



Isotopic Uranium Case Narrative

Cabrera Services, Inc. UNC New Haven CT – 10-1007.00

Work Order Number: 1607218

1. This report consists of the analytical results for 13 soil samples received by ALS on 7/14/2016.
2. These samples were prepared according to the current revisions of SOP 773, SOP 778, and SOP 736.
3. The samples were analyzed for the presence of isotopic uranium according to the current revision of SOP 714. The analyses were completed on 8/10/2016.
4. The isotopic analysis results for the samples are reported on a 'Dry Weight' basis in units of pCi/gram.
5. This analytical method quantifies U-235 alpha activity in a specific region of interest corresponding to emission energies between those of U-234 and U-238. A potential limitation of this method is that measurable amounts of U-234 in the sample may cause a small amount of characteristic activity in the U-235 region of interest due to poorly resolved alpha activity at the boundary between the two regions. To minimize the potential for a high bias in the U-235 analytical results, the U-235 region of interest has been narrowed and limited to a lower energy region. An 85.1% abundance correction has been made to the final U-235 results.
6. No anomalous situations were encountered during the preparation or analysis of these samples. All quality control criteria were met.



The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Hannah Alt
Hannah Alt
Radiochemistry Primary Data Reviewer

8/11/16
Date

[Signature]
Radiochemistry Final Data Reviewer

8/11/16
Date

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 1607218

Client Name: Cabrera Services, Inc.

Client Project Name: UNC New Haven CT

Client Project Number: 10-1007.00

Client PO Number: 01191

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
ML-SB-01-S-P-17	1607218-1		SOIL	11-Jul-16	10:00
ML-SB-02-S-P-14	1607218-2		SOIL	11-Jul-16	11:00
ML-SB-03-S-P-12	1607218-3		SOIL	11-Jul-16	12:00
ML-SB-04-S-P-9	1607218-4		SOIL	11-Jul-16	13:00
ML-SB-05-S-P-9	1607218-5		SOIL	11-Jul-16	14:00
ML-SB-06-S-P-11	1607218-6		SOIL	11-Jul-16	15:00
HW-SB-07-S-P-10	1607218-7		SOIL	12-Jul-16	8:00
HW-SB-08-S-P-10	1607218-8		SOIL	12-Jul-16	9:00
HW-SB-09-S-P-10	1607218-9		SOIL	12-Jul-16	10:00
HW-SB-10-S-P-10	1607218-10		SOIL	12-Jul-16	11:00
HW-SB-11-S-P-10	1607218-11		SOIL	12-Jul-16	12:00
HW-SB-12-S-P-12	1607218-12		SOIL	12-Jul-16	13:00
HW-SB-13-S-P-11	1607218-13		SOIL	12-Jul-16	14:00



ALS Environmental

225 Commerce Drive, Fort Collins, Colorado 80524
Tel: (970) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202-8

PROJECT NAME UNC New Haven CT		SAMPLER AC/MP		DATE 7/13/2016		PAGE 1 of 2		WORKORDER # 1607218	
PROJECT No. 10-1007.00		SITE ID		TURNAROUND 30 d		DISPOSAL		By Lab or Return to Client	
COMPANY NAME Cabrera Services		EDD FORMAT Standard							
SEND REPORT TO Greg Bright		PURCHASE ORDER							
ADDRESS 50 Founders Plaza Suite 207		BILL TO COMPANY Cabrera Services							
CITY / STATE / ZIP East Hartford CT 06108		INVOICE ATTN TO Accounts Payable							
PHONE 860-569-0095		ADDRESS 50 Founders Plaza Suite 207							
FAX		CITY / STATE / ZIP East Hartford CT 06108							
E-MAIL gbright@cabreraservices.com		PHONE 860-569-0095							
FAX		FAX							
E-MAIL gbright@cabreraservices.com		E-MAIL gbright@cabreraservices.com							
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	Isotopic Uranium (Alpha Spec)	
1	ML-SB-01-S-P-17	Soil	7/11/2016	10:00:00 AM	1	n/a	X		
2	ML-SB-02-S-P-14	Soil	7/11/2016	11:00:00 AM	1	n/a	X		
3	ML-SB-03-S-P-12	Soil	7/11/2016	12:00:00 PM	1	n/a	X		
4	ML-SB-04-S-P-9	Soil	7/11/2016	1:00:00 PM	1	n/a	X		
5	ML-SB-05-S-P-9	Soil	7/11/2016	2:00:00 PM	1	n/a	X		
6	ML-SB-06-S-P-11	Soil	7/11/2016	3:00:00 PM	1	n/a	X		
7	HW-SB-07-S-P-10	Soil	7/12/2016	08:00:00 AM	1	n/a	X		
8	HW-SB-08-S-P-10	Soil	7/12/2016	09:00:00 AM	1	n/a	X		
9	HW-SB-09-S-P-10	Soil	7/12/2016	10:00:00 AM	1	n/a	X		
10	HW-SB-10-S-P-10	Soil	7/12/2016	11:00:00 AM	1	n/a	X		

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)			
	X	LEVEL II (Standard QC)		
		LEVEL III (Std QC + forms)		
		LEVEL IV (Std QC + forms + raw data)		
Please return samples to client. Shipping instructions should be arranged with the POC listed above.				
ML=Met Lab / HW=Hot Waste Processing				
of 12				
Preservative Key: 1 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035				


SIGNATURE	PRINTED NAME	DATE	TIME
<i>Rebecca Nerola</i>	Rebecca Nerola	7/14/16	1300
RELINQUISHED BY	RECEIVED BY		
RELINQUISHED BY	RECEIVED BY		
RELINQUISHED BY	RECEIVED BY		
RELINQUISHED BY	RECEIVED BY		



2225 Commerce Drive, Fort Collins, Colorado 80524
 TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8



ALS Environmental

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

<div> <div>WORKORDER #</div> <div>1607218</div> </div>										<div> <div>PAGE</div> <div>2 of 2</div> </div>									
<div> <div>DATE</div> <div>7/13/2016</div> </div>										<div> <div>TURNAROUND</div> <div>30 d</div> </div>									
<div> <div>PROJECT NAME</div> <div>UNC New Haven CT</div> </div>										<div> <div>DISPOSAL</div> <div>By Lab or Return to Client</div> </div>									
<div> <div>PROJECT No.</div> <div>10-1007.00</div> </div>										<div> <div>Isotopic Uranium (Alpha Spec)</div> </div>									
<div> <div>COMPANY NAME</div> <div>Cabrera Services</div> </div>										<div> <div>AC/MP</div> <div>Standard</div> </div>									
<div> <div>SEND REPORT TO</div> </div>										<div> <div>EDD FORMAT</div> <div>PURCHASE ORDER</div> </div>									
<div> <div>ADDRESS</div> <div>50 Founders Plaza Suite 207</div> </div>										<div> <div>BILL TO COMPANY</div> <div>Cabrera Services</div> </div>									
<div> <div>CITY / STATE / ZIP</div> <div>East Hartford CT 06108</div> </div>										<div> <div>INVOICE ATTN TO</div> <div>Accounts Payable</div> </div>									
<div> <div>PHONE</div> <div>860-569-0095</div> </div>										<div> <div>ADDRESS</div> <div>50 Founders Plaza Suite 207</div> </div>									
<div> <div>FAX</div> </div>										<div> <div>CITY / STATE / ZIP</div> <div>East Hartford CT 06108</div> </div>									
<div> <div>E-MAIL</div> <div>gbright@cabreraseservices.com</div> </div>										<div> <div>PHONE</div> <div>860-569-0095</div> </div>									
<div> <div>E-MAIL</div> <div>gbright@cabreraseservices.com</div> </div>										<div> <div>FAX</div> </div>									
<div> <div>Lab ID</div> <div>11</div> </div>										<div> <div>Matrix</div> <div>Soil</div> </div>									
<div> <div>Field ID</div> <div>HW-SB-11-S-P-10</div> </div>										<div> <div>Sample Date</div> <div>7/12/2016</div> </div>									
<div> <div>Sample Time</div> <div>12:00:00 PM</div> </div>										<div> <div># Bottles</div> <div>1</div> </div>									
<div> <div>Pres.</div> <div>n/a</div> </div>										<div> <div>QC</div> <div>X</div> </div>									
<div> <div>Lab ID</div> <div>12</div> </div>										<div> <div>Matrix</div> <div>Soil</div> </div>									
<div> <div>Field ID</div> <div>HW-SB-12-S-P-12</div> </div>										<div> <div>Sample Date</div> <div>7/12/2016</div> </div>									
<div> <div>Sample Time</div> <div>1:00:00 PM</div> </div>										<div> <div># Bottles</div> <div>1</div> </div>									
<div> <div>Pres.</div> <div>n/a</div> </div>										<div> <div>QC</div> <div>X</div> </div>									
<div> <div>Lab ID</div> <div>13</div> </div>										<div> <div>Matrix</div> <div>Soil</div> </div>									
<div> <div>Field ID</div> <div>HW-SB-13-S-P-11</div> </div>										<div> <div>Sample Date</div> <div>7/12/2016</div> </div>									
<div> <div>Sample Time</div> <div>2:00:00 PM</div> </div>										<div> <div># Bottles</div> <div>1</div> </div>									
<div> <div>Pres.</div> <div>n/a</div> </div>										<div> <div>QC</div> <div>X</div> </div>									

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

For metals or anions, please detail analytes below.											
Comments:	QC PACKAGE (check below)	SIGNATURE	PRINTED NAME	DATE	TIME						
Please return samples to client. Shipping instructions should be arranged with the POC listed above. ML=Met Lab / HW=Hot Waste Processing	<table border="1"> <tr> <td>X</td> <td>LEVEL II (Standard QC)</td> </tr> <tr> <td></td> <td>LEVEL III (Std QC + forms)</td> </tr> <tr> <td></td> <td>LEVEL IV (Std QC + forms + raw data)</td> </tr> </table>	X	LEVEL II (Standard QC)		LEVEL III (Std QC + forms)		LEVEL IV (Std QC + forms + raw data)	RELINQUISHED BY	AI Craig	7/13/16	1320
	X	LEVEL II (Standard QC)									
		LEVEL III (Std QC + forms)									
		LEVEL IV (Std QC + forms + raw data)									
	RECEIVED BY	Rebecca Merola	7/14/16	1025							
		RELINQUISHED BY									
		RECEIVED BY									
		RELINQUISHED BY									
		RECEIVED BY									



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Cabron

Workorder No: 1607218

Project Manager: LRS

Initials: RLR

Date: 7/14/16

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<u>NO</u>
2. Are custody seals on shipping containers intact?	<u>NONE</u>	YES	NO
3. Are Custody seals on sample containers intact?	<u>NONE</u>	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<u>YES</u>	NO
5. Are the COC and bottle labels complete and legible?		<u>YES</u>	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<u>YES</u>	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	<u>YES</u>	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	<u>N/A</u>	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	<u>N/A</u>	YES	NO
10. Is there sufficient sample for the requested analyses?		<u>YES</u>	NO
11. Were all samples placed in the proper containers for the requested analyses?		<u>YES</u>	NO
12. Are all samples within holding times for the requested analyses?		<u>YES</u>	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<u>YES</u>	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	<u>N/A</u>	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	<u>N/A</u>	YES	NO
16. Were the samples shipped on ice?		YES	<u>NO</u>
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	<u>RAD ONLY</u>	YES	<u>NO</u>
Cooler #: <u>1</u>			
Temperature (°C): <u>AMB</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>12</u>			
Background µR/hr reading: <u>11</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <u>YES</u> NO / NA (If no, see Form 008.)			

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? YES / NO / NA Contact: [Signature]

Date/Time: 7/14/16

Project Manager Signature / Date: [Signature]

ORIGIN ID:CCMA (860) 819-3332
MADE IN USA
CABRERA SERVICES INC
50 FOUNDERS PLAZA, SUITE 207
EAST HARTFORD, CT 06108
UNITED STATES US

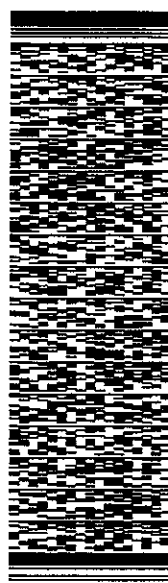
SHIP DATE: 13 JUL 16
ACTWGT: 30.00 LB
CAD: 105318400/NET3730
DIMS: 36x18x18 IN
BILL SENDER

TO LANCE STEERE
ALS LABORATORIES
225 COMMERCE DR

12-0

FORT COLLINS CO 80524

(970) 490-1511 REF: 10-100715
INV: PO: DEPT:



TRK# 7767 3444 9091
0201

THU - 14 JUL 10:30A
PRIORITY OVERNIGHT

NA FTCA

80524
CO-US DEN



540J15CBD727F

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy or a copy for shipping could result in additional billing charges, along with the cancellation of your FedEx account number. Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Method Blank Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Lab ID: AS160802-1MB

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 03-Aug-16

Date Prepared: 03-Aug-16

Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1

QCBatchID: AS160802-1-2

Run ID: AS160802-1UR

Count Time: 420 minutes

Final Aliquot: 2.00 g

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.0080 +/- 0.0092	0.0127	0.05	NA	U
15117-96-1	U-235	-0.0007 +/- 0.0098	0.0207	0.05	NA	U
7440-61-1	U-238	0.0070 +/- 0.0093	0.0155	0.05	NA	U

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	2.353	1.77	pCi/g	75.1	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Method Blank Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Lab ID: AS160803-7MB

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 03-Aug-16

Date Prepared: 03-Aug-16

Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7

QCBatchID: AS160803-7-2

Run ID: AS160803-7U

Count Time: 360 minutes

Final Aliquot: 2.00 g

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.022 +/- 0.016	0.014	0.05	NA	B3
15117-96-1	U-235	0.002 +/- 0.011	0.016	0.05	NA	U
7440-61-1	U-238	0.009 +/- 0.010	0.014	0.05	NA	U

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	2.353	1.78	pCi/g	75.6	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Laboratory Control Sample(s)

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Lab ID: AS160802-1LCS

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 03-Aug-16

Date Prepared: 03-Aug-16

Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1

QCBatchID: AS160802-1-2

Run ID: AS160802-1UR

Count Time: 420 minutes

Final Aliquot: 2.00 g

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13966-29-5	U-234	2.19 +/- 0.37	0.01	2.208	99.4	82 - 122	P
7440-61-1	U-238	2.44 +/- 0.41	0.02	2.292	106	82 - 122	P

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	2.353	1.92	pCi/g	81.5	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Laboratory Control Sample(s)

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Lab ID: AS160802-1LCSD

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 03-Aug-16

Date Prepared: 03-Aug-16

Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1

QCBatchID: AS160802-1-2

Run ID: AS160802-1UR

Count Time: 420 minutes

Final Aliquot: 2.00 g

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13966-29-5	U-234	2.33 +/- 0.41	0.01	2.208	106	82 - 122	P
7440-61-1	U-238	2.49 +/- 0.44	0.02	2.292	109	82 - 122	P

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	2.353	1.54	pCi/g	65.3	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Laboratory Control Sample(s)

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Lab ID: AS160803-7LCS

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 03-Aug-16

Date Prepared: 03-Aug-16

Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7

QCBatchID: AS160803-7-2

Run ID: AS160803-7U

Count Time: 360 minutes

Final Aliquot: 2.00 g

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13966-29-5	U-234	2.23 +/- 0.39	0.01	2.208	101	82 - 122	P
7440-61-1	U-238	2.43 +/- 0.42	0.02	2.292	106	82 - 122	P

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	2.353	1.85	pCi/g	78.5	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Duplicate Sample Results (DER)

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: ML-SB-02-S-P-14

Lab ID: 1607218-2DUP

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 11-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7

QCBatchID: AS160803-7-2

Run ID: AS160803-7U

Count Time: 360 minutes

Final Aliquot: 1.01 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Analyte	Sample				Duplicate				DER	DER Lim
		Result +/-	2 s TPU	MDC	Flags	Result +/-	2 s TPU	MDC	Flags		
13966-29-5	U-234	0.50 +/- 0.14		0.02		0.40 +/- 0.11		0.03		0.54	2.13
15117-96-1	U-235	0.016 +/- 0.025		0.046	U	0 +/- 0.021		0.043	U	0.49	2.13
7440-61-1	U-238	0.41 +/- 0.12		0.04		0.36 +/- 0.10		0.03		0.303	2.13

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Duplicate Sample Results (DER)

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:
Lab ID: AS160802-1LCSD

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 03-Aug-16
Date Prepared: 03-Aug-16
Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1
QCBatchID: AS160802-1-2
Run ID: AS160802-1UR
Count Time: 420 minutes

Final Aliquot: 2.00 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Analyte	Sample				Duplicate				DER	DER Lim
		Result +/-	2 s TPU	MDC	Flags	Result +/-	2 s TPU	MDC	Flags		
13966-29-5	U-234	2.19 +/- 0.37		0.01	P	2.33 +/- 0.41		0.01	P	0.252	2.13
7440-61-1	U-238	2.44 +/- 0.41		0.02	P	2.49 +/- 0.44		0.02	P	0.0861	2.13

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: ML-SB-01-S-P-17

Lab ID: 1607218-1

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 11-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7

QCBatchID: AS160803-7-2

Run ID: AS160803-7U

Count Time: 360 minutes

Report Basis: Dry Weight

Final Aliquot: 1.03 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	1.08 +/- 0.23	0.03	0.05	NA	
15117-96-1	U-235	0.066 +/- 0.040	0.015	0.05	NA	
7440-61-1	U-238	0.40 +/- 0.11	0.03	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.580	3.50	pCi/g	76.5	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: ML-SB-02-S-P-14

Lab ID: 1607218-2

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 11-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7

QCBatchID: AS160803-7-2

Run ID: AS160803-7U

Count Time: 360 minutes

Report Basis: Dry Weight

Final Aliquot: 1.06 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.50 +/- 0.14	0.02	0.05	NA	
15117-96-1	U-235	0.016 +/- 0.025	0.046	0.05	NA	U
7440-61-1	U-238	0.41 +/- 0.12	0.04	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.436	2.75	pCi/g	61.9	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Duplicate Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: ML-SB-02-S-P-14

Lab ID: 1607218-2DUP

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 11-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7

QCBatchID: AS160803-7-2

Run ID: AS160803-7U

Count Time: 360 minutes

Report Basis: Dry Weight

Final Aliquot: 1.01 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.40 +/- 0.11	0.03	0.05	NA	
15117-96-1	U-235	0 +/- 0.021	0.043	0.05	NA	U
7440-61-1	U-238	0.36 +/- 0.10	0.03	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.655	3.72	pCi/g	79.8	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Date Printed:

Thursday, August 11, 2016

ALS -- Fort Collins

LIMS Version: 6.821

Page 1 of 1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: ML-SB-03-S-P-12

Lab ID: 1607218-3

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 11-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7

QCBatchID: AS160803-7-2

Run ID: AS160803-7U

Count Time: 360 minutes

Report Basis: Dry Weight

Final Aliquot: 1.09 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.68 +/- 0.16	0.03	0.05	NA	
15117-96-1	U-235	0.028 +/- 0.027	0.036	0.05	NA	U
7440-61-1	U-238	0.36 +/- 0.10	0.04	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.325	3.28	pCi/g	75.8	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: ML-SB-04-S-P-9

Lab ID: 1607218-4

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 11-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7

QCBatchID: AS160803-7-2

Run ID: AS160803-7U

Count Time: 360 minutes

Report Basis: Dry Weight

Final Aliquot: 1.01 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.53 +/- 0.13	0.03	0.05	NA	
15117-96-1	U-235	0.022 +/- 0.022	0.015	0.05	NA	LT
7440-61-1	U-238	0.48 +/- 0.12	0.03	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.648	3.86	pCi/g	83.0	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: ML-SB-05-S-P-9

Lab ID: 1607218-5

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 11-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7

QCBatchID: AS160803-7-2

Run ID: AS160803-7U

Count Time: 360 minutes

Report Basis: Dry Weight

Final Aliquot: 1.01 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.298 +/- 0.094	0.040	0.05	NA	
15117-96-1	U-235	0.044 +/- 0.034	0.017	0.05	NA	LT
7440-61-1	U-238	0.34 +/- 0.10	0.03	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.671	3.28	pCi/g	70.2	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: ML-SB-06-S-P-11

Lab ID: 1607218-6

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 11-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7

QCBatchID: AS160803-7-2

Run ID: AS160803-7U

Count Time: 360 minutes

Report Basis: Dry Weight

Final Aliquot: 1.01 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.36 +/- 0.11	0.03	0.05	NA	
15117-96-1	U-235	0.041 +/- 0.034	0.034	0.05	NA	LT
7440-61-1	U-238	0.33 +/- 0.10	0.04	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.652	3.19	pCi/g	68.5	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: HW-SB-07-S-P-10

Lab ID: 1607218-7

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 12-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7

QCBatchID: AS160803-7-2

Run ID: AS160803-7U

Count Time: 360 minutes

Report Basis: Dry Weight

Final Aliquot: 1.02 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	1.04 +/- 0.22	0.03	0.05	NA	
15117-96-1	U-235	0.030 +/- 0.027	0.016	0.05	NA	LT
7440-61-1	U-238	0.67 +/- 0.16	0.01	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.601	3.30	pCi/g	71.6	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: HW-SB-08-S-P-10

Lab ID: 1607218-8

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 12-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7

QCBatchID: AS160803-7-2

Run ID: AS160803-7U

Count Time: 360 minutes

Report Basis: Dry Weight

Final Aliquot: 1.00 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.61 +/- 0.15	0.03	0.05	NA	
15117-96-1	U-235	0.026 +/- 0.025	0.030	0.05	NA	U
7440-61-1	U-238	0.37 +/- 0.10	0.03	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.694	3.81	pCi/g	81.3	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: HW-SB-09-S-P-10

Lab ID: 1607218-9

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 12-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1

QCBatchID: AS160802-1-2

Run ID: AS160802-1UR

Count Time: 420 minutes

Report Basis: Dry Weight

Final Aliquot: 1.06 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.56 +/- 0.13	0.03	0.05	NA	
15117-96-1	U-235	0.019 +/- 0.019	0.013	0.05	NA	LT
7440-61-1	U-238	0.40 +/- 0.10	0.02	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.438	3.29	pCi/g	74.1	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: HW-SB-10-S-P-10

Lab ID: 1607218-10

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 12-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1

QCBatchID: AS160802-1-2

Run ID: AS160802-1UR

Count Time: 420 minutes

Report Basis: Dry Weight

Final Aliquot: 1.05 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.66 +/- 0.15	0.01	0.05	NA	
15117-96-1	U-235	0.051 +/- 0.035	0.035	0.05	NA	
7440-61-1	U-238	0.45 +/- 0.11	0.03	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.493	3.31	pCi/g	73.6	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: HW-SB-11-S-P-10

Lab ID: 1607218-11

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 12-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1

QCBatchID: AS160802-1-2

Run ID: AS160802-1UR

Count Time: 420 minutes

Report Basis: Dry Weight

Final Aliquot: 1.01 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.77 +/- 0.17	0.02	0.05	NA	
15117-96-1	U-235	0.013 +/- 0.021	0.038	0.05	NA	U
7440-61-1	U-238	0.333 +/- 0.092	0.029	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.679	3.78	pCi/g	80.7	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: HW-SB-12-S-P-12

Lab ID: 1607218-12

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 12-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1

QCBatchID: AS160802-1-2

Run ID: AS160802-1UR

Count Time: 420 minutes

Report Basis: Dry Weight

Final Aliquot: 1.05 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	2.64 +/- 0.48	0.03	0.05	NA	
15117-96-1	U-235	0.116 +/- 0.054	0.036	0.05	NA	
7440-61-1	U-238	0.49 +/- 0.12	0.04	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.496	3.14	pCi/g	69.8	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID: HW-SB-13-S-P-11

Lab ID: 1607218-13

Sample Matrix: SOIL

Prep SOP: PAI 778 Rev 14

Date Collected: 12-Jul-16

Date Prepared: 03-Aug-16

Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1

QCBatchID: AS160802-1-2

Run ID: AS160802-1UR

Count Time: 420 minutes

Report Basis: Dry Weight

Final Aliquot: 1.03 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	2.22 +/- 0.40	0.02	0.05	NA	
15117-96-1	U-235	0.100 +/- 0.046	0.013	0.05	NA	
7440-61-1	U-238	0.42 +/- 0.11	0.03	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.575	3.72	pCi/g	81.3	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1