A-01-R MO	D	p	Ci/g	Ba	tch # 902614	7 Yld	. % 76
Uranium 234	621			71	15	6	01/	26/09 01	/26/09
Uranium 235/236	57			17	15	5	01/	26/09 01	/26/09
Uranium 238	197			32	15	4	01/	26/09 01	/26/09
TC-99 by LSC by	DOE TC-02	-RC Mod.		p	Ci/g	Ba	tch # 903416	0 Yld	1 % 93
Technetium 99	46.6			4.1	1.0	0.4	02/	03/09 02	/06/09

NOTE (S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

### Client Sample ID: S0031

### Radiochemistry

Lab Sample II Work Order: Matrix:	9: F9A1502 K5WDE SOLID	281-005			Date Col Date Rec		01/07/09 01/15/09	0000 1600		
Parameter	Result	Qual	Count Uncert.	Total Uncert. (2 g+/-)	RL	MDC	Pre	-	Analys Date	is
	NG CT) DOE		 תר	n	Ci/g		h # 902614	.7	Yld %	86
Uranium 234	980	n n-vi-n m		120 P	40	10		., 26/09	01/26	
<b>Vranium 235/236</b>	70			28	40	14	01/	26/09	01/26	/09
Uranium 238	113			33	40	11	01/	26/09	01/26	/09
TC-99 by LSC by	DOE TC-02	-RC Mod.		p	Ci/g	Bato	b # 903416	:0	Yld %	98
Technetium 99	41.0			3.7	1.0	0.4	02/	03/09	02/06	/09

NOTE (S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

### Client Sample ID: S0032

#### Radiochemistry

Lab Sample I Work Order: Matrix:	D: F9A150 K5WDF SOLID	281-006			Date Colle Date Recei		01/07/09 01/15/09	0000 1600
Parameter	<b>- 1</b> /		Count Uncert.	Total Uncert. (2 g+/-)			Pre Dat	
	Result	Qual				MDC		47 Yld % 88
ISO URANIUM (LC	-	S A-UI-R MO	D	-	Ci/g			
Uranium 234	18000			1600	90	50	01/	/26/09 01/26/09
Uranium 235/236	950			170	90	40	01,	/26/09 01/26/09
Uranium 238	1540			220	90	30	01/	/26/09 01/26/09
TC-99 by LSC by	DOE TC-02	2-RC Mod.		p	Ci/g	Ва	tch # 903416	50 Yld % 96
Technetium 99				21		0.4		/03/09 02/06/09

NOTE (S)

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Data are incomplete without the case narrative.

MDC is determined by instrument performance only. Bold results are greater than the MDC

<u></u>ОТ# F9A150281

#### METHOD BLANK REPORT

#### Radiochemistry

Client Lot ID: F9A150281 Matrix: SOLID

		Count Uncert.	Total Uncert.				Prep	Lab Sample ID Analysis
Parameter	Result	Qual	(2 <sub>5</sub> +/-)	RL	MDC		Date	Date
ISO URANIUM	(LONG CT) DOP	A-01-R MOD	pCi/g	Batch #	9026147	Yld %	66	F9A260000-147B
Uranium 234	0.067	J	0.046	0.100	0.042		01/26/0	09 01/26/09
Uranium 235/236	0.036	J	0.036	0.100	0.024		01/26/0	9 01/26/09
Uranium 238	0.028	υ	0.029	0.100	0.031		01/26/0	09 01/26/09
TC-99 by LSC	by DOE TC-02	P-RC Mod.	pCi/g	Batch #	9034160	Yld %	104	F9B030000-160B
Technetium 99	-0.04	υ	0.20	1.00	0.35		02/03/0	09 02/06/09

NOTE (S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only

Bold results are greater than the MDC

J Result is greater than sample detection limit but less than stated reporting limit.

U Result is less than the sample detection limit.

LOT# F9A150281

### Laboratory Control Sample Report

### Radiochemistry

Client Lot ID:	F9A150281
Matrix:	SOLID

			Count	Total			Lab Sa	mple ID
Parameter	Spike Amount	Result	Üncert. (2σ	Uncert. +/-)	MDC	% Yld	% Rec	QC Control Limits
ISO URANIUM (LONG	CT) DOE A-01-R	MOD	pCi/g	A-01-	R MOD		F9A260	000-147C
Uranium 234	19.6	16.9		2.8	0.5	81	86	(69 - 125)
Uranium 238	19.6	17.3		2.8	0.4	81	89	(68 - 121)
	Batch #:	9026147			Analysis Date:	01/26/0	9	
TC-99 by LSC by DC	E TC-02-RC Mod	•	pCi/g	TC-02	-RC MOD	<sup>_</sup> _	F9B030	000-160C
Technetium 99	33.3	26.5		2.4	0.3	105	80	(57 - 111)
	Batch #:	9034160			Analysis Date:	02/06/0	9	

#### NOTE (S)

MDC is determined by instrument performance only Calculations are performed before rounding to avoid round-off error in calculated results

#### DUPLICATE EVALUATION REPORT

#### Radiochemistry

Client Lot ID:	F9A150281				Date Sample	ed: 01/0	7/09	
Matrix:	SOLID				Date Receiv	red: 01/1	5/09	
Parameter	SAMPLE Result	Total Uncert. (2g+/-)	% Yld	DUPLICATE Result	Total Uncert. (2 g+/-)	% Yld	QC Sample ID Precis:	
ISO URANIUM (LONG	CT) DOE A-01-R	MOD	pCi/g	A-01-R M	IOD	FS	A150281-0	01
Uranium 234	1160	130	82	930	110	80	22	%RPD
Uranium 235/236	67	25	82	88	28	80	27	%RPD
Uranium 238	129	32	82	135	32	80	5	\$RPD
	Batch #:	9026147	(Sample)	9026147	(Duplicate)	_		
TC-99 by LSC by D	OE TC-02-RC Mod	•	pCi/g	TC-02-RC	C MOD	FS	A150281-0	01
Technetium 99	34.4	3.1	107	54.4	4.8	88	45	%RPD
	Batch #:	9034160	(Sample)	9034160	(Duplicate)			

NOTE(S)

Data are incomplete without the case narrative. Calculations are performed before rounding to avoid round-off error in calculated results

<b>-9A</b> 1	50	201					T ANALYSIS	30IVII	MANI	Storage Loc	e Received:	•	RAD	09-01-1
roject Ma	anag	ger:	JAE	Quote	#: 79676	B.	SDG:				I Due Date:			09-02-0
roject:		RF	P-CBA-02	22 HEM	SAHEMOO	297				•	t Due Date:			09-02-0
°O#:		SA	HEM002	97 Repo	t to: Ge	rry R	boo			Report Type			~~	
lient:		14	22664 \	Westinghouse Ele	ctric Com	bany	LLC #	SMPS in LO		EDD Code				
ample Cont	iroi- F	Pioase lo	g in each C	OC line item and assoc	iated bag sa	mple	as a separate sample. If a ba	a is marked fo	or QC enter it as a	separate sampl	e. All bags mu	st		
e trackabie	for s	ample re	turn purpos	es. Bags marked as Q	C represent	a DUP	of the parent sample for RAD	parameter. F	lease use a 0.6L M	arinelli geomet	ry use			
-		-			•		M therefore follow Memo # 4.							
hese sampl	es ar	e to be	considered l	nigh rad levels until RA	D Screening	•								
SAMPLE	#		IT SAMPL	<u>E ID</u>	Site ID	<u>)</u>	Client Matrix	DATE/T	ME SAMPLED		WORKOR	<u>DER</u>	A	
1	\$	S0027	•					2009-01-0	0 / 7		K5WC9	s	OLID	
SAMPLE	co	MMEN	<u>ITS:</u>											
XX Z	V		RAD SCREEN	SOLID, RAD SCREEI SCREEN, Special L	I, RAD	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST	SET	PROT: A	WRK LOC	06	
XX 21	M		A-01-R . MOD	SOLID, A-01-R MOD, URANIUM (LONG CT		J2	Extraction Chromatography - Sequential Actinides	DQ	DOD QSM V3		PROT: A	WRK LOC	06	
XX 20	Q	EML	TC-02-RC MOD			IM	TC-99 by Extraction Chromatography Resin	DQ	DOD QSM V3		PROT: A	WRK	06	
XX W			160.3 MOD	<ul> <li>SOLID, 160.3 MOD, F Moisture</li> </ul>	Percent	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST	SET	PROT: Z	WRK	06	
SAMPLE	#	CLIEN		E ID	Site ID	·····	Client Matrix		ME SAMPLED	······	WORKOR	DER	A	
2		<u>50028</u>			0110 10	2	<u>Onorr manna</u>	2009-01-0			K5WDA			
SAMPLE								2000 014	, , ,		Novien	. 0		
XX Z	V		RAD SCREEN	SOLID, RAD SCREE SCREEN, Special L	N, RAD	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST	SET	PROT: A	WRK LOC	06	
XX 21	М	EML	A-01-R MOD	SOLID, A-01-R MOD, URANIUM (LONG CT		J2	Extraction Chromatography - Sequential Actinides	DQ	DOD QSM V3		PROT: A	WRK	06	
XX 20	Q	EML	TC-02-RC	SOLID, TC-02-RC M		IM	TC-99 by Extraction	DQ	DOD QSM V3		PROT: A	LOC	06	
XX W		MCAW W	MOD 160.3 MOD	by LSC by DOE SOLID, 160.3 MOD, F Moisture	Percent	.88	Chromatography Resin NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TES	I SET	PROT: Z	LOC WRK LOC	06	
					Cite II					·····				
SAMPLE	_		IT SAMPI		<u>Site I</u>	2	Client Matrix		IME SAMPLED		WORKOR		A	
3 SAMPLE		S0029					,	2009-01-0	J770		K5WDC	; 5	OLID	
XX Z			RAD	SOLID, RAD SCREE	N, RAD	RA	IN-HOUSE RAD	01	STANDARD TES	T SET	PROT: A	WRK	06	
XX 2	М	EML	SCREEN A-01-R	SCREEN, Special L , SOLID, A-01-R MOD		J2	SCREEN Extraction Chromatography -	DQ	DOD QSM V3		PROT: A	LOC WRK	06	
XX 20	Q	EML	MOD TC-02-RC	URANIUM (LONG CT SOLID, TC-02-RC M		IM	Sequential Actinides TC-99 by Extraction	DQ	DOD QSM V3		PROT: A	LOC WRK	06	
XX W	vM	MCAW	MOD 160.3	by LSC by DOE SOLID, 160.3 MOD, 1	Percent	88	Chromatography Resin NO SAMPLE PREPARATION	01	STANDARD TES	r set	PROT: Z	LOC WRK	06	
		W	MOD	Moisture			PERFORMED / DIRECT					LOC		
<u>SAMPLE</u>	#	CLIE	NT SAMP	LE ID	<u>Site I</u>	2	Client Matrix	DATE/T	IME SAMPLEE	<u>)</u>	WORKOR	DER	A	
4		S0030						· 2009-01-	07/0		K5WDD	) S	OLID	
SAMPLE		MME	NTS: RAD	SOLID, RAD SCREE		13 A	IN-HOUSE RAD	01	STANDARD TES	TSET	PROT: A	WRK	06	
XX Z		EML	SCREEN A-01-R	SCREEN, Special L SOLID, A-01-R MOD		RA	SCREEN Extraction Chromatography -		DOD QSM V3			LOC		
XX 2		EML	MOD TC-02-RC	URANIUM (LONG C	7	J2	Sequential Actinides	DQ			PROT: A	LOC	06 06	
XX 2			MOD	SOLID, TC-02-RC M by LSC by DOE SOLID, 160.3 MOD		IM 00	TC-99 by Extraction Chromatography Resin NO SAMPLE PREPARATION	DQ		TSET	PROT: A	LOC	06 06	
XX W	VM 	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Moisture	- arcaur	88	PERFORMED / DIRECT	01	STANDARD TES	. 351	PROT: Z	LOC	06	
SAMPLE	<u>#</u>	CLIE	NT SAMP	LE ID	<u>Site II</u>	<u>2</u>	Client Matrix	DATE/T	IME SAMPLE	<u>)</u>	WORKOR	DER	A	
5		S0031						2009-01-	07/0		K5WDE	E S		
SAMPLE		OMME									_			
XX Z		-	RAD SCREEN	SOLID, RAD SCREE SCREEN, Special L	•	RA	IN-HOUSE RAD SCREEN	01	STANDARD TES	I SET	PROT: A	WRK LOC		
XX 2	M	EML	A-01-R MOD	, SOLID, A-01-R MOD URANIUM (LONG C	n)	J2	Extraction Chromatography - Sequential Actinides	DQ			PROT: A	WRK LOC	06	
XX 2	Q	EML	TC-02-RC MOD	<ul> <li>SOLID, TC-02-RC M by LSC by DOE</li> </ul>		IM	TC-99 by Extraction Chromatography Resin	DQ	DOD QSM V3		PROT: A	WRK Loc	06	
XX V	VM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Moisture	Percent	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TES	T SET	PROT: Z	WRK LOC	06	
	Ξ#		NT SAMP		Site II	2	Client Matrix	DATE/T	IME SAMPLE	<u></u>	WORKOR	DER	A	
SAMPLE						-				-		and the second s	<u> </u>	

-

F9A15	0281	1	<u> </u>	LIEN	IT ANALYSIS	SUMI	MARY Sto	rage Loc: Date	Received:		<b>RAD</b> 2009-01-15
Project Ma	nager:	JAE	Quote #: 7	9676	SDG:				Due Date:		2009-02-02
Project:	R	FP-CBA-0	22 HEM SAHE	M00297				•			
PO#:		AHEM002		Gerry R	and			Report	Due Date:		2009-02-05
P0#.			· · ·	•			Rep	ort Type:	х		
Client:	14	22664	Westinghouse Electric C	Company	LLC #S	MPS in LC	DT: 6 EI	DD Code:	00		
These sample	s are to be S0032		high rad levels until RAD Scre	ening.		2009-01-0	07/0		K5WDF	S	DLID
SAMPLE	COMME	NTS:									
XX ZV		RAD	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SE	Т	PROT: A	WRK LOC	06
XX 2N	EML	A-01-R MOD	, SOLID, A-01-R MOD, Iso URANIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	DQ	DOD QSM V3		PROT: A	WRK LOC	06
XX 20	EML	TC-02-RC MOD	<ul> <li>SOLID, TC-02-RC MOD, TC- by LSC by DOE</li> </ul>	99 JM	TC-99 by Extraction Chromatography Resin	DQ	DOD QSM V3		PROT: A	WRK LOC	06

TestAmerica - St. Louis

Logged in by: WILSONS

2009-01-16

7:54:17

<sup>-</sup>↓OT# F9A150281

Page 2 of 2

					* / *	<b>*</b> 7	<u> </u>			<b>T</b> -01	<b>n x</b> 7			0.01	0						÷			
N CUIL 192					1AI TEAR	N	OF	<u> </u>	<u>US</u>				ECO									T.I. AT		
Project Name: Westinghouse Electric Company				Ì				<u>i i i i</u>			equ	leste	A be N	naly:	<u>515</u>	<u> </u>						Laboratory Na Test America		
Contact Person:			<u> </u>	1																		Laboratory A		
Gerry Rood						·								N								13715 Rider 7	Frail North	
			<u>.</u>	ତ୍ର																ŝ	s	Earth City, M	O. 63045	
Phone Number:				Grab							s	1									iner	Phone No: Lab 314-298-	0566 Ear 21	1 200 0757
314-810-3382 Sampler (Signature):				5							<u>o</u>	1	清朝 1921		경		N		12	h.).	Containers	Laboratory Co		
See "ORISE" chain of custody				0			Ê		eta		d S		SUS						196.2		Total C	Jerry Everett		-
Printed Name:				Comp			hin	, vi	Ř	ase	nde	1.	Vitk				AN				To	Turn Around	Time (circle)	) See Benny
T. Vitkus/ M. Jadick				0			Isotopic Uranium	Spec.	Gross Alpha/Beta	Oil and Grease	Total Suspended Solids		Contact D Vitkus					M		7 74		Normal		Rush
		ſ	1	{	SS	66	pic	Gamma	S A	pu	l Su	Fluoride	act					$\mathbb{N}$					Remarks	
	Date	Time		) ·	<b>VOC's</b>	Tc-9	soto	Jam	SOL	Dil 8	Ota	<u>a</u>	Б	arean.					X				(Comuno	
Sample ID	Collected	Collected	Matrix		N.	<u> </u>			U.			<u></u>			齐 二	a				X	1	<u></u>		
S0027	1/7/09	A.M.	Śoil	G									<u>x</u>						0.0	aine a	1	Contact T. Vi	tkus for turn	around time
S0028	1/7/09	A.M.	Soil	G		$\square$	X						X		14 14				100		1			
S0029	1/7/09	A.M.	Soil	G					P				X								1			
S0030	1/7/09	Á.M.	Soil	G				A	N				X X X	21 92							1			
S0031	1/7/09	A.M.	Soil	G			新建		1922 (M 1772 - 1 1782 - 1	$\searrow$			X	and the second se		$ \lambda $					1			
S0032	1/7/09	A.M.	Soil	G									X				$\mathbb{N}$		1.2		1			
												]	2/A		100 H	(유산) (기학)	A)	$\mathbf{X}$						
										100					W.			X						
		N N							115		an:			2007 100 100					Ń				· · · · · · · · · · · · · · · · · · ·	
		A							<u>ب</u>											X				
		<u> </u>				-	4.4%						J								$\overline{}$			
D. I	Date/Time	Receiv	<u> </u>		25.8	L	影響		Det	e/Ti			47 · · · · ·	al N	7	0.05		<u>[[명]</u>	<u> </u>	<u>종</u> ] . 6	,	Cooler Temp		
Relinquished by: tomy Moch	01/12/09	Receiv	a vy.	9				ſ					101	ain	uno			man	1015	. 0		Cooler Temp	erature: IN/A	
Company Name:	•	Compa	iny Name					/	/12	109	7	Ī	Coc	oler J	D: (	)112	-01					Shipper and N	Number: N/A	· · · · · · · · · · · · · · · · · · ·
WFr	1100	Les	( Cemer	sce	2			ļ		00														
Relinquished by: X Medicali	Date/Time	Receiv		. [	n/	à			Dat	e/Ti	me			nme r trai							Sam	ple provided to	o W. E. C. by	"ORISE"
Company Names	1/12/09	Compa	iny Name										1.01	uai	15101	10 1	Col	Anno	51104	a				
Company Name	12:30	TA		/	23	ن																		
Relinquished by:	Date/Time	e Receiv	ed by:	-			1		Dat	e/Ti	me		Ver	ified	l by:									
Company Name:		Compo	iny Name	 >•											L	-	_				5	>	. 1. 1	0
л Company Ivame:			my realife											2	-			~			<u> </u>	9~	1/12/0	) प

ORISE			CHAIN OF CUSTODY F					
P.O. BOX 117 OAK RIDGE, TN 37830		RECORD		boratory	Manager (865) 576-5073 Manager (865) 241-3242			
Sampler (s) $\underline{\mathcal{T}}$	us M.	Jadick			FTD-TSS (865) 241-5947			
Project/TaskName/	768	Hematite Decommiss	ioning F	roject	,			
SAMPLE		SAMPLE	COLLE	CTED				
NUMBER	SAMPLE MATRIX	INFORMATION	DATE	TIME	REMARKS			
50027	50:1	Judgmental location	1/1/2009	A.M.				
50028		Duplicate Samples	. /					
50029		Duplicate Samples for Comparative						
50030		analyses						
50031		· · · · · · · · · · · · · · · · · · ·	,					
50032	V	V						
	· · · · · · · · · · · · · · · · · · ·							
		2						
		1/21						
		172000						

Relinquished By	Received By	Date	Time	Received Condition	
1. Sampler: Mark Jadick	Clark Evers	1/7/09	1330	Yes 🗗	No 🗆
2.				Yes □	No 🗆
3.				Yes 🗆	No 🗆
4.	·			Yes 🗆	No 🗆

Shipping Instructions:

**Receiving Instructions:** 

Include a copy of form clearly marked "Copy" in shipping container. If shipping samples, enter carrier name in "Received By" space. If receiving samples from a carrier, enter the carrier name in "Relinquished By" space.

If integrity of samples and/or sample packaging is in question, note the concern in "Remarks"

and enter any further description of the condition below. Comments: Samples Transforred to well Chat of Custody Number: 011209-01 Cooler# Ot12-01 See Attached

:					RA		APPENDIX	A VEY REPC	DRT					
	rpose of urvey :	Survey_of	Sample Coole	er #0112-01 d	ontaining 6	Splits from	ORISE Samp	les 1/12/09		v Log N	umper –	. 00	16 C 090	112
Sur	reyed by:		Sel	xH-	1-12-0	9		Reviewed	By:	LVI	ell'	1/10	2/09	
i Ini	trument	Sertat	Calibration	Probe	Probe Area (cm2)	Alpha Bkgd	Alpha Efficiency.	Alpha MDA (dpm)	Béta Bkgd	Beta Eff.	Beta MDA	Date:	1/12	2/2009
Ter	nelec LB	1	6/11/2009	GFPC	20.3	0.73	24.1%	23.12	2.07	30.6%	24.59	Time:	8	:32
Lu	dlum 19	218144	4/9/2009	Internal Na	1 x 1 Nal	N/A	N/A	N/A	N/A	N/A	N/A	Smear Area	~ 10	0 cm2
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Batch #	4.	350
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RWP:	N	₹/A
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Misc.	١	N/A
Rema	arks:	N/A		Removal	le Alpha	Remova	ble Béta	Tota	l Alpha	Total	Beta	βγ Dos	e Raté 🔅	
<b>#</b>		Descriptio	on.	Net CPM	DPM// 100cm <sup>2</sup>	Net CPM	DPM / 100cm <sup>2</sup>	Grose CPM	DPM / 100cm <sup>2</sup>	Gross CPM	DPM // 100cm <sup>2</sup>	Contact µR/hr=	Gen Area µR/hr	Umlt Erceeder
1	Cooler #0112-0	D1: Top		0.21	<mda< td=""><td>4.86</td><td><mda< td=""><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>. 7.00</td><td>4.00</td><td>N/A N/A</td></mda<></td></mda<>	4.86	<mda< td=""><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>. 7.00</td><td>4.00</td><td>N/A N/A</td></mda<>	N/A	N/A	N/A	N/A	. 7.00	4.00	N/A N/A
2	Cooler #0112-0	D1: Side		0.22	<mda< td=""><td>3.86</td><td><mda< td=""><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>7.00</td><td>4.00</td><td>N/A N/A</td></mda<></td></mda<>	3.86	<mda< td=""><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>7.00</td><td>4.00</td><td>N/A N/A</td></mda<>	N/A	N/A	N/A	N/A	7.00	4.00	N/A N/A
3	Cooler #0112-0	01: End		17.71	73.5	51.25	167.7	N/A	N/A	N/A	N/A	6.00	4.00	N/A N/A
4	Cooler #0112-0	D1: Side		-0.79	<mda< td=""><td>5.19</td><td><mda< td=""><td>N/A</td><td>. N/A</td><td>N/A</td><td>N/A</td><td>8.00</td><td>5.00</td><td>N/A N/A</td></mda<></td></mda<>	5.19	<mda< td=""><td>N/A</td><td>. N/A</td><td>N/A</td><td>N/A</td><td>8.00</td><td>5.00</td><td>N/A N/A</td></mda<>	N/A	. N/A	N/A	N/A	8.00	5.00	N/A N/A
5	Cooler #0112-(	D1: End		2.22	<mda< td=""><td>4.22</td><td><mda< td=""><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>10.00</td><td>5.00</td><td>N/A N/A</td></mda<></td></mda<>	4.22	<mda< td=""><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>10.00</td><td>5.00</td><td>N/A N/A</td></mda<>	N/A	N/A	N/A	N/A	10.00	5.00	N/A N/A
6	Cooler #0112-(	01: Bottom		0.24	<mda< td=""><td>2.86</td><td><mda< td=""><td>N/A</td><td>N/A</td><td>N/A</td><td><u>N/A</u></td><td>15.00</td><td>8.00</td><td>N/A N/A</td></mda<></td></mda<>	2.86	<mda< td=""><td>N/A</td><td>N/A</td><td>N/A</td><td><u>N/A</u></td><td>15.00</td><td>8.00</td><td>N/A N/A</td></mda<>	N/A	N/A	N/A	<u>N/A</u>	15.00	8.00	N/A N/A
/A	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A
/A	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A
/A	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A
/A	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A
/A	N/A	<u>.</u>	·	N/A	N/A	N/A	N/A	N/A	. N/A	N/A	N/A	N/A	N/A	N/A N/A
/A	N/A	······		N/A	N/A	N/A	N/A	N/A	N/A	N/A	Ņ/A	N/A	N/A	N/A N/A
I/A	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A
/A	N/A			N/A	_N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A
I/A	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A N/A
[/A				N/A	N/A	N/A	N/A	N/A	<u>N/A</u>	N/A	. N/A	N/A		N/A N/A
I/A				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A N/A
[/A				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	,	N/A N/A
I/A				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A
/A	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A N/A

٤.

#### A 1

# BIAS SURFACE MEASUREMENTS

ם	ITE <u>1768 Hemat</u> REA <u>New Rail Spl</u> DATE <u>1/2009</u> ITART TIME: <u>1030</u>	; <del>1 c</del>	·····	) us ick		RUMENT 12#517 ルタ アレ リック	DETECTOR NaI#587 ∞9	BACK- GROUND	EFFI- CIENCY NA
	NAD 83 Missouri Statephine Zone 2401 LOCATION		scintillatio eter µR/hr	N CONTACT Kepm	G OPEN c/m	M / CLOSED	SOIL SAMPLI	AR	IMATED EA OF EVATED - CTIVITY
	864650N 827314E 864668N 827356E 964642N 827333E			16 11 15.5			500 2 500 2 500 2		prior ven Record
	864636N 827335E 864621NJ 827325E 864624N 427329E			14 18 120			50030 5003   5003 Z		
						1/2		7. 4	
1		Z							
		17/200							
· · ·			· · ·						
	REMARKS: Jud	gmental	Sample	5 Collee	ted per a	equest of	2 B.Watsi	an (NOR)	
= - - LOT# F9A1	CALCULATIONS BY: DATE				[			CALCULATIO REVIEWED	

W	Westinghouse
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Westinghouse				CI	IAI	N (	OF	CI	UST	[0]	DY	Rŀ	EC	OR	D						
Project Name: Westinghouse Electric Company Contact Person:					-					R	.eque	este	d A	Analysis					Ţ		Laboratory Name: Test America Laboratory Laboratory Address:
Gerry Rood Phone Number: 314-810-3382 Second Science (Science for Contemport of Science for Cont			or Grab (G)							ids	, ,							Containers	13715 Rider Trail North Earth City, MO. 63045 Phone No: Lab 314-298-8566 Fax 314-298-87		
Sampler (Signature): See "ORISE" chain of custody Printed Name: T. Vitkus/ M. Jadick				Comp (C) o			Isotopic Uranium	Spec.	Gross Alpha/Beta	Grease	Total Suspended Solids	1.	T. Vitkus							Total Co	Laboratory Contact Person: Jerry Everett Turn Around Time (circle) Normal Rush
Sample ID	Date Collected	Time Collected	Matrix		VOC's	Tc-99	Isotopic	Gamma Spec.	Gross A	Oil and Grease	Total Su		Contact T.								Remarks
S0027	1/7/09	A.M.	Soil	G					_				X		_					1	Contact T. Vitkus for turn around tin
S0028 S0029	1/7/09 1/7/09	A.M.	Soil Soil	G G	_								X					_		1	
S0029	1/7/09	A.M.	Soil	G	<u> </u> .					+			X						_	1	· · ·
S0030	1/7/09	A.M.	Soil	G					_			_	X	_						1	
.\$0032	1/7/09	A.M.	Soil	G		•							X X		-					1	
					-			_												ļ	
			·		-			_						_	╇						
<u> </u>			<u> </u>												+						
	<u> </u>			+					-+	+	+			-+-		+					
Relinquished by:	Date/Time	Receiv	Received by:						Date/Time				Total Number of Containers: 6					ntaine	ers: 6	<u> </u> ;	Cooler Temperature: N/A
Company Name:		Compa	ny Name	e:									Coo	ler	ID: (	0112-	-01				Shipper and Number: N/A
Relinquished by:	Date/Time	Receiv	ed by:					Date/Time				-	Comments: COC# 011209-01 For transfer to Test America					1209	9-01	Sar	nple provided to W. E. C. by "ORISE
Company Name:		Compa	ny Namo	9:									For	trai	nste	r to 'I	est A	Amer	ica,		
Relinquished by:	Date/Time	Receiv	ed by:	<u></u>	Date/Time					-	Verified by:										
Company Name:			ny Name																		

ORISE		CHAIN OF CUSTO	EMI	ERGENCY CONTACTS				
P.O. BOX 117		RECORD	Survey	Projects	Manager (865) 576-5073			
OAK RIDGE, TN 37830			Manager (865) 241-3242					
Sampler (s) <u>T. V.</u> H.	us M.	Jadick Hematite Decommiss		]	FTD-TSS (865) 241-5947			
Project/TaskName/	768 1	Hematite Decommiss	ioning F	ojeA				
SAMPLE		SAMPLE	COLLE	CTED				
NUMBER	SAMPLE MATRIX	INFORMATION	DATE	TIME	REMARKS			
50027	50:1	Judgmental localiz	1/7/2009	A.M.				
50028	1	Duplicate Samples	1					
50029		for Comparative						
50030		Duplicate Samples For Comparative analyses						
50031	ļ	/						
50032	V .	V	$\checkmark$					
		Du						
		1/2/2						
		1 - 00 4						
					<u> </u>			

Relinquished By	Received By	Date	Time	Received i Condition	
1. Sampler: Mark Jadick	Clark Evers	1/7/09	1330	Yes 🗗	No 🗆
2.				Yes □	No 🗆
3.				Yes □	No 🗆
4.				Yes 🗆	Noロ

 

 Shipping Instructions:
 Include a copy of form clearly marked "Copy" in shipping container. If shipping samples, enter carrier name in "Received By" space. If receiving samples from a carrier, enter the carrier name in "Relinquished By" space. If integrity of samples and/or sample packaging is in question, note the concern in "Remarks" and enter any further description of the condition below.

 Comments:
 Sector of West Chair of Cusbdy Number: 011209-01 Cooler#011204 See Attached 1

TestAmerica St. Louis

THE LEADER IN ENVIRC	NMENTAL TESTING		<b>.</b>			
	UPON RECEIPT FORM	-	42 -		·	
	t: Westinghouse		,			
Quote N						
	011209-01			i i		
Initiated By:	во	;			Time: 1230	
		Shipping I	Information		·	
Shipper:	FedEx UPS DHL C	ourier Client	Other: <u>10</u>		Multiple Packages:	' (N
Shipping # (s):*					mperature (s):** <u>hlacit</u> 6.	
	· 6.	,,,,,,,				
					7	
	,				8	
		•		·	· 9	
	10.	**0			10. not, note contents below. Tem	
	nes correspond to Numbered Sample T Y" for yes, "N" for no and "N/A" for r	vari	ance does NOT	affect the following: M	etals-Liquid or Rad tests- Liqui	d or Solid
1. YN	Are there custody seals pre cooler?	esent on the 8.	Y N	Are there cu	stody seals present on bo	ttles?
2. Y (N) N/	A Do custody seals on cooler tampered with? Were contents of cooler fri	9.	Y N	tampered wi		
3. (Y) N	opening, but before unpack	cing?	. Y N	N/A make note be	received with proper pH elow)	'? (II no
4. (Y) N	Sample received with Chai Custody?		. 🕅 N		ved in proper containers'	
5. Y N N/	sample ID's on the contain	er(s)?		(If Yes, note se	n VOA or TOX liquid sau mple ID's below)	
6. Y (N)	Was sample received broke		. Y N (	N/A Was Internal	COC/Workshare receive	ed?
7. (Y) N	Is sample volume sufficien analysis?	14			n by original TestAmeric	a lab?
	, LANL, Sandia) sites, pH of ALL con Renple IO's On bays				<u>109 pv</u> COC.	
	· · · · · · · · · · · · · · · · · · ·					
			 ·		·	· <u> </u>
•						
Corrective Action:						
<ul> <li>Client Contact</li> <li>Sample(s) pro</li> <li>Sample(s) on</li> </ul>	cessed "as is"	If re	Informed b leased, notif		· · ·	
Project Manageme		utth	Da	· · · · · · · · · · · · · · · · · · ·	>	