



TestAmerica Laboratories, Inc.

## ANALYTICAL REPORT

REVISED

PROJECT NO. 1991-135-11/002

Honeywell Ponds

Lot #: F9F050279

Sean Chisek

Andrews Engineering, Inc.  
3300 Ginger Creek Drive  
Springfield, IL 62711

TESTAMERICA LABORATORIES, INC.

Terry Romanko  
Project Manager

January 7, 2010

**Case Narrative**  
LOT NUMBER: F9F050279  
Revised

This report contains the analytical results for the seven samples received under chain of custody by STL St. Louis on June 5, 2009. These samples are associated with your Honeywell Ponds 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 STL 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.

**This report is revised to report Chemistry data on a wet-weight basis.**

Observations/Nonconformances

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

ICP-MS Metals

Batch 9159092:

The MS (MSD) recovery for uranium is outside the established QC limits. The RPD is within method acceptance criteria indicating a possible matrix interference. Method performance is demonstrated by acceptable LCS recovery.

**Affected Samples:**

F9F050279 (1): E-99

F9F050279 (2): E-100

F9F050279 (3): E-101

F9F050279 (4): E-102

F9F050279 (5): E-105

F9F050279 (6): E-104

F9F050279 (7): E-103

There were no nonconformances or observations noted with any other analysis on this lot.

**METHODS SUMMARY****F9F050279**

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Method D2216 Percent H2O Dry 105 Degrees C, Weigh Trace Inductively Coupled Plasma (ICP) Metals	ASTM Moisture, SW846 6010B	ASTM ASTM 2216

**References:**

ASTM      Annual Book Of ASTM Standards.

SW846      "Test Methods for Evaluating Solid Waste, Physical/Chemical  
Methods", Third Edition, November 1986 and its updates.

**SAMPLE SUMMARY**

F9F050279

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT</u>	<u>SAMPLE ID</u>	<u>SAMPLED</u>	<u>SAMP</u>
				<u>DATE</u>	<u>TIME</u>
LEE1D	001	E-99		06/02/09	08:30
LEE1V	002	E-100		06/02/09	09:45
LEE1W	003	E-101		06/02/09	10:15
LEE11	004	E-102		06/02/09	12:20
LEE12	005	E-105		06/03/09	10:10
LEE14	006	E-104		06/03/09	11:30
LEE3T	007	E-103		06/03/09	08:45

**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.

Andrews Engineering, Inc.

Client Sample ID: E-99

TOTAL Metals

Lot-Sample #...: F9F050279-001

Matrix.....: SOLID

Date Sampled...: 06/02/09 08:30 Date Received...: 06/05/09

% Moisture.....: 46

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION-	WORK
		LIMIT	UNITS		ANALYSIS DATE	ORDER #
Prep Batch #...	9159092					
Uranium	103	50.0	mg/kg	SW846 6010B	06/08-06/10/09	LKE1D1AC
		Dilution Factor: 1		Analysis Time...: 11:41		

Andrews Engineering, Inc.

Client Sample ID: E-99

General Chemistry

Lot-Sample #...: F9F050279-001    Work Order #...: LEE1D    Matrix.....: SOLID  
Date Sampled...: 06/02/09 08:30    Date Received...: 06/05/09  
% Moisture.....: 46

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Moisture	45.9	0.10	%	ASTM Moisture, %	06/10-06/11/09	9161252
		Dilution Factor: 1		Analysis Time...: 00:00		

Andrews Engineering, Inc.

Client Sample ID: E-100

TOTAL Metals

Lot-Sample #...: F9F050279-002

Matrix.....: SOLID

Date Sampled...: 06/02/09 09:45 Date Received...: 06/05/09

% Moisture.....: 46

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION-</u>	<u>WORK</u>
		<u>LIMIT</u>	<u>UNITS</u>		<u>ANALYSIS DATE</u>	<u>ORDER #</u>
Prep Batch #...: 9159092						
Uranium	156	50.0	mg/kg	SW846 6010B	06/08-06/10/09	LEE1V1AC
		Dilution Factor: 1		Analysis Time...: 12:19		

Andrews Engineering, Inc.

Client Sample ID: E-100

General Chemistry

Lot-Sample #....: F9F050279-002    Work Order #....: LEE1V    Matrix.....: SOLID  
 Date Sampled....: 06/02/09 09:45    Date Received...: 06/05/09  
 % Moisture.....: 46

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Moisture	46.1	0.10	%	ASTM Moisture, %	06/10-06/11/09	9161252
		Dilution Factor: 1		Analysis Time...: 00:00		

Andrews Engineering, Inc.

Client Sample ID: E-101

TOTAL Metals

Lot-Sample #....: F9F050279-003

Matrix.....: SOLID

Date Sampled....: 06/02/09 10:15 Date Received...: 06/05/09

% Moisture.....: 46

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION-	WORK
		LIMIT	UNITS		ANALYSIS DATE	ORDER #
Prep Batch #....: 9159092						
Uranium	155	50.0	mg/kg	SW846 6010B	06/08-06/10/09	LEE1W1AC
		Dilution Factor: 1		Analysis Time...: 12:26		

Andrews Engineering, Inc.

Client Sample ID: E-101

General Chemistry

Lot-Sample #...: F9F050279-003    Work Order #...: LEE1W    Matrix.....: SOLID  
Date Sampled...: 06/02/09 10:15    Date Received...: 06/05/09  
% Moisture.....: 46

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Moisture	45.6	0.10	%	ASTM Moisture, %	06/10-06/11/09	9161252

Dilution Factor: 1                      Analysis Time...: 00:00

Andrews Engineering, Inc.

Client Sample ID: E-102

TOTAL Metals

Lot-Sample #...: F9F050279-004

Matrix.....: SOLID

Date Sampled...: 06/02/09 12:20 Date Received...: 06/05/09

% Moisture.....: 50

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION-	WORK
		LIMIT	UNITS		ANALYSIS DATE	ORDER #
Prep Batch #...	9159092					
Uranium	159	50.0	mg/kg	SW846 6010B	06/08-06/10/09	LEE111AC
		Dilution Factor: 1		Analysis Time...: 12:32		

Andrews Engineering, Inc.

Client Sample ID: E-102

General Chemistry

Lot-Sample #....: F9F050279-004  
Date Sampled....: 06/02/09 12:20  
% Moisture.....: 50

Work Order #....: LEE11  
Date Received...: 06/05/09

Matrix.....: SOLID

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Moisture	49.6	0.10	%	ASTM Moisture, %	06/10-06/11/09	9161252
		Dilution Factor: 1		Analysis Time..: 00:00		

Andrews Engineering, Inc.

Client Sample ID: E-105

TOTAL Metals

Lot-Sample #...: F9F050279-005

Matrix.....: SOLID

Date Sampled...: 06/03/09 10:10 Date Received...: 06/05/09

% Moisture.....: 49

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION-	WORK
		LIMIT	UNITS		ANALYSIS DATE	ORDER #
Prep Batch #...	9159092					
Uranium	89.7	50.0	mg/kg	SW846 6010B	06/08-06/10/09	LEE121AC
		Dilution Factor: 1		Analysis Time...: 12:39		

Andrews Engineering, Inc.

Client Sample ID: E-105

General Chemistry

Lot-Sample #....: F9F050279-005    Work Order #....: LEE12    Matrix.....: SOLID  
Date Sampled...: 06/03/09 10:10    Date Received...: 06/05/09  
% Moisture.....: 49

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Moisture	49.0	0.10	%	ASTM Moisture, %	06/10-06/11/09	9161252
		Dilution Factor: 1		Analysis Time...: 00:00		

Andrews Engineering, Inc.

Client Sample ID: E-104

TOTAL Metals

Lot-Sample #...: F9F050279-006

Matrix.....: SOLID

Date Sampled...: 06/03/09 11:30 Date Received...: 06/05/09

% Moisture.....: 46

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION-	WORK
		LIMIT	UNITS		ANALYSIS DATE	ORDER #
Prep Batch #...: 9159092						
Uranium	107	50.0	mg/kg	SW846 6010B	06/08-06/10/09	LEE141AC
		Dilution Factor: 1		Analysis Time...: 12:45		

Andrews Engineering, Inc.

Client Sample ID: E-104

General Chemistry

Lot-Sample #....: F9F050279-006    Work Order #....: LEE14    Matrix.....: SOLID  
Date Sampled....: 06/03/09 11:30    Date Received...: 06/05/09  
% Moisture.....: 46

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Moisture	46.1	0.10	%	ASTM Moisture, %	06/10-06/11/09	9161252
		Dilution Factor: 1		Analysis Time...: 00:00		

Andrews Engineering, Inc.

Client Sample ID: E-103

TOTAL Metals

Lot-Sample #...: F9F050279-007

Matrix.....: SOLID

Date Sampled...: 06/03/09 08:45 Date Received...: 06/05/09

% Moisture.....: 47

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION-	WORK
		LIMIT	UNITS		ANALYSIS DATE	ORDER #
Prep Batch #...	9159092					
Uranium	136	50.0	mg/kg	SW846 6010B	06/08-06/10/09	LEE3T1AC
		Dilution Factor: 1		Analysis Time...: 12:52		

Andrews Engineering, Inc.

Client Sample ID: E-103

General Chemistry

Lot-Sample #...: F9F050279-007    Work Order #...: LEE3T    Matrix.....: SOLID  
 Date Sampled...: 06/03/09 08:45    Date Received...: 06/05/09  
 % Moisture.....: 47

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Moisture	47.1	0.10	%	ASTM Moisture, %	06/10-06/11/09	9161252
		Dilution Factor: 1		Analysis Time...: 00:00		

**METHOD BLANK REPORT**

**TOTAL Metals**

**Client Lot #...: F9F050279**

**Matrix.....: SOLID**

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
<b>MB Lot-Sample #: F9F080000-092 Prep Batch #...: 9159092</b>						
Uranium	ND	50.0	mg/kg	SW846 6010B	06/08-06/10/09	LEG8J1AA
		Dilution Factor: 1				
		Analysis Time...: 11:28				

**NOTE(S):**

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F9F050279

Matrix.....: SOLID

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
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LCS Lot-Sample#: F9F080000-092 Prep Batch #...: 9159092

Uranium 110 (80 - 120) SW846 6010B 06/08-06/10/09 LEG8J1AC

Dilution Factor: 1 Analysis Time...: 11:34

**NOTE(S):**

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

**MATRIX SPIKE SAMPLE EVALUATION REPORT**

**TOTAL Metals**

Client Lot #...: F9F050279

Matrix.....: SOLID

Date Sampled...: 06/02/09 08:30 Date Received...: 06/05/09

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
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MS Lot-Sample #: F9F050279-001 Prep Batch #...: 9159092

% Moisture.....: 46

Uranium	119	(75 - 125)			SW846 6010B	06/08-06/10/09	LEE1D1AE
	126 N	(75 - 125)	3.2	(0-30)	SW846 6010B	06/08-06/10/09	LEE1D1AF
			Dilution Factor: 1				
			Analysis Time...: 12:06				

**NOTE(S) :**

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #....: F9F050279

Matrix.....: SOLID

Date Sampled....: 06/02/09 08:30 Date Received...: 06/05/09

PARAMETER	AMOUNT	SAMPLE SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
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MS Lot-Sample #: F9F050279-001 Prep Batch #....: 9159092

% Moisture.....: 46

Uranium

103	100	222	mg/kg	119			SW846 6010B	06/08-06/10/09	LEE1D1AE
103	100	229 N	mg/kg	126	3.2		SW846 6010B	06/08-06/10/09	LEE1D1AF

Dilution Factor: 1

Analysis Time...: 12:06

**NOTE(S):**

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

N Spiked analyte recovery is outside stated control limits.

**SAMPLE DUPLICATE EVALUATION REPORT**

**General Chemistry**

Client Lot #....: F9F050279      Work Order #....: LEE3T-SMP      Matrix.....: SOLID

LEE3T-DUP

Date Sampled....: 06/03/09 08:45      Date Received...: 06/05/09

% Moisture.....: 47

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Moisture	47.1	48.0	%	1.9	(0-0.0)	ASTM Moisture, %	SD Lot-Sample #: F9F050279-007 06/10-06/11/09	9161252
				Dilution Factor: 1		Analysis Time...: 00:00		

TestAmerica St. Louis  
 13715 Rider Trail North  
 Earth City, MO 63045  
 phone 314-298-8566 fax 314-298-8566

*CUR*  
*3/12*

Chain of Custody Record

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories,

Client Contact		Project Manager: Sean Chisek				Site Contact: W. Brines				Date:				COC No:											
Andrews Engineering, Inc.		Tel/Fax: 217-622-3084				Lab Contact: T. Romanko				Carrier:				_____ of _____ COCs											
3300 Ginger Creek Drive		Analysis Turnaround Time														Job No.									
Springfield, IL 62711		Calendar (C) or Work Days (W)														SDG No.									
217-787-2334		TAT if different from Below <u>Standard</u>														Sample Specific Notes:									
217-787-9495 FAX		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day																							
Site: Honeywell Metropolis Pond Sampling																									
PO # 91-135-11																									
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Total U	% Moisture	TCLP Metals	TCLP VOCs	TCLP SVOCs	TCLP Pest/Herb	Flashpoint	Paint Filter	pH	Reactive S & CN	Isotopes	Cation Exchange	Bulk Density	Grain Size	Chloride/Sulfide	TOC	Total Phenolics			
E-99	6/2/09	8:30				X	X																	60g	
E-100	6/2/09	9:45				X	X																		
E-101	6/2/09	10:15				X	X																		
E-102	6/2/09	12:20				X	X																		
E-103 upper	6/3/09	8:45				X	X	X						XX	X	XX	XX	XX							3K250g
E-105	6/3/09	10:10				X	X																		
E-104	6/3/09	11:30				X	X																		
E-103 Lower	6/3/09	8:45				X	X	X						XX	X	XX	XX	XX							
Preservation Used: 1- Ice, 2- HCl; 3- H2SO4; 4-HNO3; 5-NaOH; 6- Other _____																									
Possible Hazard Identification													Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)												
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input checked="" type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown													<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months												
Special Instructions/QC Requirements & Comments:																									
Please email completed COC to schisek@andrews-eng.com and tsharp@andrews-eng.com * <i>Lera Dater</i>																									
Relinquished by: <i>[Signature]</i>		Company:		Date/Time: 6-5-09 9:45		Received by: <i>[Signature]</i>		Company:		Date/Time: 6-5-09 9:45		Relinquished by: <i>[Signature]</i>		Company:		Date/Time: 6-5-09 13:40		Relinquished by: <i>[Signature]</i>		Company:		Date/Time:			
Relinquished by: <i>[Signature]</i>		Company:		Date/Time: 6-5-09 11:40		Received by: <i>[Signature]</i>		Company: TA		Date/Time:		Relinquished by: <i>[Signature]</i>		Company:		Date/Time:		Relinquished by: <i>[Signature]</i>		Company:		Date/Time:			
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:		Relinquished by:		Company:		Date/Time:		Relinquished by:		Company:		Date/Time:			



Lot #(s): F9F050279  
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**CONDITION UPON RECEIPT FORM**

Client: Andrews Engineers

Quote No: F1890 342

COC/RFA No: N/A

Initiated By: AB Date: 6-5-09 Time: 9:13:40

Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: \_\_\_\_\_ Multiple Packages: Y (N)

Shipping # (s):*		Sample Temperature (s):**	
1. _____	6. _____	1. <u>6</u>	6. _____
2. _____	7. _____	2. _____	7. _____
3. _____	8. _____	3. _____	8. _____
4. _____	9. _____	4. _____	9. _____
5. _____	10. _____	5. _____	10. _____

\*Numbered shipping lines correspond to Numbered Sample Temp lines

\*\*Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid or Rad tests- Liquid or Solids

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1. Y <u>(N)</u>	Are there custody seals present on the cooler?	8. Y <u>(N)</u>	Are there custody seals present on bottles?
2. Y N <u>(N/A)</u>	Do custody seals on cooler appear to be tampered with?	9. Y N <u>(N/A)</u>	Do custody seals on bottles appear to be tampered with?
3. <u>(Y)</u> N	Were contents of cooler frisked after opening, but before unpacking?	10. Y N <u>(N/A)</u>	Was sample received with proper pH? (If not, make note below)
4. <u>(Y)</u> N	Sample received with Chain of Custody?	11. <u>(Y)</u> N	Sample received in proper containers?
5. <u>(Y)</u> <u>(N/A)</u>	Does the Chain of Custody match sample ID's on the container(s)?	12. Y N <u>(N/A)</u>	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
6. Y <u>(N)</u>	Was sample received broken?	13. Y N <u>(N/A)</u>	Was Internal COC/Workshare received?
7. <u>(Y)</u> N	Is sample volume sufficient for analysis?	14. Y N <u>(N/A)</u>	Was pH taken by original TestAmerica lab?

<sup>1</sup> For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX and soils.

Notes:

Receive sample not on COC - E-103 (6/8/09; 8:45) - 60g - 10g  
Per TR

Corrective Action:

- Client Contact Name: \_\_\_\_\_
- Sample(s) processed "as is"
- Sample(s) on hold until: \_\_\_\_\_
- Project Management Review: TR

Informed by: \_\_\_\_\_  
 If released, notify: \_\_\_\_\_  
 Date: 6/10/09