

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

REVISED

PROJECT NO. 1991-135-11/002

Honeywell Ponds

Lot #: F9D100276

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: F9D100276
Revised

This report contains the analytical results for the five samples received under chain of custody by STL St. Louis on April 8, 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.

Trace ICP Metals

Batch 9103207:

The MS (MSD) recovery for uranium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:

F9D100276 (1): C-36

F9D100276 (4): C-31

F9D100276 (2): C-32

F9D100276 (5): C-33

F9D100276 (3): C-30-U

The samples were analyzed at a dilution due to high concentrations of target or interfering analytes. The reporting limit has been adjusted for the dilution since no analysis at a lesser dilution was performed.

Affected Samples:

F9D100276 (3): C-30-U

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

METHODS SUMMARY

F9D100276

<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

F9D100276

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
K90LK	001	C-36	04/07/09	08:30
K90LL	002	C-32	04/03/09	10:30
K90LM	003	C-30-U	04/03/09	08:30
K90LN	004	C-31	04/03/09	09:30
K90LP	005	C-33	04/07/09	09:55

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: C-36

TOTAL Metals

Lot-Sample #...: F9D100276-001

Matrix.....: SOLID

Date Sampled...: 04/07/09 08:30 Date Received...: 04/08/09

% Moisture.....: 41

PARAMETER	RESULT	REPORTING			PREPARATION- ANALYSIS DATE	WORK ORDER #
		LIMIT	UNITS	METHOD		
Prep Batch #...	9103207					
Uranium	259	50.0	mg/kg	SW846 6010B	04/14/09	K90LK1AD
		Dilution Factor: 1		Analysis Time...: 16:44		

Andrews Engineering, Inc.

Client Sample ID: C-36

General Chemistry

Lot-Sample #....: F9D100276-001 Work Order #....: K90LK Matrix.....: SOLID
Date Sampled....: 04/07/09 08:30 Date Received...: 04/08/09
% Moisture.....: 41

<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	41.3	0.10	%	ASTM Moisture, %	04/13-04/14/09	9103341

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

Andrews Engineering, Inc.

Client Sample ID: C-32

TOTAL Metals

Lot-Sample #....: F9D100276-002

Matrix.....: SOLID

Date Sampled....: 04/03/09 10:30 Date Received...: 04/08/09

% Moisture.....: 43

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
		LIMIT	UNITS			
Prep Batch #....: 9103207						
Uranium	158	50.0	mg/kg	SW846 6010B	04/14/09	K90LL1AD
		Dilution Factor: 1		Analysis Time...: 17:03		

Andrews Engineering, Inc.

Client Sample ID: C-32

General Chemistry

Lot-Sample #....: F9D100276-002 Work Order #....: K90LL
 Date Sampled....: 04/03/09 10:30 Date Received...: 04/08/09
 % Moisture.....: 43

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	42.8	0.10	%	ASTM Moisture, %	04/13-04/14/09	9103341
		Dilution Factor: 1		Analysis Time...: 00:00		

Andrews Engineering, Inc.

Client Sample ID: C-30-U

TOTAL Metals

Lot-Sample #...: F9D100276-003

Matrix.....: SOLID

Date Sampled...: 04/03/09 08:30 Date Received...: 04/08/09

% Moisture.....: 46

<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>
Prep Batch #...	9103207					
Uranium	8410	1000	mg/kg	SW846 6010B	04/14-04/15/09	K901MLAD
		Dilution Factor: 20		Analysis Time...: 11:07		

Andrews Engineering, Inc.

Client Sample ID: C-30-U

General Chemistry

Lot-Sample #...: F9D100276-003 Work Order #...: K90LM
 Date Sampled...: 04/03/09 08:30 Date Received...: 04/08/09
 % Moisture.....: 46

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	46.3	0.10	%	ASTM Moisture, %	04/13-04/14/09	9103341
		Dilution Factor: 1		Analysis Time...: 00:00		

Andrews Engineering, Inc.

Client Sample ID: C-31

TOTAL Metals

Lot-Sample #...: F9D100276-004

Matrix.....: SOLID

Date Sampled...: 04/03/09 09:30 Date Received...: 04/08/09

% Moisture.....: 46

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
		LIMIT	UNITS			
Prep Batch #...	9103207					
Uranium	298	50.0	mg/kg	SW846 6010B	04/14/09	K90LN1AD
		Dilution Factor: 1		Analysis Time...: 17:16		

Andrews Engineering, Inc.

Client Sample ID: C-31

General Chemistry

Lot-Sample #....: F9D100276-004 Work Order #....: K90LN
 Date Sampled....: 04/03/09 09:30 Date Received...: 04/08/09
 % Moisture.....: 46

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	46.4	0.10	%	ASTM Moisture, %	04/13-04/14/09	9103341
		Dilution Factor: 1		Analysis Time..: 00:00		

Andrews Engineering, Inc.

Client Sample ID: C-33

TOTAL Metals

Lot-Sample #....: F9D100276-005

Matrix.....: SOLID

Date Sampled....: 04/07/09 09:55 Date Received...: 04/08/09

% Moisture.....: 40

<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>
Prep Batch #....: 9103207						
Uranium	286	50.0	mg/kg	SW846 6010B	04/14/09	K90LP1AD
		Dilution Factor: 1		Analysis Time...: 17:22		

Andrews Engineering, Inc.

Client Sample ID: C-33

General Chemistry

Lot-Sample #...: F9D100276-005 Work Order #...: K90LP Matrix.....: SOLID
 Date Sampled...: 04/07/09 09:55 Date Received...: 04/08/09
 % Moisture.....: 40

<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	40.3	0.10	%	ASTM Moisture, %	04/13-04/14/09	9103341
		Dilution Factor: 1		Analysis Time...: 00:00		

METHOD BLANK REPORT

TOTAL Metals

Client Lot #....: F9D100276

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F9D130000-207 Prep Batch #....: 9103207						
Uranium	ND	50.0	mg/kg	SW846 6010B	04/14/09	K91XH1AA
Dilution Factor: 1						
Analysis Time...: 15:46						

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F9D100276

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>
LCS Lot-Sample#:	F9D130000-207	Prep Batch #...:	9103207		
Uranium	113	(80 - 120)	SW846 6010B	04/14/09	K91XH1AC
		Dilution Factor: 1		Analysis Time..: 15:52	

NOTE (S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F9D100276

Matrix.....: SOLID

Date Sampled...: 04/07/09 09:35 Date Received...: 04/08/09

<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 #: F9D080316-002 Prep Batch #...: 9103207

% Moisture.....: 46

Uranium	151 N	(75 - 125)			SW846 6010B	04/14/09	K9TND1AV
	138 N	(75 - 125)	1.8	(0-30)	SW846 6010B	04/14/09	K9TND1AW

Dilution Factor: 1

Analysis Time...: 16:12

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 #...: F9D100276

Matrix.....: SOLID

Date Sampled...: 04/07/09 09:35 Date Received...: 04/08/09

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
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MS Lot-Sample #: F9D080316-002 Prep Batch #...: 9103207

% Moisture.....: 46

Uranium

555	100	706 N	mg/kg	151			SW846 6010B	04/14/09	K9TND1AV
555	100	693 N	mg/kg	138	1.8		SW846 6010B	04/14/09	K9TND1AW

Dilution Factor: 1
Analysis Time...: 16:12

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.



Lot #(s): F9D080316
F9D100276

CONDITION UPON RECEIPT FORM

Client: Andrews Engineering

Quote No: 81890

COC/RFA No: 101852

155

Initiated By: AB

Date: 4-8-09

Time: 16:37

Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: _____

Multiple Packages: Y N

Shipping # (s):*

Sample Temperature (s):**

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

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

Notes:

Received sample C-33 4/7/09 9:55 - not on COC - per TR login
Total 4% moisture

Corrective Action:

- Client Contact Name: _____
- Sample(s) processed "as is"
- Sample(s) on hold until: _____
- Project Management Review: [Signature]

Informed by: _____

If released, notify: _____

Date: 4/13/09

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.