

TA03



A Division of DataChem Laboratories, Inc.



225 Commerce Drive, Fort Collins, Colorado 80524  
TE: (800) 443-1511 ♦ PH: (970) 490-1511 ♦ FX: (970) 490-1522  
www.paragonlabs.com

June 25, 2008

Ms. Kim Granzow  
NMED DOE Oversight Bureau  
134 State Rd. 4, Suite A  
White Rock NM 87544

Re: Paragon Workorder: 08-05-246  
Client Project Name: None Submitted  
Client Project Number: 05.29.08-569(HWB MCOI-4)

Dear Ms. Granzow:

Five water samples were received from NMED DOE Oversight Bureau on May 31, 2008.  
The samples were scheduled for the following analyses:

Metals	pages 1-21	GC/MS Volatiles	pages 1-15
Perchlorate	pages 1-12	Isotopic Plutonium	pages 1-11
Neptunium-237	pages 1-11	Isotopic Americium	pages 1-10
Isotopic Curium	pages 1-10	GC/MS Semivolatiles	pages 1-16

The results for these analyses are contained in the enclosed reports.

Thank you for your confidence in Paragon Analytics. Should you have any questions, please call.

Sincerely,

Paragon Analytics  
Lance Steere  
Senior Project Manager

LRS/mh  
Enclosure (s): Report and CD

31501



Mortandad watershed

Disk 1

# Paragon Analytics

## Sample Number(s) Cross-Reference Table

---

**Paragon OrderNum:** 0805246

**Client Name:** NMED DOE Oversight Bureau

**Client Project Name:**

**Client Project Number:** 05.29.08-569(HWB MCOI-4)

**Client PO Number:** 06-667-55-01754

---

<b>Client Sample Number</b>	<b>Lab Sample Number</b>	<b>COC Number</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Time Collected</b>
MCOI-4-5-29-08-CIO4	0805246-1		WATER	29-May-08	16:06
MCOI-4-5-29-08-MET	0805246-2		WATER	29-May-08	16:06
MCOI-4-5-29-08-VOC	0805246-3		WATER	29-May-08	16:06
MCOI-4-5-29-08-SVOC	0805246-4		WATER	29-May-08	16:06
MCOI-4-5-29-08-RAD	0805246-5		WATER	29-May-08	16:06



CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: NMED

Workorder No: 0805246

Project Manager: LS

Initials: CT Date: 5-31-08

1. Does this project require any <b>special handling</b> in addition to standard Paragon procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody <b>seals on shipping containers</b> intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on <b>sample containers</b> intact?	NONE	<input checked="" type="radio"/> YES	NO
4. Is there a <b>COC (Chain-of-Custody)</b> present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the <b>COC and bottle labels complete and legible</b> ?		<input checked="" type="radio"/> YES	NO
6. Is the <b>COC in agreement</b> with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were <b>airbills / shipping documents</b> present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous <b>samples requiring preservation preserved correctly</b> ? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous <b>non-preserved samples pH 4-9</b> ?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there <b>sufficient sample</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the <b>proper containers</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within <b>holding times</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received <b>intact</b> ? (not broken or leaking, etc.)		YES	<input checked="" type="radio"/> NO
14. Are all samples requiring no headspace (VOC, GRO, Rx CN/S, radon), headspace free? Size of bubble: ___ < green pea ___ > green pea	<input checked="" type="radio"/> N/A	<input checked="" type="radio"/> YES	NO
15. Were samples checked for and free from the presence of <b>residual chlorine</b> ? (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	<input checked="" type="radio"/> N/A	YES	NO
16. Were the samples <b>shipped on ice</b> ?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #2 <input checked="" type="radio"/> #4	<input checked="" type="radio"/> YES	NO
Cooler #: <u>9231</u>			
Temperature (°C): <u>3.2</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>18</u>			
Background µR/hr reading: <u>13</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no. see Form 008.)			

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

The lids on the 1 Liter Amber bottles were received broken, it didn't appear that anything leaked. The lids were replaced with new ones.

*Noted for*

If applicable, was the client contacted?  YES / NO / NA Contact: K. Granger Date/Time: \_\_\_\_\_

Project Manager Signature / Date: [Signature] 6/2/08

\*IR Gun #2: Oakton, SN 29922500201-0066

\*IR Gun #4: Oakton, SN 2372220101-0002

080246

From Date 8-30-7 Sender's FedEx Account Number

Sender's Name Michael J. ... Phone 505 672-0444

Company UNION ...

Address 194 ...

City Albuquerque State NM ZIP 87114

Your Internal Billing Reference 252408-CLARKINE (1001-4)

To Recipient's Name Lance Jesse Phone 970 490-1511

Company Paragon Analytics

Recipient's Address 225 Commerce Dr.

Address City Ft. Collins State CO ZIP 80514



8604 4512 4081

3.2

4a Express Package Service
1 [X] FedEx Priority Overnight
5 [ ] FedEx Standard Overnight
6 [ ] FedEx First Overnight
3 [ ] FedEx 2Day
20 [ ] FedEx Express Saver

4b Express Freight Service
7 [ ] FedEx 1Day Freight
8 [ ] FedEx 2Day Freight
83 [ ] FedEx 3Day Freight

5 Packaging
6 [ ] FedEx Envelope
2 [ ] FedEx Pak
3 [ ] FedEx Box
4 [ ] FedEx Tube
1 [X] Other

6 Special Handling
3 [X] SATURDAY Delivery
HOLD Weekday at FedEx Location
31 [ ] HOLD Saturday at FedEx Location

7 Payment
1 [ ] Sender Acct. No.
2 [X] Recipient
3 [ ] Third Party
4 [ ] Credit Card
5 [ ] Cash/Check

Total Packages: 1
Total Weight: 44
Total Charges: [ ]

8 NEW Residential Delivery Signature Options
[ ] No Signature Required
10 [ ] Direct Signature
34 [ ] Indirect Signature





# Paragon Analytics

## Radiochemistry Case Narrative

### Neptunium-237

---

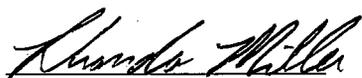
#### NMED DOE Oversight Bureau

05.29.08-569(HWB MCOI-4)

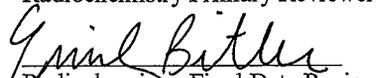
PA WO 0805246

1. This report consists of the analytical results for one water sample received by Paragon on 05/31/08.
2. This sample was prepared according to procedures PA SOP765R4 and PA SOP776R11. Modifications were made to the method as described on QASS 316066. Due to limited volume, a reduced aliquot of 850 ml was taken for this sample.
3. The sample was analyzed for the presence of Np-237 according to procedure PA SOP714R11. Chemical yield data are generated from the results of parallel analysis of splits of each analytical sample spiked with NIST traceable Np-237. The analysis was completed on 06/06/08.
4. The analysis results for this sample are reported in units of pCi/L. The sample was not filtered prior to analysis.
5. Due to insufficient sample volume, a laboratory control sample duplicate (LCSD) was prepared in lieu of a prep batch duplicate.
6. No further anomalous situations were encountered during the preparation or analysis of this sample. All remaining quality control criteria were met.

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

  
Rhonda Miller  
Radiochemistry Primary Reviewer

6/16/08  
Date

  
Gerald Butler  
Radiochemistry Final Data Review

6/20/08  
Date

# Paragon Analytics

## Sample Number(s) Cross-Reference Table

---

**Paragon OrderNum:** 0805246

**Client Name:** NMED DOE Oversight Bureau

**Client Project Name:**

**Client Project Number:** 05.29.08-569(HWB MCOI-4)

**Client PO Number:** 06-667-55-01754

---

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
MCOI-4-5-29-08-CIO4	0805246-1		WATER	29-May-08	16:06
MCOI-4-5-29-08-MET	0805246-2		WATER	29-May-08	16:06
MCOI-4-5-29-08-VOC	0805246-3		WATER	29-May-08	16:06
MCOI-4-5-29-08-SVOC	0805246-4		WATER	29-May-08	16:06
MCOI-4-5-29-08-RAD	0805246-5		WATER	29-May-08	16:06



CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: NMED  
Project Manager: LS

Workorder No: 0805246  
Initials: CT Date: 5-31-08

1. Does this project require any <b>special handling</b> in addition to standard Paragon procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on <b>shipping containers</b> intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on <b>sample containers</b> intact?	NONE	<input checked="" type="radio"/> YES	NO
4. Is there a <b>COC (Chain-of-Custody)</b> present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the <b>COC and bottle labels</b> complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the <b>COC in agreement</b> with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were <b>airbills / shipping documents</b> present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous <b>samples requiring preservation</b> preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous <b>non-preserved samples</b> pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there <b>sufficient sample</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the <b>proper containers</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within <b>holding times</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received <b>intact?</b> (not broken or leaking, etc.)		YES	<input checked="" type="radio"/> NO
14. Are all samples requiring no headspace (VOC, GRO, Rx CN/S, radon), headspace free? Size of bubble: ___ < green pea ___ > green pea	<sup>at 531-01</sup> <input checked="" type="radio"/> N/A	<input checked="" type="radio"/> YES	NO
15. Were samples checked for and free from the presence of <b>residual chlorine?</b> (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	<input checked="" type="radio"/> N/A	YES	NO
16. Were the samples <b>shipped on ice?</b>		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #2 <input checked="" type="radio"/> #4	RAD ONLY	<input checked="" type="radio"/> YES NO
Cooler #: <u>531-01</u>			
Temperature (°C): <u>3.2</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>18</u>			
Background µR/hr reading: <u>13</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no. see Form 008.)			

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

The lids on the 1 Liter Amber bottles were received broken, it didn't appear that anything leaked. The lids were replaced with new ones.

*Noted for*

If applicable, was the client contacted?  YES / NO / NA Contact: K. Grant Date/Time: \_\_\_\_\_

Project Manager Signature / Date: [Signature] 6/2/08

\*IR Gun #2: Oakton, SN 29922500201-0066

\*IR Gun #4: Oakton, SN 2372220101-0002

8604 4512 4081

0200

Form ID No.

FedEx Retrieval Copy

From **8-30** Sender's FedEx Account Number  
 Date **8-30**  
 Sender's Name **Michael Dale** Phone **505 672-0440**

Company **DAVID DOE JR**

Address **194 State Road 4 Suite A** Dept./Floor/Suite/Room

City **Albuquerque** State **NM** ZIP **87144**

Your Internal Billing Reference **25,29,58 - 529 / HWB MKSI - 4)**

To Recipient's Name **Lance Stieve** Phone **970 490-1511**

Company **Paragon Analytics**

Recipient's Address **225 Commerce Dr.** Dept./Floor/Suite/Room

To request a package be held at a specific FedEx location, print FedEx address here.

City **FT. Collins** State **CO** ZIP **70504**



8604 4512 4081

3.2

**4a Express Package Service**

- 1** FedEx Priority Overnight  
Next business morning. \* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 5** FedEx Standard Overnight  
Next business afternoon. \* Saturday Delivery NOT available.
- 6** FedEx First Overnight  
Earliest next business morning delivery to select locations. \* Saturday Delivery NOT available.
- 3** FedEx 2Day  
Second business day. \* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected. FedEx Envelope rate not available. Minimum charge: One-pound rate.
- 20** FedEx Express Saver  
Third business day. \* Saturday Delivery NOT available.

**4b Express Freight Service**

- 7** FedEx 1Day Freight\*  
Next business day. \*\* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 8** FedEx 2Day Freight  
Second business day. \*\* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 83** FedEx 3Day Freight  
Third business day. \*\* Saturday Delivery NOT available.

\* Call for Confirmation.

**5 Packaging**

- 6** FedEx Envelope\*
- 2** FedEx Pak\*  
Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- 3** FedEx Box
- 4** FedEx Tube
- 1** Other  
\* Declared value limit \$500.

**6 Special Handling**

- 31** SATURDAY Delivery  
Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
  - HOLD Weekday at FedEx Location**  
Not available for FedEx First Overnight.
  - 31** HOLD Saturday at FedEx Location  
Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.
- Does this shipment contain dangerous goods?  
 One box must be checked.  
 **No**  **4**  **Yes** As per attached Shipper's Declaration.  
 **Yes** Shipper's Declaration not required.
- 6** Dry Ice  
Dry ice, 9 UN 1845  Cargo Aircraft Only

**7 Payment Bill to:**

- 1** Sender Acct. No. in Section 1 will be billed.
- 2** Recipient
- 3** Third Party
- 4** Credit Card
- 5** Cash/Check

Total Packages		Total Weight		Total Charges
1		44		
Credit Card Auth:				

\* Our liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

**8 NEW Residential Delivery Signature Options** If you require a signature, check Direct or Indirect.

- No Signature Required**  
Package may be left without obtaining a signature for delivery.
- 10** Direct Signature  
Anyone at recipient's address may sign for delivery. Fee applies.
- 34** Indirect Signature  
If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. Fee applies.

520

Rev. Data 8/05-Part #158281-01994-2005 FedEx-PRINTED IN U.S.A. SRY

QUALITY ASSURANCE SUMMARY SHEET

PAI W.O. # / BATCH Generic  
TEST Np  
METHOD Prep  
SOP/REV (PREP) 765/4  
SOP/REV (ANAL) \_\_\_\_\_

Briefly document any QA or other problems or deviations associated with the analysis of samples. Problems could result from: log-in, color, odor, dilution, consistency, scheduling, equipment, or instrumentation, or may include documentation of minor deviations necessary due to unique DQO's or sample characteristics.

In order to improve spectral quality in Neptunium analysis 10 dpm of Np 237 was added to the LCS instead of the 5dpm instructed in SOP 765/4 section 8.1.2.

*JS 9/12/06*

TECHNICIAN/ANALYST Juday Beaman

DATE 9/12/06

DEPARTMENT MANAGER Joe [Signature]

DATE 9/12/06

316066

# Neptunium-237 By Alpha Spectroscopy

PAI 714 Rev 11

## Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: AS080603-6MB	Sample Matrix: WATER Prep SOP: PAI 765 Rev 4 Date Collected: 03-Jun-08 Date Prepared: 03-Jun-08 Date Analyzed: 06-Jun-08	Prep Batch: AS080603-6 QCBatchID: AS080603-6-1 Run ID: AS080603-6A Count Time: 1000 minutes	Final Aliquot: 850 ml Result Units: pCi/l File Name: Spectrum #1
----------------------	--	--	--

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	Lab Qualifier
13994-20-2	Np-237	0 +/- 0.0096	0.018	0.05	U

### Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Np-237+	16.33	13.9	pCi/l	85.0	40 - 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 (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- 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.

Data Package ID: NP0805246-1

# Neptunium-237 By Alpha Spectroscopy

PAI 714 Rev 11

## Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: AS080603-6LCS

Sample Matrix: WATER  
Prep SOP: PAI 765 Rev 4  
Date Collected: 03-Jun-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-6  
QCBatchID: AS080603-6-1  
Run ID: AS080603-6A  
Count Time: 1000 minutes

Final Aliquot: 850 ml  
Result Units: pCi/l  
File Name: Spectrum #1

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13994-20-2	Np-237	5.32 +/- 2.08	0.0194	5.44	97.6	65 - 135	P

## Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Np-237+	16.33	13.9	pCi/l	85.0	40 - 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 (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: NP0805246-1

# Neptunium-237 By Alpha Spectroscopy

PAI 714 Rev 11

## Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: AS080603-6LCSD

Sample Matrix: WATER  
Prep SOP: PAI 765 Rev 4  
Date Collected: 03-Jun-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-6  
QCBatchID: AS080603-6-1  
Run ID: AS080603-6A  
Count Time: 1000 minutes

Final Aliquot: 850 ml  
Result Units: pCi/l  
File Name: Spectrum #1

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13994-20-2	Np-237	5.53 +/- 2.16	0.0210	5.44	102	65 - 135	P

## Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Np-237+	16.33	13.9	pCi/l	85.0	40 - 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 (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: NP0805246-1

# Neptunium-237 By Alpha Spectroscopy

PAI 714 Rev 11

## Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	
Lab ID:	AS080603-6LCSD

Sample Matrix: WATER  
Prep SOP: PAI 765 Rev 4  
Date Collected: 03-Jun-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-6  
QCBatchID: AS080603-6-1  
Run ID: AS080603-6A  
Count Time: 1000 minutes

Final Aliquot: 850 ml  
Prep Basis: Unfiltered  
Moisture(%): NA  
Result Units: pCi/l  
File Name: Spectrum #1

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
13994-20-2	Np-237	5.3 +/- 2.1	5.5 +/- 2.2	0.07	2.13	P

### 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 (see PAI SOP 743)
- DER - Duplicate Error Ratio (see PAI SOP 715)
- BDL - Below Detection Limit
- NR - Not Reported

Data Package ID: NP0805246-1

# Neptunium-237 By Alpha Spectroscopy

PAI 714 Rev 11

## Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	MCOI-4-5-29-08-RAD
Lab ID:	0805246-5

Sample Matrix: WATER  
Prep SOP: PAI 765 Rev 4  
Date Collected: 29-May-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-6  
QCBatchID: AS080603-6-1  
Run ID: AS080603-6A  
Count Time: 1000 minutes  
Report Basis: Unfiltered

Final Aliquot: 850 ml  
Prep Basis: Unfiltered  
Moisture(%): NA  
Result Units: pCi/l  
File Name: Spectrum #1

Analysis ReqCode: 309

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	Lab Qualifier
13994-20-2	Np-237	-0.0024 +/- 0.014	0.031	0.05	U

### Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Np-237+	16.33	12.3	pCi/l	75.0	40 - 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 (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: NP0805246-1

# Paragon Analytics

## METALS CASE NARRATIVE

---

### NMED DOE Oversight Bureau

05.29.08-569(HWB MCOI-4)

**Order Number - 0805246**

1. This report consists of 1 water sample.
2. The sample was received cool and intact on 05/31/08.
3. The sample was to be analyzed for dissolved metals. The sample had been filtered prior to receipt, and had a pH less than 2 upon receipt.
4. The sample was prepared for analysis based on SW-846, 3<sup>rd</sup> Edition procedures.

For analysis by Trace ICP and ICP-MS, the sample was digested following method 3005A and PA SOP 806 Rev. 13.

The sample was prepared for ICP-MS analysis of arsenic and selenium by passing the digested sample and associated QC through a cation exchange column. The cation exchange column removes cations from the matrix and eliminates the CaCl<sup>+</sup> (mass 75) interferences on arsenic.

For analysis by Cold Vapor AA (CVAA), the sample was digested following method 7470A and PA SOP 812 Rev. 14.

5. The sample was analyzed following SW-846, 3<sup>rd</sup> Edition procedures.

Analysis by Trace ICP followed method 6010B and PA SOP 834 Rev. 7.

The relationship between intensity and concentration for each element is established using at least four standards, one of which is a blank solution.

During sample analysis concentrations are computed by the software and the results are printed in mg/L. The instrument software does not provide a printout which gives both intensity and concentration. The validity of the calibration equation is tested by analyzing the following solutions: a blank, a low level check solution with concentrations near the reporting limit, an Initial Calibration Verification (ICV) standard from a 2<sup>nd</sup> source standard solution with concentrations near the middle of the analytical range, a Continuing Calibration Verification (CCV) standard with concentrations at two times those in the ICV, and a readback of the highest calibration standard.

These solutions provide verification that the calibration equations are functioning properly throughout the analytical range of the instrument. During sample analysis dilutions are made for analytes found at concentrations above the highest calibration standard. No results are taken from extrapolations beyond the highest standard.

Analysis by ICP-MS followed method 6020A and PA SOP 827 Rev. 6.

The relationship between intensity and concentration for each element is established using at least four standards, one of which is a blank solution. A calibration equation relating instrument response to concentration is developed by the instrument software. The equation is a higher order polynomial. This type of equation is used to improve quantitation accuracy at lower concentrations where the relationship between concentration and instrument response is non-linear.

During sample analysis concentrations are computed by the software and the results are printed in ug/L. The validity of the calibration equation is tested by analyzing the following solutions: a blank, a low level check solution with concentrations near the reporting limit, an Initial Calibration Verification (ICV) standard from a 2<sup>nd</sup> source standard solution with concentrations near the middle of the analytical range, a Continuing Calibration Verification (CCV) standard with concentrations near the middle of the analytical range but different than those in the ICV, and a readback of the highest calibration standard.

These solutions provide verification that the calibration equations are functioning properly throughout the analytical range of the instrument. During sample analysis dilutions are made for analytes found at concentrations above the highest calibration standard. No results are taken from extrapolations beyond the highest standard.

Analysis by CVAA followed method 7470A and PA SOP 812 Rev. 14.

The relationship between intensity and concentration is determined daily, prior to sample analysis. At least five standards and a blank solution are analyzed to establish the calibration curve. The instrument software performs a linear regression to fit the calibration data to a curve of the form:

$$\text{conc.} = B * I + C$$

where: conc. = concentration

B = slope coefficient

I = intensity

C = intercept coefficient

A printout summarizing the calibration data supplies the calibration curve and correlation coefficient. During sample analysis both intensity and concentration values are printed. Dilutions are made for concentrations above

the highest calibration standard. No results are taken from extrapolations above the highest standard.

6. All standards and solutions are NIST traceable and were used within their recommended shelf life.
7. The sample was prepared and analyzed within the established hold times.

All in house quality control procedures were followed, as described below.

8. General quality control procedures.
  - A preparation (method) blank and laboratory control sample were digested and analyzed with the samples in each digestion batch. There were not more than 20 samples in each digestion batch.
  - The preparation (method) blank associated with each digestion batch was below the practical quantitation limit for each requested analyte.
  - The laboratory control sample associated with each digestion batch was within the acceptance limits. This indicates complete digestion according to the method.
  - All initial and continuing calibration blanks associated with each analytical batch were below the practical quantitation limits for the requested analytes.
  - All initial and continuing calibration verifications associated with each analytical batch were within the acceptance criteria for the requested analytes. This indicates a valid calibration and stable instrument conditions.
  - The high standard readbacks associated with Method 6010B and 6020A analyses were within acceptance criteria.
  - The interference check samples associated with Method 6010B were within acceptance criteria.
  - The interference check samples associated with Method 6020A were analyzed.
9. Matrix specific quality control procedures.

Sample 0805246-2 was designated as the quality control sample for the Trace ICP and ICP-MS analyses. Per method requirements, matrix QC was performed for the mercury analysis. Since a sample from this order number was not the selected quality control (QC) sample, matrix specific QC results are not included in this report.

Similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
- A sample duplicate and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.

- A serial dilution was analyzed with each ICP batch. All acceptance criteria were met.

10. It is a standard PA practice that samples for ICP-MS are analyzed at a dilution.

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

Emily Knodel  
Emily Knodel  
Inorganics Primary Data Reviewer

06-20-08  
Date

Bob Smith  
Inorganics Final Data Reviewer

6/20/08  
Date

## **Inorganic Data Reporting Qualifiers**

The following qualifiers are used by the laboratory when reporting results of inorganic analyses.

- Result qualifier -- A “B” is entered if the reported value was obtained from a reading that was less than the Practical Quantitation Limit but greater than or equal to the Instrument Detection Limit (IDL). If the analyte was analyzed for but not detected a “U” is entered.
- QC qualifier -- Specified entries and their meanings are as follows:
  - E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
  - M - Duplicate injection precision was not met.
  - N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
  - Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
  - \* - Duplicate analysis (relative percent difference) not within control limits.
  - S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

# Paragon Analytics

## Sample Number(s) Cross-Reference Table

---

**Paragon OrderNum:** 0805246

**Client Name:** NMED DOE Oversight Bureau

**Client Project Name:**

**Client Project Number:** 05.29.08-569(HWB MCOI-4)

**Client PO Number:** 06-667-55-01754

---

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
MCOI-4-5-29-08-CIO4	0805246-1		WATER	29-May-08	16:06
MCOI-4-5-29-08-MET	0805246-2		WATER	29-May-08	16:06
MCOI-4-5-29-08-VOC	0805246-3		WATER	29-May-08	16:06
MCOI-4-5-29-08-SVOC	0805246-4		WATER	29-May-08	16:06
MCOI-4-5-29-08-RAD	0805246-5		WATER	29-May-08	16:06



CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: NMED

Workorder No: 0805246

Project Manager: LS

Initials: CT Date: 5-31-08

1. Does this project require any <b>special handling</b> in addition to standard Paragon procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on <b>shipping containers</b> intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on <b>sample containers</b> intact?	NONE	<input checked="" type="radio"/> YES	NO
4. Is there a <b>COC (Chain-of-Custody)</b> present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the <b>COC and bottle labels</b> complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the <b>COC in agreement</b> with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were <b>airbills / shipping documents</b> present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous <b>samples requiring preservation</b> preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous <b>non-preserved samples</b> pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there <b>sufficient sample</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the <b>proper containers</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within <b>holding times</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received <b>intact?</b> (not broken or leaking, etc.)		YES	<input checked="" type="radio"/> NO
14. Are all samples requiring no headspace (VOC, GRO, Rx CN/S, radon), headspace free? Size of bubble: _____ < green pea _____ > green pea	<sup>at 531-08</sup> <input checked="" type="radio"/> N/A	<input checked="" type="radio"/> YES	NO
15. Were samples checked for and free from the presence of <b>residual chlorine?</b> (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	<input checked="" type="radio"/> N/A	YES	NO
16. Were the samples <b>shipped on ice?</b>		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #2 <input checked="" type="radio"/> #4	RAD ONLY	<input checked="" type="radio"/> YES NO
Cooler #: <u>9.531-08</u> 1			
Temperature (°C): <u>3.2</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>18</u>			
Background µR/hr reading: <u>13</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no. see Form 008.)			

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

The lids on the 1 Liter Amber bottles were received broken, it didn't appear that anything leaked. The lids were replaced with new ones.

*Noted for*

If applicable, was the client contacted?  YES / NO / NA Contact: K. Grant Date/Time: \_\_\_\_\_

Project Manager Signature / Date: [Signature] 6/2/08

\*IR Gun #2: Oakton, SN 29922500201-0066

\*IR Gun #4: Oakton, SN 2372220101-0002

8604 4512 4081

0200

Form ID No.

FedEx Retrieval Copy

080246

From **8-30** Sender's FedEx Account Number

Sender's Name **Michael Dale** Phone **505 672-0440**

Company **DAVID DOE JR**

Address **194 State Road 4 Suite A**

City **Albuquerque** State **NM** ZIP **87544**

Your Internal Billing Reference **25,29,58 - 529 HWB MKSI - 4)**

To Recipient's Name **Lance Sieve** Phone **970 490-1511**

Company **Paragon Analytics**

Recipient's Address **225 Commerce Dr.**

Address **Ft. Collins** State **CO** ZIP **70504**



8604 4512 4081

3.2

**4a Express Package Service**

- 1  FedEx Priority Overnight  
Next business morning. \* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 5  FedEx Standard Overnight  
Next business afternoon. Saturday Delivery NOT available.
- 6  FedEx First Overnight  
Earliest next business morning delivery to select locations. \* Saturday Delivery NOT available.
- 3  FedEx 2Day  
Second business day. \* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected. FedEx Envelope rate not available. Minimum charge: One-pound rate.
- 20  FedEx Express Saver  
Third business day. \* Saturday Delivery NOT available.

**4b Express Freight Service**

- 7  FedEx 1Day Freight\*  
Next business day. \*\* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 8  FedEx 2Day Freight  
Second business day. \*\* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 83  FedEx 3Day Freight  
Third business day. \*\* Saturday Delivery NOT available.

**5 Packaging**

- 6  FedEx Envelope\*
- 2  FedEx Pak\*  
Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- 3  FedEx Box
- 4  FedEx Tube
- 1  Other  
\* Declared value limit \$500.

**6 Special Handling**

- 31  SATURDAY Delivery  
Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
  - HOLD Weekday at FedEx Location  
Not available for FedEx First Overnight.
  - 31  HOLD Saturday at FedEx Location  
Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.
- Does this shipment contain dangerous goods?  
One box must be checked.
- No
  - 4  Yes  
As per attached Shipper's Declaration.
  - Yes  
Shipper's Declaration not required.
- 6  Dry Ice  
Dry ice, 9 UN 1845
  - Cargo Aircraft Only

**7 Payment Bill to:**

- 1  Sender Acct. No. in Section 1 will be billed.
- 2  Recipient
- 3  Third Party
- 4  Credit Card
- 5  Cash/Check

Total Packages	Total Weight	Total Charges
1	44	

\*Our liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

**8 NEW Residential Delivery Signature Options** If you require a signature, check Direct or Indirect.

- No Signature Required  
Package may be left without obtaining a signature for delivery.
- 10  Direct Signature  
Anyone at recipient's address may sign for delivery. Fee applies.
- 34  Indirect Signature  
If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. Fee applies.

520

Rev. Data 8/05-Part #158281-01994-2005 FedEx-PRINTED IN U.S.A. SRY

# Dissolved ICP Metals

## Method SW6010B

### Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID: MCOI-4-5-29-08-MET

Lab ID: 0805246-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 29-May-08

Date Extracted: 03-Jun-08

Date Analyzed: 04-Jun-08

Prep Method: SW3005 Rev A

Prep Batch: IP080603-1

QC Batch ID: IP080603-1-3

Run ID: IT080604-2A3

Cleanup: NONE

Basis: As Received

File Name: 080604A.

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: mg/l

Clean DF: 1

Analysis ReqCode: 203

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	IDL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	0.13	0.1	0.038		
7440-39-3	BARIUM	1	0.013	0.002	0.000095		
7440-41-7	BERYLLIUM	1	0.00047	0.001	0.00042	B	
7440-70-2	CALCIUM	1	31	0.5	0.0038		
7440-47-3	CHROMIUM	1	0.0091	0.005	0.00057		
7440-48-4	COBALT	1	0.00076	0.002	0.00076	U	
7440-50-8	COPPER	1	0.0053	0.002	0.00059		
7439-89-6	IRON	1	0.014	0.05	0.0029	B	
7439-95-4	MAGNESIUM	1	4.8	0.5	0.0047		
7439-96-5	MANGANESE	1	0.0077	0.002	0.00013		
7440-02-0	NICKEL	1	0.0039	0.005	0.00068	B	
7440-09-7	POTASSIUM	1	0.84	0.5	0.044		
7440-23-5	SODIUM	1	17	0.5	0.0026		
7440-62-2	VANADIUM	1	0.0015	0.005	0.00043	B	
7440-66-6	ZINC	1	0.026	0.005	0.0012		

Data Package ID: IT0805246-1

Date Printed: Friday, June 20, 2008

Paragon Analytics

Page 1 of 1

LIMS Version: 6.162A

# Dissolved ICPMS Metals

## Method SW6020A

### Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID: MCOI-4-5-29-08-MET

Lab ID: 0805246-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 29-May-08

Date Extracted: 03-Jun-08

Date Analyzed: 04-Jun-08

Prep Method: SW3005 Rev A

Prep Batch: IP080603-1

QC Batch ID: IP080603-1-4

Run ID: IM080604-1A3

Cleanup: NONE

Basis: As Received

File Name: 04JUN08A

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: mg/l

Clean DF: 1

Analysis ReqCode: 203

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	IDL	Result Qualifier	EPA Qualifier
7440-36-0	ANTIMONY	10	0.00015	0.0003	0.000049	B	
7440-38-2	ARSENIC	10	0.0011	0.002	0.00022	B	
7440-43-9	CADMIUM	10	0.000055	0.0003	0.000055	U	
7439-92-1	LEAD	10	0.00016	0.0005	0.000026	B	
7782-49-2	SELENIUM	10	0.00043	0.001	0.0004	B	
7440-22-4	SILVER	10	0.000024	0.0001	0.000024	U	
7440-28-0	THALLIUM	10	0.000035	0.0002	0.000011	B	
7440-61-1	URANIUM	10	0.000078	0.0001	0.0000035	B	

Data Package ID: IM0805246-1

Date Printed: Friday, June 20, 2008

Paragon Analytics

Page 1 of 1

LIMS Version: 6.162A

# Dissolved Mercury

Method SW7470A

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID: MCOI-4-5-29-08-MET

Lab ID: 0805246-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 29-May-08

Date Extracted: 04-Jun-08

Date Analyzed: 05-Jun-08

Prep Method: METHOD

Prep Batch: HG080603-6

QCBatchID: HG080603-6-2

Run ID: HG080605-2A5

Cleanup: NONE

Basis: As Received

File Name: 08060500

Sample Aliquot: 20 g

Final Volume: 20 g

Result Units: mg/l

Clean DF: 1

Analysis ReqCode: 203

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	IDL	Result Qualifier	EPA Qualifier
7439-97-6	MERCURY	1	0.000016	0.0001	0.000016	U	

Data Package ID: HG0805246-1

Date Printed: Friday, June 20, 2008

Paragon Analytics

Page 1 of 1

LIMS Version: 6.162A

# ICP Metals

## Method SW6010B

### Method Blank

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: IP080603-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03-Jun-08

Date Analyzed: 04-Jun-08

Prep Batch: IP080603-1

QC Batch ID: IP080603-1-3

Run ID: IT080604-2A3

Cleanup: NONE

Basis: N/A

File Name: 080604A.

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: mg/l

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	IDL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	0.038	0.1	0.038	U	
7440-39-3	BARIUM	1	0.000095	0.002	0.000095	U	
7440-41-7	BERYLLIUM	1	0.00042	0.001	0.00042	U	
7440-70-2	CALCIUM	1	-0.029	0.5	0.0038	B	
7440-47-3	CHROMIUM	1	0.00058	0.005	0.00057	B	
7440-48-4	COBALT	1	0.00076	0.002	0.00076	U	
7440-50-8	COPPER	1	0.00059	0.002	0.00059	U	
7439-89-6	IRON	1	0.0029	0.05	0.0029	U	
7439-95-4	MAGNESIUM	1	-0.0062	0.5	0.0047	B	
7439-96-5	MANGANESE	1	0.00013	0.002	0.00013	U	
7440-02-0	NICKEL	1	0.00068	0.005	0.00068	U	
7440-09-7	POTASSIUM	1	0.17	0.5	0.044	B	
7440-23-5	SODIUM	1	0.14	0.5	0.0026	B	
7440-62-2	VANADIUM	1	0.00043	0.005	0.00043	U	
7440-66-6	ZINC	1	0.0012	0.005	0.0012	U	

Data Package ID: IT0805246-1

# ICP Metals

## Method SW6010B

### Laboratory Control Sample

**Lab Name:** Paragon Analytics

**Work Order Number:** 0805246

**Client Name:** NMED DOE Oversight Bureau

**ClientProject ID:** 05.29.08-569(HWB MCOI-4)

**Lab ID:** IP080603-1LCS

**Sample Matrix:** WATER

**% Moisture:** N/A

**Date Collected:** N/A

**Date Extracted:** 06/03/2008

**Date Analyzed:** 06/04/2008

**Prep Method:** SW3005A

**Prep Batch:** IP080603-1

**QCBatchID:** IP080603-1-3

**Run ID:** IT080604-2A3

**Cleanup:** NONE

**Basis:** N/A

**File Name:** 080604A.

**Sample Aliquot:** 50 g

**Final Volume:** 50 g

**Result Units:** mg/l

**Clean DF:** 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7429-90-5	ALUMINUM	2	2.16	0.1		108	80 - 120%
7440-39-3	BARIUM	2	1.98	0.002		99	80 - 120%
7440-41-7	BERYLLIUM	0.05	0.0515	0.001		103	80 - 120%
7440-70-2	CALCIUM	40	40.5	0.5		101	80 - 120%
7440-47-3	CHROMIUM	0.2	0.205	0.005		103	80 - 120%
7440-48-4	COBALT	0.5	0.489	0.002		98	80 - 120%
7440-50-8	COPPER	0.25	0.26	0.002		104	80 - 120%
7439-89-6	IRON	1	0.972	0.05		97	80 - 120%
7439-95-4	MAGNESIUM	40	40.5	0.5		101	80 - 120%
7439-96-5	MANGANESE	0.5	0.512	0.002		102	80 - 120%
7440-02-0	NICKEL	0.5	0.518	0.005		104	80 - 120%
7440-09-7	POTASSIUM	40	38	0.5		95	80 - 120%
7440-23-5	SODIUM	40	38.1	0.5		95	80 - 120%
7440-62-2	VANADIUM	0.5	0.511	0.005		102	80 - 120%
7440-66-6	ZINC	0.5	0.522	0.005		104	80 - 120%

**Data Package ID:** IT0805246-1

**Date Printed:** Friday, June 20, 2008

*Paragon Analytics*

Page 1 of 1

LIMS Version: 6.162A

# ICP Metals

## Method SW6010B

### Matrix Spike And Matrix Spike Duplicate

**Lab Name:** Paragon Analytics  
**Work Order Number:** 0805246  
**Client Name:** NMED DOE Oversight Bureau  
**ClientProject ID:** 05.29.08-569(HWB MCOI-4)

<b>Field ID:</b> MCOI-4-5-29-08-MET <b>LabID:</b> 0805246-2MS	<b>Sample Matrix:</b> WATER <b>% Moisture:</b> N/A <b>Date Collected:</b> 29-May-08 <b>Date Extracted:</b> 03-Jun-08 <b>Date Analyzed:</b> 04-Jun-08 <b>Prep Method:</b> SW3005 Rev A	<b>Prep Batch:</b> IP080603-1 <b>QCBatchID:</b> IP080603-1-3 <b>Run ID:</b> IT080604-2A3 <b>Cleanup:</b> NONE <b>Basis:</b> As Received	<b>Sample Aliquot:</b> 50 g <b>Final Volume:</b> 50 g <b>Result Units:</b> mg/l <b>File Name:</b> 080604A.
--	--	---	---

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7429-90-5	ALUMINUM	0.13		2.17		0.1	2	102	80 - 120%
7440-39-3	BARIUM	0.013		2		0.002	2	99	80 - 120%
7440-41-7	BERYLLIUM	0.00047	B	0.0512		0.001	0.05	101	80 - 120%
7440-70-2	CALCIUM	31		70.6		0.5	40	100	80 - 120%
7440-47-3	CHROMIUM	0.0091		0.211		0.005	0.2	101	80 - 120%
7440-48-4	COBALT	0.000759	U	0.482		0.002	0.5	96	80 - 120%
7440-50-8	COPPER	0.0053		0.271		0.002	0.25	106	80 - 120%
7439-89-6	IRON	0.014	B	0.957		0.05	1	94	80 - 120%
7439-95-4	MAGNESIUM	4.8		45.4		0.5	40	102	80 - 120%
7439-96-5	MANGANESE	0.0077		0.515		0.002	0.5	102	80 - 120%
7440-02-0	NICKEL	0.0039	B	0.515		0.005	0.5	102	80 - 120%
7440-09-7	POTASSIUM	0.84		40.7		0.5	40	100	80 - 120%
7440-23-5	SODIUM	17		56.8		0.5	40	99	80 - 120%
7440-62-2	VANADIUM	0.0015	B	0.506		0.005	0.5	101	80 - 120%
7440-66-6	ZINC	0.026		0.524		0.005	0.5	100	80 - 120%

**Data Package ID:** IT0805246-1

# ICP Metals

## Method SW6010B

### Matrix Spike And Matrix Spike Duplicate

**Lab Name:** Paragon Analytics  
**Work Order Number:** 0805246  
**Client Name:** NMED DOE Oversight Bureau  
**ClientProject ID:** 05.29.08-569(HWB MCOI-4)

<b>Field ID:</b> MCOI-4-5-29-08-MET <b>LabID:</b> 0805246-2MSD
---

**Sample Matrix:** WATER  
**% Moisture:** N/A  
**Date Collected:** 29-May-08  
**Date Extracted:** 03-Jun-08  
**Date Analyzed:** 04-Jun-08  
**Prep Method:** SW3005 Rev A

**Prep Batch:** IP080603-1  
**QCBatchID:** IP080603-1-3  
**Run ID:** IT080604-2A3  
**Cleanup:** NONE  
**Basis:** As Received

**Sample Aliquot:** 50 g  
**Final Volume:** 50 g  
**Result Units:** mg/l  
**File Name:** 080604A.

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7429-90-5	ALUMINUM	2.16		2	102	0.1	20	0
7440-39-3	BARIUM	1.99		2	99	0.002	20	1
7440-41-7	BERYLLIUM	0.051		0.05	101	0.001	20	0
7440-70-2	CALCIUM	70.8		40	100	0.5	20	0
7440-47-3	CHROMIUM	0.211		0.2	101	0.005	20	0
7440-48-4	COBALT	0.482		0.5	96	0.002	20	0
7440-50-8	COPPER	0.27		0.25	106	0.002	20	1
7439-89-6	IRON	0.995		1	98	0.05	20	4
7439-95-4	MAGNESIUM	45.4		40	101	0.5	20	0
7439-96-5	MANGANESE	0.515		0.5	102	0.002	20	0
7440-02-0	NICKEL	0.515		0.5	102	0.005	20	0
7440-09-7	POTASSIUM	40.5		40	99	0.5	20	0
7440-23-5	SODIUM	56.6		40	98	0.5	20	0
7440-62-2	VANADIUM	0.506		0.5	101	0.005	20	0
7440-66-6	ZINC	0.525		0.5	100	0.005	20	0

**Data Package ID:** IT0805246-1

# ICPMS Metals

Method SW6020A

Method Blank

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: IP080603-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03-Jun-08

Date Analyzed: 04-Jun-08

Prep Batch: IP080603-1

QCBatchID: IP080603-1-4

Run ID: IM080604-1A3

Cleanup: NONE

Basis: N/A

File Name: 04JUN08A

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: mg/l

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	IDL	Result Qualifier	EPA Qualifier
7440-36-0	ANTIMONY	10	0.000049	0.0003	0.000049	U	
7440-38-2	ARSENIC	10	0.00023	0.002	0.00022	B	
7440-43-9	CADMIUM	10	0.000055	0.0003	0.000055	U	
7439-92-1	LEAD	10	0.00024	0.0005	0.000026	B	
7782-49-2	SELENIUM	10	0.00042	0.001	0.0004	B	
7440-22-4	SILVER	10	0.000024	0.0001	0.000024	U	
7440-28-0	THALLIUM	10	0.000013	0.0002	0.000011	B	
7440-61-1	URANIUM	10	0.000011	0.0001	0.0000035	B	

Data Package ID: IM0805246-1

Date Printed: Friday, June 20, 2008

Paragon Analytics

Page 1 of 1

LIMS Version: 6.162A

# ICPMS Metals

## Method SW6020A

### Laboratory Control Sample

**Lab Name:** Paragon Analytics

**Work Order Number:** 0805246

**Client Name:** NMED DOE Oversight Bureau

**ClientProject ID:** 05.29.08-569(HWB MCOI-4)

**Lab ID:** IM080603-1LCS

**Sample Matrix:** WATER

**% Moisture:** N/A

**Date Collected:** N/A

**Date Extracted:** 06/03/2008

**Date Analyzed:** 06/04/2008

**Prep Method:** SW3005A

**Prep Batch:** IP080603-1

**QC Batch ID:** IP080603-1-4

**Run ID:** IM080604-1A3

**Cleanup:** NONE

**Basis:** N/A

**File Name:** 04JUN08A

**Sample Aliquot:** 50 g

**Final Volume:** 50 g

**Result Units:** mg/l

**Clean DF:** 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-36-0	ANTIMONY	0.02	0.0202	0.0003		101	80 - 120%
7440-38-2	ARSENIC	0.04	0.0396	0.002		99	80 - 120%
7440-43-9	CADMIUM	0.02	0.0202	0.0003		101	80 - 120%
7439-92-1	LEAD	0.1	0.101	0.0005		101	80 - 120%
7782-49-2	SELENIUM	0.04	0.0381	0.001		95	80 - 120%
7440-22-4	SILVER	0.02	0.0207	0.0001		104	80 - 120%
7440-28-0	THALLIUM	0.001	0.000957	0.0002		96	80 - 120%
7440-61-1	URANIUM	0.02	0.0205	0.0001		102	80 - 120%

**Data Package ID:** IM0805246-1

**Date Printed:** Friday, June 20, 2008

*Paragon Analytics*

Page 1 of 1

LIMS Version: 6.162A

# ICPMS Metals

## Method SW6020A

### Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID: MCOI-4-5-29-08-MET

LabID: 0805246-2MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 29-May-08

Date Extracted: 03-Jun-08

Date Analyzed: 04-Jun-08

Prep Method: SW3005 Rev A

Prep Batch: IP080603-1

QCBatchID: IP080603-1-4

Run ID: IM080604-1A3

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: mg/l

File Name: 04JUN08A

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-36-0	ANTIMONY	0.00015	B	0.02		0.0003	0.02	99	75 - 125%
7440-38-2	ARSENIC	0.0011	B	0.0397		0.002	0.04	97	75 - 125%
7440-43-9	CADMIUM	5.53E-06	U	0.02		0.0003	0.02	100	75 - 125%
7439-92-1	LEAD	0.00016	B	0.102		0.0005	0.1	102	75 - 125%
7782-49-2	SELENIUM	0.00043	B	0.0381		0.001	0.04	94	75 - 125%
7440-22-4	SILVER	2.41E-06	U	0.0205		0.0001	0.02	102	75 - 125%
7440-28-0	THALLIUM	0.000035	B	0.000985		0.0002	0.001	95	75 - 125%
7440-61-1	URANIUM	0.000078	B	0.0209		0.0001	0.02	104	75 - 125%

Field ID: MCOI-4-5-29-08-MET

LabID: 0805246-2MSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 29-May-08

Date Extracted: 03-Jun-08

Date Analyzed: 04-Jun-08

Prep Method: SW3005 Rev A

Prep Batch: IP080603-1

QCBatchID: IP080603-1-4

Run ID: IM080604-1A3

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: mg/l

File Name: 04JUN08A

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-36-0	ANTIMONY	0.02		0.02	99	0.0003	20	0
7440-38-2	ARSENIC	0.0412		0.04	100	0.002	20	4
7440-43-9	CADMIUM	0.02		0.02	100	0.0003	20	0
7439-92-1	LEAD	0.102		0.1	102	0.0005	20	0
7782-49-2	SELENIUM	0.0393		0.04	97	0.001	20	3
7440-22-4	SILVER	0.0205		0.02	103	0.0001	20	0
7440-28-0	THALLIUM	0.00103		0.001	99	0.0002	20	4
7440-61-1	URANIUM	0.0206		0.02	103	0.0001	20	1

Data Package ID: IM0805246-1

# Mercury

## Method SW7470A

### Method Blank

**Lab Name:** Paragon Analytics

**Work Order Number:** 0805246

**Client Name:** NMED DOE Oversight Bureau

**ClientProject ID:** 05.29.08-569(HWB MCOI-4)

**Lab ID:** HG080603-6MB

**Sample Matrix:** WATER  
**% Moisture:** N/A  
**Date Collected:** N/A  
**Date Extracted:** 04-Jun-08  
**Date Analyzed:** 05-Jun-08

**Prep Batch:** HG080603-6  
**QCBatchID:** HG080603-6-2  
**Run ID:** HG080605-2A5  
**Cleanup:** NONE  
**Basis:** N/A  
**File Name:** 08060500

**Sample Aliquot:** 20 g  
**Final Volume:** 20 g  
**Result Units:** mg/l  
**Clean DF:** 1

CASNO	Target Analyte	DF	Result	Reporting Limit	IDL	Result Qualifier	EPA Qualifier
7439-97-6	MERCURY	1	0.000016	0.0001	0.000016	U	

**Data Package ID:** HG0805246-1

# Mercury

## Method SW7470A

### Laboratory Control Sample

**Lab Name:** Paragon Analytics

**Work Order Number:** 0805246

**Client Name:** NMED DOE Oversight Bureau

**ClientProject ID:** 05.29.08-569(HWB MCOI-4)

**Lab ID:** HG080603-6LCS

**Sample Matrix:** WATER

**% Moisture:** N/A

**Date Collected:** N/A

**Date Extracted:** 06/04/2008

**Date Analyzed:** 06/05/2008

**Prep Method:** METHOD

**Prep Batch:** HG080603-6

**QCBatchID:** HG080603-6-2

**Run ID:** HG080605-2A5

**Cleanup:** NONE

**Basis:** N/A

**File Name:** 08060500

**Sample Aliquot:** 20 g

**Final Volume:** 20 g

**Result Units:** mg/l

**Clean DF:** 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7439-97-6	MERCURY	0.001	0.00103	0.0001		103	80 - 120%

**Data Package ID:** *HG0805246-1*



# Paragon Analytics

## Radiochemistry Case Narrative

### Isotopic Americium

---

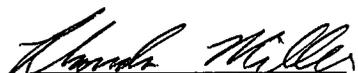
#### NMED DOE Oversight Bureau

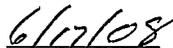
05.29.08-569(HWB MCOI-4)

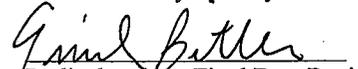
PA WO 0805246

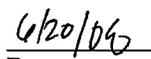
1. This report consists of the analytical results for one water sample received by Paragon on 05/31/08.
2. This sample was prepared according to procedures PA SOP776R11, PA SOP778R12, and PA SOP751R2. Due to low client detection limits, an increased aliquot of 1690 ml was prepared for this sample.
3. The sample was analyzed for the presence of  $^{241}\text{Am}$  according to procedure PA SOP714R11. The analyses were completed on 06/06/08.
4. The analysis results for this sample are reported in units of pCi/L. The water sample was not filtered prior to analysis.
5. Due to insufficient sample volume, a laboratory control sample duplicate (LCSD) was prepared in lieu of a prep batch duplicate.
6. No anomalous situations were encountered during the preparation or analysis of this sample. 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, Paragon Analytics certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

  
Rhonda Miller  
Radiochemistry Primary Reviewer

  
Date

  
Gerald Butler  
Radiochemistry Final Data Review

  
Date

Paragon Analytics

A Division of DataChem Laboratories, Inc.

# Paragon Analytics

## Sample Number(s) Cross-Reference Table

---

**Paragon OrderNum:** 0805246

**Client Name:** NMED DOE Oversight Bureau

**Client Project Name:**

**Client Project Number:** 05.29.08-569(HWB MCOI-4)

**Client PO Number:** 06-667-55-01754

---

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
MCOI-4-5-29-08-CIO4	0805246-1		WATER	29-May-08	16:06
MCOI-4-5-29-08-MET	0805246-2		WATER	29-May-08	16:06
MCOI-4-5-29-08-VOC	0805246-3		WATER	29-May-08	16:06
MCOI-4-5-29-08-SVOC	0805246-4		WATER	29-May-08	16:06
MCOI-4-5-29-08-RAD	0805246-5		WATER	29-May-08	16:06



CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: NMED  
Project Manager: LS

Workorder No: 0805246  
Initials: CT Date: 5-31-08

1. Does this project require any <b>special handling</b> in addition to standard Paragon procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on <b>shipping containers</b> intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on <b>sample containers</b> intact?	NONE	<input checked="" type="radio"/> YES	NO
4. Is there a <b>COC (Chain-of-Custody)</b> present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the <b>COC and bottle labels</b> complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the <b>COC in agreement</b> with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were <b>airbills / shipping documents</b> present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous <b>samples requiring preservation</b> preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous <b>non-preserved samples</b> pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there <b>sufficient sample</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the <b>proper containers</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within <b>holding times</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received <b>intact?</b> (not broken or leaking, etc.)		YES	<input checked="" type="radio"/> NO
14. Are all samples requiring no headspace (VOC, GRO, Rx CN/S, radon), headspace free? Size of bubble: ___ < green pea ___ > green pea	<sup>at 531-01</sup> <input checked="" type="radio"/> N/A	<input checked="" type="radio"/> YES	NO
15. Were samples checked for and free from the presence of <b>residual chlorine?</b> (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	<input checked="" type="radio"/> N/A	YES	NO
16. Were the samples <b>shipped on ice?</b>		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #2 <input checked="" type="radio"/> #4	RAD ONLY	<input checked="" type="radio"/> YES NO
Cooler #: <u>9-531-01</u> 1			
Temperature (°C): <u>3.2</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>18</u>			
Background µR/hr reading: <u>13</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no. see Form 008.)			

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

The lids on the 1 Liter Amber bottles were received broken, it didn't appear that anything leaked. The lids were replaced with new ones.

*Noted for*

If applicable, was the client contacted?  YES / NO / NA Contact: K. Grant Date/Time: \_\_\_\_\_

Project Manager Signature / Date: [Signature] 6/2/08

\*IR Gun #2: Oakton, SN 29922500201-0066

\*IR Gun #4: Oakton, SN 2372220101-0002

8604 4512 4081

0200

Form ID No.

080246

From **8-30** Sender's FedEx Account Number

Sender's Name **Michael Dale** Phone **505 672-0440**

Company **DAVID DOE JR**

Address **194 State Road 4 Suite A**

City **Albuquerque** State **NM** ZIP **87544**

Your Internal Billing Reference **25,29,58 - 529 HWB MKSI - 4)**

To Recipient's Name **Lance Stieve** Phone **970 490-1511**

Company **Paragon Analytics**

Recipient's Address **225 Commerce Dr.**

To request a package be held at a specific FedEx location, print FedEx address here.

City **FT. Collins** State **CO** ZIP **70504**



8604 4512 4081

3.2

**4a Express Package Service**

- 1** FedEx Priority Overnight  
Next business morning. \* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 3** FedEx 2Day  
Second business day. \*\* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 5** FedEx Standard Overnight  
Next business afternoon. \* Saturday Delivery NOT available.
- 20** FedEx Express Saver  
Third business day. \* Saturday Delivery NOT available.
- 6** FedEx First Overnight  
Earliest next business morning delivery to select locations. \* Saturday Delivery NOT available.

**4b Express Freight Service**

- 7** FedEx 1Day Freight\*  
Next business day. \*\* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 8** FedEx 2Day Freight  
Second business day. \*\* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 83** FedEx 3Day Freight  
Third business day. \*\* Saturday Delivery NOT available.

**5 Packaging**

- 6** FedEx Envelope\*
- 2** FedEx Pak\*  
Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- 3** FedEx Box
- 4** FedEx Tube
- 1** Other

**6 Special Handling**

- 31** SATURDAY Delivery  
Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- HOLD Weekday at FedEx Location**  
Not available for FedEx First Overnight.
- 31** HOLD Saturday at FedEx Location  
Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.
- 1** Does this shipment contain dangerous goods?  
One box must be checked.  
 No  Yes  Yes  
As per attached Shipper's Declaration  Yes  
Shipper's Declaration not required.
- 6** Dry Ice  
Dry ice, 9 UN 1845  Cargo Aircraft Only

**7 Payment Bill to:**

- 1** Sender Acct. No. in Section 1 will be billed.
- 2** Recipient
- 3** Third Party
- 4** Credit Card
- 5** Cash/Check

Total Packages	Total Weight	Total Charges
1	44	
		Credit Card Auth:

\*Our liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

**8 NEW Residential Delivery Signature Options** If you require a signature, check Direct or Indirect.

- No Signature Required**  
Package may be left without obtaining a signature for delivery.
- 10** Direct Signature  
Anyone at recipient's address may sign for delivery. **Fee applies.**
- 34** Indirect Signature  
If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. **Fee applies.**

**520**

Rev. Data 8/05-Part #158281-01994-2005 FedEx-PRINTED IN U.S.A. SRY

# Isotopic Americium By Alpha Spectroscopy

PAI 714 Rev 11

## Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: AS080603-7MB

Sample Matrix: WATER  
Prep SOP: PAI 778 Rev 12  
Date Collected: 03-Jun-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-7  
QCBatchID: AS080603-7-1  
Run ID: AS080603-7B  
Count Time: 1000 minutes

Final Aliquot: 1690 ml  
Result Units: pCi/l  
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	Lab Qualifier
14596-10-2	Am-241	0.0069 +/- 0.0074	0.010	0.05	U

### Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Am-243	1.332	0.827	pCi/l	62.1	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 (see PAI SOP 743)  
MDC - Minimum Detectable Concentration (see PAI SOP 709)  
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.

Data Package ID: AM0805246-1

# Isotopic Americium By Alpha Spectroscopy

PAI 714 Rev 11

## Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: AS080603-7LCS

Sample Matrix: WATER  
Prep SOP: PAI 778 Rev 12  
Date Collected: 03-Jun-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-7  
QCBatchID: AS080603-7-1  
Run ID: AS080603-7B  
Count Time: 1000 minutes

Final Aliquot: 1690 ml  
Result Units: pCi/l  
File Name: Spectrum #1

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
14596-10-2	Am-241	1.41 +/- 0.238	0.00917	1.32	107	79 - 118	P

## Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Am-243	1.332	0.901	pCi/l	67.6	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 (see PAI SOP 743)  
MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: AM0805246-1

# Isotopic Americium By Alpha Spectroscopy

PAI 714 Rev 11

## Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: AS080603-7LCSD

Sample Matrix: WATER  
Prep SOP: PAI 778 Rev 12  
Date Collected: 03-Jun-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-7  
QCBatchID: AS080603-7-1  
Run ID: AS080603-7B  
Count Time: 1000 minutes

Final Aliquot: 1690 ml  
Result Units: pCi/l  
File Name: Spectrum #1

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
14596-10-2	Am-241	1.30 +/- 0.223	0.00958	1.32	98.5	79 - 118	P

### Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Am-243	1.332	0.960	pCi/l	72.1	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 (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: AM0805246-1

# Isotopic Americium By Alpha Spectroscopy

PAI 714 Rev 11

## Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	
Lab ID:	AS080603-7LCSD

Sample Matrix: WATER  
Prep SOP: PAI 778 Rev 12  
Date Collected: 03-Jun-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-7  
QCBatchID: AS080603-7-1  
Run ID: AS080603-7B  
Count Time: 1000 minutes

Final Aliquot: 1690 ml  
Prep Basis: Unfiltered  
Moisture(%): NA  
Result Units: pCi/l  
File Name: Spectrum #1

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
14596-10-2	Am-241	1.4 +/- 0.24	1.3 +/- 0.22	0.33	2.13	P

### 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 (see PAI SOP 743)
- DER - Duplicate Error Ratio (see PAI SOP 715)
- BDL - Below Detection Limit
- NR - Not Reported

Data Package ID: AM0805246-1

# Isotopic Americium By Alpha Spectroscopy

PAI 714 Rev 11

## Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	MCOI-4-5-29-08-RAD
Lab ID:	0805246-5

Sample Matrix: WATER  
Prep SOP: PAI 778 Rev 12  
Date Collected: 29-May-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-7  
QCBatchID: AS080603-7-1  
Run ID: AS080603-7B  
Count Time: 1000 minutes  
Report Basis: Unfiltered

Final Aliquot: 1690 ml  
Prep Basis: Unfiltered  
Moisture(%): NA  
Result Units: pCi/l  
File Name: Spectrum #1

Analysis ReqCode: 309

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	Lab Qualifier
14596-10-2	Am-241	0.0026 +/- 0.0065	0.0036	0.05	U

### Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Am-243	1.332	0.868	pCi/l	65.2	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 (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: AM0805246-1



# Paragon Analytics

## Radiochemistry Case Narrative

### Isotopic Plutonium

---

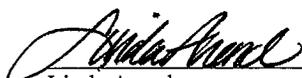
#### NMED DOE Oversight Bureau

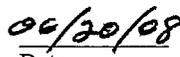
05.29.08-569(HWB MCOI-4)

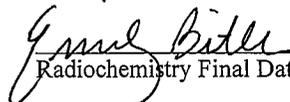
PA WO 0805246

1. This report consists of the analytical results for one water sample received by Paragon on 05/31/08.
2. This sample was prepared according to procedures PA SOP776R11, PA SOP777R9, and PA SOP778R12. Modifications were made to the method as described on QASS 357739. Due to low client detection limits, this sample was prepared at an increased aliquot of 1690ml.
3. The sample was analyzed for the presence of isotopic plutonium according to procedure PA SOP714R11. The analysis was completed on 06/06/08.
4. The analysis results for this sample are reported in units of pCi/L. The water sample was not filtered prior to analysis.
5. Pu-240 is indistinguishable from Pu-239. In this report, any plutonium in this region of interest will be reported as Pu-239/240.
6. Due to insufficient sample volume, a laboratory control sample duplicate (LCSD) was prepared in lieu of a prep batch duplicate.
7. No further anomalous situations were encountered during the preparation or analysis of this sample. All remaining quality control criteria were met.

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

  
Linda Arend  
Radiochemistry Primary Reviewer

  
Date

  
Gerald Butler  
Radiochemistry Final Data Review

  
Date

Paragon Analytics

A Division of DataChem Laboratories, Inc.

# Paragon Analytics

## Sample Number(s) Cross-Reference Table

---

**Paragon OrderNum:** 0805246

**Client Name:** NMED DOE Oversight Bureau

**Client Project Name:**

**Client Project Number:** 05.29.08-569(HWB MCOI-4)

**Client PO Number:** 06-667-55-01754

---

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
MCOI-4-5-29-08-CIO4	0805246-1		WATER	29-May-08	16:06
MCOI-4-5-29-08-MET	0805246-2		WATER	29-May-08	16:06
MCOI-4-5-29-08-VOC	0805246-3		WATER	29-May-08	16:06
MCOI-4-5-29-08-SVOC	0805246-4		WATER	29-May-08	16:06
MCOI-4-5-29-08-RAD	0805246-5		WATER	29-May-08	16:06



CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: NMED

Workorder No: 0805246

Project Manager: LS

Initials: CT Date: 5-31-08

1. Does this project require any <b>special handling</b> in addition to standard Paragon procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on <b>shipping containers</b> intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on <b>sample containers</b> intact?	NONE	<input checked="" type="radio"/> YES	NO
4. Is there a <b>COC (Chain-of-Custody)</b> present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the <b>COC and bottle labels</b> complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the <b>COC in agreement</b> with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were <b>airbills / shipping documents</b> present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous <b>samples requiring preservation</b> preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous <b>non-preserved samples</b> pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there <b>sufficient sample</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the <b>proper containers</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within <b>holding times</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received <b>intact?</b> (not broken or leaking, etc.)		YES	<input checked="" type="radio"/> NO
14. Are all samples requiring no headspace (VOC, GRO, Rx CN/S, radon), headspace free? Size of bubble: ___ < green pea ___ > green pea	<sup>at 531-01</sup> <input checked="" type="radio"/> N/A	<input checked="" type="radio"/> YES	NO
15. Were samples checked for and free from the presence of <b>residual chlorine?</b> (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	<input checked="" type="radio"/> N/A	YES	NO
16. Were the samples <b>shipped on ice?</b>		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #2 <input checked="" type="radio"/> #4	RAD ONLY	<input checked="" type="radio"/> YES NO
Cooler #: <u>9.531-01</u> <u>1</u>			
Temperature (°C): <u>3.2</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>18</u>			
Background µR/hr reading: <u>13</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no. see Form 008.)			

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

The lids on the 1 Liter Amber bottles were received broken, it didn't appear that anything leaked. The lids were replaced with new ones.

*Noted for*

If applicable, was the client contacted?  YES / NO / NA Contact: K. Grant Date/Time: \_\_\_\_\_

Project Manager Signature / Date: [Signature] 6/2/08

\*IR Gun #2: Oakton, SN 29922500201-0066 \*IR Gun #4: Oakton, SN 2372220101-0002

8604 4512 4081

0200

Form ID No.

FedEx Retrieval Copy

080246

From **8-30** Sender's FedEx Account Number

Sender's Name **Michael Dale** Phone **505 672-0440**

Company **DAVID DOE JR**

Address **194 State Road 4 Suite A**

City **Albuquerque** State **NM** ZIP **87544**

Your Internal Billing Reference **25,29.58 - 529 HWB MKSI - 4)**

To Recipient's Name **Lance Steele** Phone **970 490-1511**

Company **Paragon Analytics**

Recipient's Address **225 Commerce Dr.**

To request a package be held at a specific FedEx location, print FedEx address here.

City **FT. Collins** State **CO** ZIP **70504**



8604 4512 4081

3.2

**4a Express Package Service**

- 1  **FedEx Priority Overnight**  
Next business morning. \* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 5  **FedEx Standard Overnight**  
Next business afternoon. \* Saturday Delivery NOT available.
- 6  **FedEx First Overnight**  
Earliest next business morning delivery to select locations. \* Saturday Delivery NOT available.
- 3  **FedEx 2Day**  
Second business day. \* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 20  **FedEx Express Saver**  
Third business day. \* Saturday Delivery NOT available.

**4b Express Freight Service**

- 7  **FedEx 1Day Freight\***  
Next business day. \*\* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 8  **FedEx 2Day Freight**  
Second business day. \*\* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 83  **FedEx 3Day Freight**  
Third business day. \*\* Saturday Delivery NOT available.

**5 Packaging**

- 6  **FedEx Envelope\***
- 2  **FedEx Pak\***  
Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- 3  **FedEx Box**
- 4  **FedEx Tube**
- 1  **Other**

**6 Special Handling**

- 31  **SATURDAY Delivery**  
Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
  - HOLD Weekday at FedEx Location**  
Not available for FedEx First Overnight.
  - 31  **HOLD Saturday at FedEx Location**  
Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.
- Does this shipment contain dangerous goods?  
 One box must be checked.  
 No 4  Yes  
As per attached Shipper's Declaration  
 Yes  No  
Shippers Declaration not required
- 6  **Dry Ice**  
Dry ice, 9 UN 1845
  - Cargo Aircraft Only**

**7 Payment Bill to:**

- 1  **Sender**  
Acct. No. in Section 1 will be billed.
- 2  **Recipient**
- 3  **Third Party**
- 4  **Credit Card**
- 5  **Cash/Check**

Total Packages	Total Weight	Total Charges
1	44	
		Credit Card Auth:

\*Our liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

**8 NEW Residential Delivery Signature Options** If you require a signature, check Direct or Indirect.

- No Signature Required**  
Package may be left without obtaining a signature for delivery.
- 10  **Direct Signature**  
Anyone at recipient's address may sign for delivery. **Fee applies.**
- 34  **Indirect Signature**  
If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. **Fee applies.**

520

Rev. Data 8/05-Part #158281-01994-2005 FedEx-PRINTED IN U.S.A. SRY

QUALITY ASSURANCE SUMMARY SHEET

PAR W.O. # / BATCH GENERIC  
TEST Pu  
METHOD PREP  
SOP/REV (PREP) 778/12  
SOP/REV (ANAL) \_\_\_\_\_

Briefly document any QA or other problems or deviations associated with the analysis of samples. Problems could result from: log-in, color, odor, dilution, consistency, scheduling, equipment, or instrumentation, or may include documentation of minor deviations necessary due to unique DQO's or sample characteristics.

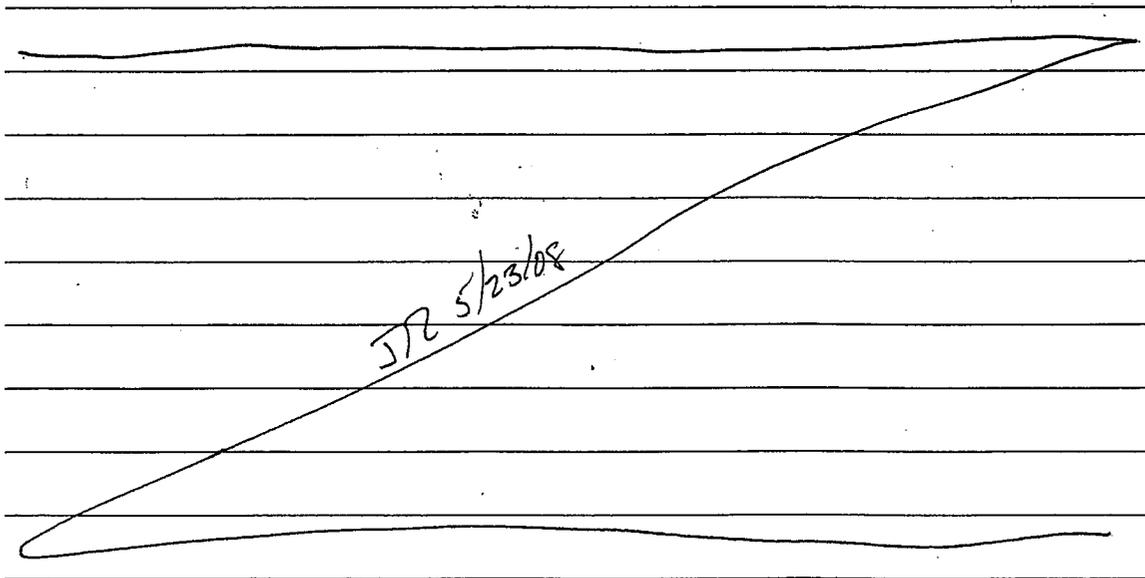
*JR 5/23/08*

SOP 778/12 step 8.1.9 states that, when analyzing for Pu, 4 extra 9N HCl rinses must be performed to remove any residual Th interferent from the chloride column. After running a trial by collecting the extra 4 9N HCl rinses into a clean cup and analyzing for Th isotopes, it was determined that little to no detectable Th was present. Following a chloride column, a nitrate column is performed to also remove any remaining Th interferent. Therefore, it has been determined that the 4 extra 9N HCl rinses are unnecessary and will be excluded from the chloride column procedure.

*JR 5/23/08*

*JR 5/23/08*

*JR 5/23/08*



TECHNICIAN/ANALYST *[Signature]*

DATE 5/23/08

DEPARTMENT MANAGER *[Signature]*

DATE 5/23/08

REVISION: 357739

FORM 302r6.doc (4/22/04)

# Isotopic Plutonium By Alpha Spectroscopy

PAI 714 Rev 11

## Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: AS080603-7MB	Sample Matrix: WATER	Prep Batch: AS080603-7	Final Aliquot: 1690 ml
	Prep SOP: PAI 778 Rev 12	QCBatchID: AS080603-7-1	Result Units: pCi/l
	Date Collected: 03-Jun-08	Run ID: AS080603-7A	File Name: Spectrum #1
	Date Prepared: 03-Jun-08	Count Time: 1000 minutes	
	Date Analyzed: 06-Jun-08		

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	Lab Qualifier
13981-16-3	Pu-238	-0.0011 +/- 0.0053	0.010	0.03	U
10-12-8	Pu-239/240	0.0011 +/- 0.0053	0.010	0.03	U

## Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Pu-242	1.332	1.10	pCi/l	82.4	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 (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- 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.

Data Package ID: PU0805246-1

# Isotopic Plutonium By Alpha Spectroscopy

PAI 714 Rev 11

## Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: AS080603-7LCS

Sample Matrix: WATER  
Prep SOP: PAI 778 Rev 12  
Date Collected: 03-Jun-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-7  
QCBatchID: AS080603-7-1  
Run ID: AS080603-7A  
Count Time: 1000 minutes

Final Aliquot: 1690 ml  
Result Units: pCi/l  
File Name: Spectrum #1

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
10-12-8	Pu-239/240	1.43 +/- 0.240	0.00877	1.39	103	82 - 118	P

### Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Pu-242	1.332	1.02	pCi/l	76.6	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 (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: PU0805246-1

# Isotopic Plutonium By Alpha Spectroscopy

PAI 714 Rev 11

## Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: AS080603-7LCSD

Sample Matrix: WATER  
Prep SOP: PAI 778 Rev 12  
Date Collected: 03-Jun-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-7  
QCBatchID: AS080603-7-1  
Run ID: AS080603-7A  
Count Time: 1000 minutes

Final Aliquot: 1690 ml  
Result Units: pCi/l  
File Name: Spectrum #1

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
10-12-8	Pu-239/240	1.42 +/- 0.238	0.0148	1.39	102	82 - 118	P

### Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Pu-242	1.332	1.00	pCi/l	75.2	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 (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: PU0805246-1

# Isotopic Plutonium By Alpha Spectroscopy

PAI 714 Rev 11

## Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	
Lab ID:	AS080603-7LCSD

Sample Matrix: WATER  
Prep SOP: PAI 778 Rev 12  
Date Collected: 03-Jun-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-7  
QCBatchID: AS080603-7-1  
Run ID: AS080603-7A  
Count Time: 1000 minutes

Final Aliquot: 1690 ml  
Prep Basis: Unfiltered  
Moisture(%): NA  
Result Units: pCi/l  
File Name: Spectrum #1

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
10-12-8	Pu-239/240	1.4 +/- 0.24	1.4 +/- 0.24	0.02	2.13	P

### 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 (see PAI SOP 743)
- DER - Duplicate Error Ratio (see PAI SOP 715)
- BDL - Below Detection Limit
- NR - Not Reported

Data Package ID: PU0805246-1

# Isotopic Plutonium By Alpha Spectroscopy

PAI 714 Rev 11

## Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	MCOI-4-5-29-08-RAD
Lab ID:	0805246-5

Sample Matrix: WATER  
Prep SOP: PAI 778 Rev 12  
Date Collected: 29-May-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-7  
QCBatchID: AS080603-7-1  
Run ID: AS080603-7A  
Count Time: 1000 minutes  
Report Basis: Unfiltered

Final Aliquot: 1690 ml  
Prep Basis: Unfiltered  
Moisture(%): NA  
Result Units: pCi/l  
File Name: Spectrum #1

Analysis ReqCode: 309

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	Lab Qualifier
13981-16-3	Pu-238	0 +/- 0.0061	0.0091	0.03	U
10-12-8	Pu-239/240	0.0025 +/- 0.0061	0.0033	0.03	U

## Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Pu-242	1.332	0.975	pCi/l	73.2	30 - 110 %	

## Comments:

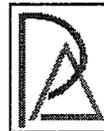
### Qualifiers/Flags:

- 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 (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: PU0805246-1



# Paragon Analytics

## Radiochemistry Case Narrative

### Isotopic Curium

---

#### NMED DOE Oversight Bureau

05.29.08-569(HWB MCOI-4)

PA WO 0805246

1. This report consists of the analytical results for one water sample received by Paragon on 05/31/08.
2. This sample was prepared according to procedures PA SOP776R11, PA SOP751R2, and PA SOP778R12. Due to low client detection limits, this sample was prepared at an increased aliquot of 1690ml.
3. The sample was analyzed for the presence of isotopic curium according to procedure PA SOP714R11. The analysis was completed on 06/06/08.
4. The analysis results for this sample are reported in units of pCi/L. The water sample was not filtered prior to analysis.
5. Due to insufficient sample volume, a laboratory control sample duplicate (LCSD) was prepared in lieu of a prep batch duplicate.
6. No further anomalous situations were encountered during the preparation or analysis of this sample. 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, Paragon Analytics certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Linda Arend  
Radiochemistry Primary Reviewer

06/17/08  
Date

Gerald Bitler  
Radiochemistry Final Data Review

6/20/08  
Date

# Paragon Analytics

## Sample Number(s) Cross-Reference Table

---

**Paragon OrderNum:** 0805246

**Client Name:** NMED DOE Oversight Bureau

**Client Project Name:**

**Client Project Number:** 05.29.08-569(HWB MCOI-4)

**Client PO Number:** 06-667-55-01754

---

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
MCOI-4-5-29-08-CIO4	0805246-1		WATER	29-May-08	16:06
MCOI-4-5-29-08-MET	0805246-2		WATER	29-May-08	16:06
MCOI-4-5-29-08-VOC	0805246-3		WATER	29-May-08	16:06
MCOI-4-5-29-08-SVOC	0805246-4		WATER	29-May-08	16:06
MCOI-4-5-29-08-RAD	0805246-5		WATER	29-May-08	16:06



CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: NMED  
Project Manager: LS

Workorder No: 0805246  
Initials: CT Date: 5-31-08

1. Does this project require any <b>special handling</b> in addition to standard Paragon procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on <b>shipping containers</b> intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on <b>sample containers</b> intact?	NONE	<input checked="" type="radio"/> YES	NO
4. Is there a <b>COC (Chain-of-Custody)</b> present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the <b>COC and bottle labels</b> complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the <b>COC in agreement</b> with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were <b>airbills / shipping documents</b> present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous <b>samples requiring preservation</b> preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous <b>non-preserved samples</b> pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there <b>sufficient sample</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the <b>proper containers</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within <b>holding times</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received <b>intact?</b> (not broken or leaking, etc.)		YES	<input checked="" type="radio"/> NO
14. Are all samples requiring no headspace (VOC, GRO, Rx CN/S, radon), headspace free? Size of bubble: _____ < green pea _____ > green pea	<sup>at 531-01</sup> <input checked="" type="radio"/> N/A	<input checked="" type="radio"/> YES	NO
15. Were samples checked for and free from the presence of <b>residual chlorine?</b> (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	<input checked="" type="radio"/> N/A	YES	NO
16. Were the samples <b>shipped on ice?</b>		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #2 <input checked="" type="radio"/> #4	RAD ONLY	<input checked="" type="radio"/> YES NO
Cooler #: <u>531-01</u>			
Temperature (°C): <u>3.2</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>18</u>			
Background µR/hr reading: <u>13</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no. see Form 008.)			

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

The lids on the 1 Liter Amber bottles were received broken, it didn't appear that anything leaked. The lids were replaced with new ones.

*Noted for*

If applicable, was the client contacted?  YES / NO / NA Contact: K. Grant Date/Time: \_\_\_\_\_

Project Manager Signature / Date: [Signature] 6/2/08

\*IR Gun #2: Oakton, SN 29922500201-0066

\*IR Gun #4: Oakton, SN 2372220101-0002

8604 4512 4081

0200

Form ID No.

U802246

From **8-30** Sender's FedEx Account Number

Sender's Name **Michael Dale** Phone **505 672-0440**

Company **DAVID DOE JR**

Address **194 State Road 4 Suite A**

City **Albuquerque** State **NM** ZIP **87544**

Your Internal Billing Reference **25,29,58 - 529 / HWB MKSI - 4)**

To Recipient's Name **Lance Stieve** Phone **970 490-1511**

Company **Paragon Analytics**

Recipient's Address **225 Commerce Dr.**

Address **Ft. Collins** State **CO** ZIP **70504**



8604 4512 4081

3.2

**4a Express Package Service**

- 1  **FedEx Priority Overnight** Next business morning. \* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 5  **FedEx Standard Overnight** Next business afternoon. \* Saturday Delivery NOT available.
- 6  **FedEx First Overnight** Earliest next business morning delivery to select locations. \* Saturday Delivery NOT available.
- 3  **FedEx 2Day** Second business day. \* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected. FedEx Envelope rate not available. Minimum charge: One-pound rate.
- 20  **FedEx Express Saver** Third business day. \* Saturday Delivery NOT available.

**4b Express Freight Service**

- 7  **FedEx 1Day Freight\*** Next business day. \*\* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 8  **FedEx 2Day Freight** Second business day. \*\* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 83  **FedEx 3Day Freight** Third business day. \*\* Saturday Delivery NOT available.

**5 Packaging**

- 6  **FedEx Envelope\***
- 2  **FedEx Pak\*** Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- 3  **FedEx Box**
- 4  **FedEx Tube**
- 1  **Other** \* Declared value limit \$500.

**6 Special Handling**

- 31  **SATURDAY Delivery** Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
  - HOLD Weekday at FedEx Location** Not available for FedEx First Overnight.
  - 31  **HOLD Saturday at FedEx Location** Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.
- Does this shipment contain dangerous goods? One box must be checked.
- No
  - 4  Yes As per attached Shipper's Declaration
  - Yes Shipper's Declaration not required
- 6  **Dry Ice** Dry ice, 9 UN 1845  **Cargo Aircraft Only**

**7 Payment Bill to:**

- 1  **Sender** Acct. No. in Section 1 will be billed.
- 2  **Recipient**
- 3  **Third Party**
- 4  **Credit Card**
- 5  **Cash/Check** Obtain Recip. Acct. No.

Total Packages	Total Weight	Total Charges
1	44	
		Credit Card Auth:

\*Our liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

**8 NEW Residential Delivery Signature Options** If you require a signature, check Direct or Indirect.

- No Signature Required** Package may be left without obtaining a signature for delivery.
- 10  **Direct Signature** Anyone at recipient's address may sign for delivery. Fee applies.
- 34  **Indirect Signature** If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. Fee applies.

**520**

# Isotopic Curium By Alpha Spectroscopy

PAI 714 Rev 11

## Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

<b>Lab ID:</b> AS080603-7MB	<b>Sample Matrix:</b> WATER	<b>Prep Batch:</b> AS080603-7	<b>Final Aliquot:</b> 1690 ml
	<b>Prep SOP:</b> PAI 778 Rev 12	<b>QCBatchID:</b> AS080603-7-1	<b>Result Units:</b> pCi/l
	<b>Date Collected:</b> 03-Jun-08	<b>Run ID:</b> AS080603-7C	<b>File Name:</b> Spectrum #1
	<b>Date Prepared:</b> 03-Jun-08	<b>Count Time:</b> 1000 minutes	
	<b>Date Analyzed:</b> 06-Jun-08		

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	Lab Qualifier
13981-15-2	Cm-244	0.0014 +/- 0.0068	0.0037	0.05	U

### Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Am-243	1.332	0.827	pCi/l	62.1	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 (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- 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.

**Data Package ID:** CM0805246-1

# Isotopic Curium By Alpha Spectroscopy

PAI 714 Rev 11

## Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: AS080603-7LCS

Sample Matrix: WATER  
Prep SOP: PAI 778 Rev 12  
Date Collected: 03-Jun-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-7  
QCBatchID: AS080603-7-1  
Run ID: AS080603-7C  
Count Time: 1000 minutes

Final Aliquot: 1690 ml  
Result Units: pCi/l  
File Name: Spectrum #1

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13981-15-2	Cm-244	1.63 +/- 0.274	0.00338	1.66	98.3	79 - 118	P

### Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Am-243	1.332	0.901	pCi/l	67.6	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 (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: CM0805246-1

# Isotopic Curium By Alpha Spectroscopy

PAI 714 Rev 11

## Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

<b>Lab ID:</b> AS080603-7LCSD	<b>Sample Matrix:</b> WATER	<b>Prep Batch:</b> AS080603-7	<b>Final Aliquot:</b> 1690 ml
	<b>Prep SOP:</b> PAI 778 Rev 12	<b>QCBatchID:</b> AS080603-7-1	<b>Result Units:</b> pCi/l
	<b>Date Collected:</b> 03-Jun-08	<b>Run ID:</b> AS080603-7C	<b>File Name:</b> Spectrum #1
	<b>Date Prepared:</b> 03-Jun-08	<b>Count Time:</b> 1000 minutes	
	<b>Date Analyzed:</b> 06-Jun-08		

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13981-15-2	Cm-244	1.53 +/- 0.258	0.00958	1.66	91.8	79 - 118	P

### Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Am-243	1.332	0.960	pCi/l	72.1	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 (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: CM0805246-1

# Isotopic Curium By Alpha Spectroscopy

PAI 714 Rev 11

## Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	
Lab ID:	AS080603-7LCSD

Sample Matrix: WATER

Prep SOP: PAI 778 Rev 12

Date Collected: 03-Jun-08

Date Prepared: 03-Jun-08

Date Analyzed: 06-Jun-08

Prep Batch: AS080603-7

QCBatchID: AS080603-7-1

Run ID: AS080603-7C

Count Time: 1000 minutes

Final Aliquot: 1690 ml

Prep Basis: Unfiltered

Moisture(%): NA

Result Units: pCi/l

File Name: Spectrum #1

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
13981-15-2	Cm-244	1.6 +/- 0.27	1.5 +/- 0.26	0.29	2.13	P

### 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 (see PAI SOP 743)

DER - Duplicate Error Ratio (see PAI SOP 715)

BDL - Below Detection Limit

NR - Not Reported

Data Package ID: CM0805246-1

# Isotopic Curium By Alpha Spectroscopy

PAI 714 Rev 11

## Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	MCOI-4-5-29-08-RAD
Lab ID:	0805246-5

Sample Matrix: WATER  
Prep SOP: PAI 778 Rev 12  
Date Collected: 29-May-08  
Date Prepared: 03-Jun-08  
Date Analyzed: 06-Jun-08

Prep Batch: AS080603-7  
QCBatchID: AS080603-7-1  
Run ID: AS080603-7C  
Count Time: 1000 minutes  
Report Basis: Unfiltered

Final Aliquot: 1690 ml  
Prep Basis: Unfiltered  
Moisture(%): NA  
Result Units: pCi/l  
File Name: Spectrum #1

Analysis ReqCode: 309

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	Lab Qualifier
13981-15-2	Cm-244	-0.0013 +/- 0.0065	0.0097	0.05	U

### Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
Am-243	1.332	0.868	pCi/l	65.2	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 (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: CM0805246-1

# Paragon Analytics

## GC/MS Volatiles Case Narrative

---

### **NMED DOE Oversight Bureau**

05.29.08-569(HWB MCOI-1)

**Order Number - 0805246**

1. This report consists of 1 water sample. The sample was received cool and intact by Paragon on 05/31/2008. All aqueous samples were free of headspace prior to analysis.
2. The sample was prepared according to SW-846, 3rd Edition procedures. Specifically, the water sample was prepared by purging 10 mL using purge and trap procedures based on Method 5030C.
3. The sample was analyzed using GC/MS with an RTX-624 capillary column according to Paragon Standard Operating Procedure 525 Revision 12 based on SW-846 Method 8260B. All positive results were quantitated against the initial calibration standards using the internal standard technique. The identification of positive results was achieved by a comparison of the retention time and mass spectrum of the sample versus the daily calibration standard.
4. All initial calibration criteria for SPCC's and CCC's were met. If average response factors were used in the initial calibration, %RSD was  $\leq 15\%$ . If linear or higher order regression calibrations were used in the initial calibration, the coefficient of determination ( $r^2$ )  $\geq 0.99$ .
5. All initial calibrations are verified by comparing a second source standard calibration verification (ICV) against the calibration curve. All compounds in the second source verification had a %D of less than 25%.
6. All criteria for SPCC's and CCC's were met in daily (continuing) calibration verifications (CCV).
7. Methylene chloride, acetone and 2-butanone are common laboratory contaminants. In order to minimize the levels of these compounds detected in the gc/ms analysis, Paragon has designated its volatile laboratory as a restricted access area. In addition,



*Paragon Analytics*  
*Data Qualifier Flags*  
*Chromatography and Mass Spectrometry*

- U or ND:** This flag indicates that the compound was analyzed for but not detected.
- J:** This flag indicates an estimated value. This flag is used as follows : (1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the reporting limit (RL) but greater than the method detection limit (MDL); (3) when the retention time data indicate the presence of a compound that meets the GC identification criteria, and the result is less than the RL but greater than the MDL; and (4) the reported value is estimated.
- B:** This flag is used when the analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user. This flag shall be used for a tentatively identified compound (TIC) as well as for a positively identified target compound.
- E:** This flag identifies compounds whose concentration exceeds the upper level of the calibration range.
- A:** This flag indicates that a tentatively identified compound is a suspected aldol-condensation product.
- X:** This flag indicates that the analyte was diluted below an accurate quantitation level.
- \*:** This flag indicates that a spike recovery is equal to or outside the control criteria used.
- +:** This flag indicates that the relative percent difference (RPD) equals or exceeds the control criteria.

# Paragon Analytics

## Sample Number(s) Cross-Reference Table

---

**Paragon OrderNum:** 0805246

**Client Name:** NMED DOE Oversight Bureau

**Client Project Name:**

**Client Project Number:** 05.29.08-569(HWB MCOI-4)

**Client PO Number:** 06-667-55-01754

---

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
MCOI-4-5-29-08-CIO4	0805246-1		WATER	29-May-08	16:06
MCOI-4-5-29-08-MET	0805246-2		WATER	29-May-08	16:06
MCOI-4-5-29-08-VOC	0805246-3		WATER	29-May-08	16:06
MCOI-4-5-29-08-SVOC	0805246-4		WATER	29-May-08	16:06
MCOI-4-5-29-08-RAD	0805246-5		WATER	29-May-08	16:06



CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: NMED

Workorder No: 0805246

Project Manager: LS

Initials: CT Date: 5-31-08

1. Does this project require any <b>special handling</b> in addition to standard Paragon procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on <b>shipping containers</b> intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on <b>sample containers</b> intact?	NONE	<input checked="" type="radio"/> YES	NO
4. Is there a <b>COC (Chain-of-Custody)</b> present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the <b>COC and bottle labels</b> complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the <b>COC in agreement</b> with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were <b>airbills / shipping documents</b> present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous <b>samples requiring preservation</b> preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous <b>non-preserved samples</b> pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there <b>sufficient sample</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the <b>proper containers</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within <b>holding times</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received <b>intact?</b> (not broken or leaking, etc.)		YES	<input checked="" type="radio"/> NO
14. Are all samples requiring no headspace (VOC, GRO, Rx CN/S, radon), headspace free? Size of bubble: _____ < green pea _____ > green pea	<input checked="" type="radio"/> N/A	<input checked="" type="radio"/> YES	NO
15. Were samples checked for and free from the presence of <b>residual chlorine?</b> (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	<input checked="" type="radio"/> N/A	YES	NO
16. Were the samples <b>shipped on ice?</b>		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #2 <input checked="" type="radio"/> #4	RAD ONLY	<input checked="" type="radio"/> YES NO
Cooler #: <u>9-531-01</u> <u>1</u>			
Temperature (°C): <u>3.2</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>18</u>			
Background µR/hr reading: <u>13</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no. see Form 008.)			

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

The lids on the 1 Liter Amber bottles were received broken, it didn't appear that anything leaked. The lids were replaced with new ones.

*Noted for*

If applicable, was the client contacted?  YES / NO / NA Contact: K. Grant Date/Time: \_\_\_\_\_

Project Manager Signature / Date: [Signature] 6/2/08

\*IR Gun #2: Oakton, SN 29922500201-0066

\*IR Gun #4: Oakton, SN 2372220101-0002

8604 4512 4081

0200

Form ID No.

FedEx Retrieval Copy

From **8-30** Sender's FedEx Account Number

Sender's Name **Michael Dale** Phone **505 672-0440**

Company **DAVID DOE JR**

Address **194 State Road 4 Suite A**

City **Albuquerque** State **NM** ZIP **87114**

Your Internal Billing Reference **25,29,58 - 529 / HWB MKSI - 4**

To Recipient's Name **Lance Steele** Phone **970 490-1511**

Company **Paragon Analytics**

Recipient's Address **225 Commerce Dr.**

Address **Ft. Collins** State **CO** ZIP **70504**



8604 4512 4081

3.2

**4a Express Package Service**

- 1** FedEx Priority Overnight  
Next business morning. \* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 3** FedEx 2Day  
Second business day. \*\* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 5** FedEx Standard Overnight  
Next business afternoon. \* Saturday Delivery NOT available.
- 20** FedEx Express Saver  
Third business day. \*\* Saturday Delivery NOT available.
- 6** FedEx First Overnight  
Earliest next business morning delivery to select locations. \* Saturday Delivery NOT available.

**4b Express Freight Service**

- 7** FedEx 1Day Freight\*  
Next business day. \*\* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 8** FedEx 2Day Freight  
Second business day. \*\* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 83** FedEx 3Day Freight  
Third business day. \*\* Saturday Delivery NOT available.

**5 Packaging**

- 6** FedEx Envelope\*
- 2** FedEx Pak\*  
Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- 3** FedEx Box
- 4** FedEx Tube
- 1** Other

**6 Special Handling**

- 31** SATURDAY Delivery  
Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- HOLD Weekday at FedEx Location**  
Not available for FedEx First Overnight.
- 31** HOLD Saturday at FedEx Location  
Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.
- 4** Yes  
As per attached Shipper's Declaration.
- 4** No
- 6** Dry Ice  
Dry ice, 3 UN 1845
- 31** Cargo Aircraft Only

**7 Payment Bill to:**

- 1** Sender Acct. No. in Section 1 will be billed.
- 2** Recipient
- 3** Third Party
- 4** Credit Card
- 5** Cash/Check

Total Packages	Total Weight	Total Charges
1	44	

\*Our liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

**8 NEW Residential Delivery Signature Options** If you require a signature, check Direct or Indirect.

- No Signature Required**  
Package may be left without obtaining a signature for delivery.
- 10** Direct Signature  
Anyone at recipient's address may sign for delivery. **Fee applies.**
- 34** Indirect Signature  
If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. **Fee applies.**

**520**

Rev. Data 8/05-Part #158281-01994-2005 FedEx-PRINTED IN U.S.A. SRY

# GC/MS Volatiles

Method SW8260\_25B

Method Blank

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: VL080602-3MB

Sample Matrix: WATER  
% Moisture: N/A  
Date Collected: N/A  
Date Extracted: 02-Jun-08  
Date Analyzed: 02-Jun-08  
Prep Method: SW5030 Rev C

Prep Batch: VL080602-3  
QCBatchID: VL080602-3-3  
Run ID: VL080602-3A  
Cleanup: NONE  
Basis: N/A  
File Name: C10684

Sample Aliquot: 10 ml  
Final Volume: 10 ml  
Result Units: UG/L  
Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
75-71-8	DICHLORODIFLUOROMETHANE	1	1	1	U	
74-87-3	CHLOROMETHANE	1	1	1	U	
75-01-4	VINYL CHLORIDE	1	1	1	U	
74-83-9	BROMOMETHANE	1	1	1	U	
75-00-3	CHLOROETHANE	1	1	1	U	
75-69-4	TRICHLOROFLUOROMETHANE	1	1	1	U	
75-35-4	1,1-DICHLOROETHENE	1	1	1	U	
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROET	1	1	1	U	
67-64-1	ACETONE	1	10	10	U	
74-88-4	IODOMETHANE	1	1	1	U	
75-15-0	CARBON DISULFIDE	1	1	1	U	
75-09-2	METHYLENE CHLORIDE	1	0.92	1	J	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	1	1	U	
1634-04-4	METHYL TERTIARY BUTYL ETHER	1	1	1	U	
75-34-3	1,1-DICHLOROETHANE	1	1	1	U	
108-05-4	VINYL ACETATE	1	2	2	U	
156-59-2	CIS-1,2-DICHLOROETHENE	1	1	1	U	
78-93-3	2-BUTANONE	1	10	10	U	
74-97-5	BROMOCHLOROMETHANE	1	1	1	U	
67-66-3	CHLOROFORM	1	1	1	U	
71-55-6	1,1,1-TRICHLOROETHANE	1	1	1	U	
594-20-7	2,2-DICHLOROPROPANE	1	1	1	U	
56-23-5	CARBON TETRACHLORIDE	1	1	1	U	
563-58-6	1,1-DICHLOROPROPENE	1	1	1	U	
107-06-2	1,2-DICHLOROETHANE	1	1	1	U	
71-43-2	BENZENE	1	1	1	U	
79-01-6	TRICHLOROETHENE	1	1	1	U	

Data Package ID: VL0805246-1

# GC/MS Volatiles

Method SW8260\_25B

Method Blank

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: VL080602-3MB

Sample Matrix: WATER  
% Moisture: N/A  
Date Collected: N/A  
Date Extracted: 02-Jun-08  
Date Analyzed: 02-Jun-08  
Prep Method: SW5030 Rev C

Prep Batch: VL080602-3  
QCBatchID: VL080602-3-3  
Run ID: VL080602-3A  
Cleanup: NONE  
Basis: N/A  
File Name: C10684

Sample Aliquot: 10 ml  
Final Volume: 10 ml  
Result Units: UG/L  
Clean DF: 1

78-87-5	1,2-DICHLOROPROPANE	1	1	1	U	
74-95-3	DIBROMOMETHANE	1	1	1	U	
75-27-4	BROMODICHLOROMETHANE	1	1	1	U	
10061-01-5	CIS-1,3-DICHLOROPROPENE	1	1	1	U	
108-10-1	4-METHYL-2-PENTANONE	1	10	10	U	
108-88-3	TOLUENE	1	1	1	U	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	1	1	U	
79-00-5	1,1,2-TRICHLOROETHANE	1	1	1	U	
591-78-6	2-HEXANONE	1	10	10	U	
127-18-4	TETRACHLOROETHENE	1	1	1	U	
142-28-9	1,3-DICHLOROPROPANE	1	1	1	U	
124-48-1	DIBROMOCHLOROMETHANE	1	1	1	U	
106-93-4	1,2-DIBROMOETHANE	1	1	1	U	
544-10-5	1-CHLOROHEXANE	1	1	1	U	
108-90-7	CHLOROBENZENE	1	1	1	U	
630-20-6	1,1,1,2-TETRACHLOROETHANE	1	1	1	U	
100-41-4	ETHYLBENZENE	1	1	1	U	
136777-61-2	M+P-XYLENE	1	1	1	U	
95-47-6	O-XYLENE	1	1	1	U	
100-42-5	STYRENE	1	1	1	U	
75-25-2	BROMOFORM	1	1	1	U	
98-82-8	ISOPROPYLBENZENE	1	1	1	U	
96-18-4	1,2,3-TRICHLOROPROPANE	1	1	1	U	
79-34-5	1,1,2,2-TETRACHLOROETHANE	1	1	1	U	
108-86-1	BROMOBENZENE	1	1	1	U	
103-65-1	N-PROPYLBENZENE	1	1	1	U	
95-49-8	2-CHLOROTOLUENE	1	1	1	U	
108-67-8	1,3,5-TRIMETHYLBENZENE	1	1	1	U	
106-43-4	4-CHLOROTOLUENE	1	1	1	U	

Data Package ID: VL0805246-1

# GC/MS Volatiles

Method SW8260\_25B

Method Blank

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: VL080602-3MB

Sample Matrix: WATER  
% Moisture: N/A  
Date Collected: N/A  
Date Extracted: 02-Jun-08  
Date Analyzed: 02-Jun-08  
Prep Method: SW5030 Rev C

Prep Batch: VL080602-3  
QCBatchID: VL080602-3-3  
Run ID: VL080602-3A  
Cleanup: NONE  
Basis: N/A  
File Name: C10684

Sample Aliquot: 10 ml  
Final Volume: 10 ml  
Result Units: UG/L  
Clean DF: 1

98-06-6	TERT-BUTYLBENZENE	1	1	1	U	
95-63-6	1,2,4-TRIMETHYLBENZENE	1	1	1	U	
135-98-8	SEC-BUTYLBENZENE	1	1	1	U	
541-73-1	1,3-DICHLOROBENZENE	1	1	1	U	
99-87-6	P-ISOPROPYLTOLUENE	1	1	1	U	
106-46-7	1,4-DICHLOROBENZENE	1	1	1	U	
104-51-8	N-BUTYLBENZENE	1	1	1	U	
95-50-1	1,2-DICHLOROBENZENE	1	1	1	U	
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	1	2	2	U	
120-82-1	1,2,4-TRICHLOROBENZENE	1	1	1	U	
87-68-3	HEXACHLOROBUTADIENE	1	1	1	U	
91-20-3	NAPHTHALENE	1	1	1	U	
87-61-6	1,2,3-TRICHLOROBENZENE	1	1	1	U	

## Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	23.2		25	93	78 - 129
1868-53-7	DIBROMOFLUOROMETHANE	24.5		25	98	80 - 124
2037-26-5	TOLUENE-D8	26.1		25	105	81 - 119

Data Package ID: VL0805246-1

# GC/MS Volatiles

Method SW8260\_25B

## Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	MCOI-4-5-29-08-VOC
Lab ID:	0805246-3

Sample Matrix: WATER  
% Moisture: N/A  
Date Collected: 29-May-08  
Date Extracted: 02-Jun-08  
Date Analyzed: 02-Jun-08  
Prep Method: SW5030 Rev C

Prep Batch: VL080602-3  
QCBatchID: VL080602-3-3  
Run ID: VL080602-3A  
Cleanup: NONE  
Basis: As Received  
File Name: C10693

Sample Aliquot: 10 ml  
Final Volume: 10 ml  
Result Units: UG/L  
Clean DF: 1

Analysis ReqCode: 101

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
75-71-8	DICHLORODIFLUOROMETHANE	1	1	1	U	
74-87-3	CHLOROMETHANE	1	1	1	U	
75-01-4	VINYL CHLORIDE	1	1	1	U	
74-83-9	BROMOMETHANE	1	1	1	U	
75-00-3	CHLOROETHANE	1	1	1	U	
75-69-4	TRICHLOROFLUOROMETHANE	1	1	1	U	
75-35-4	1,1-DICHLOROETHENE	1	1	1	U	
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1	1	1	U	
67-64-1	ACETONE	1	10	10	U	
74-88-4	IODOMETHANE	1	1	1	U	
75-15-0	CARBON DISULFIDE	1	1	1	U	
75-09-2	METHYLENE CHLORIDE	1	1	1	U	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	1	1	U	
1634-04-4	METHYL TERTIARY BUTYL ETHER	1	1	1	U	
75-34-3	1,1-DICHLOROETHANE	1	1	1	U	
108-05-4	VINYL ACETATE	1	2	2	U	
156-59-2	CIS-1,2-DICHLOROETHENE	1	1	1	U	
78-93-3	2-BUTANONE	1	10	10	U	
74-97-5	BROMOCHLOROMETHANE	1	1	1	U	
67-66-3	CHLOROFORM	1	1	1	U	
71-55-6	1,1,1-TRICHLOROETHANE	1	1	1	U	
594-20-7	2,2-DICHLOROPROPANE	1	1	1	U	
56-23-5	CARBON TETRACHLORIDE	1	1	1	U	
563-58-6	1,1-DICHLOROPROPENE	1	1	1	U	
107-06-2	1,2-DICHLOROETHANE	1	1	1	U	
71-43-2	BENZENE	1	1	1	U	
79-01-6	TRICHLOROETHENE	1	1	1	U	

Data Package ID: VL0805246-1

# GC/MS Volatiles

Method SW8260\_25B

## Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	MCOI-4-5-29-08-VOC
Lab ID:	0805246-3

Sample Matrix: WATER  
% Moisture: N/A  
Date Collected: 29-May-08  
Date Extracted: 02-Jun-08  
Date Analyzed: 02-Jun-08  
Prep Method: SW5030 Rev C

Prep Batch: VL080602-3  
QCBatchID: VL080602-3-3  
Run ID: VL080602-3A  
Cleanup: NONE  
Basis: As Received  
File Name: C10693

Sample Aliquot: 10 ml  
Final Volume: 10 ml  
Result Units: UG/L  
Clean DF: 1

Analysis ReqCode: 101

78-87-5	1,2-DICHLOROPROPANE	1	1	1	U	
74-95-3	DIBROMOMETHANE	1	1	1	U	
75-27-4	BROMODICHLOROMETHANE	1	1	1	U	
10061-01-5	CIS-1,3-DICHLOROPROPENE	1	1	1	U	
108-10-1	4-METHYL-2-PENTANONE	1	10	10	U	
108-88-3	TOLUENE	1	1	1	U	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	1	1	U	
79-00-5	1,1,2-TRICHLOROETHANE	1	1	1	U	
591-78-6	2-HEXANONE	1	10	10	U	
127-18-4	TETRACHLOROETHENE	1	1	1	U	
142-28-9	1,3-DICHLOROPROPANE	1	1	1	U	
124-48-1	DIBROMOCHLOROMETHANE	1	1	1	U	
106-93-4	1,2-DIBROMOETHANE	1	1	1	U	
544-10-5	1-CHLOROHEXANE	1	1	1	U	
108-90-7	CHLOROBENZENE	1	1	1	U	
630-20-6	1,1,1,2-TETRACHLOROETHANE	1	1	1	U	
100-41-4	ETHYLBENZENE	1	1	1	U	
136777-61-2	M+P-XYLENE	1	1	1	U	
95-47-6	O-XYLENE	1	1	1	U	
100-42-5	STYRENE	1	1	1	U	
75-25-2	BROMOFORM	1	1	1	U	
98-82-8	ISOPROPYLBENZENE	1	1	1	U	
96-18-4	1,2,3-TRICHLOROPROPANE	1	1	1	U	
79-34-5	1,1,1,2-TETRACHLOROETHANE	1	1	1	U	
108-86-1	BROMOBENZENE	1	1	1	U	
103-65-1	N-PROPYLBENZENE	1	1	1	U	
95-49-8	2-CHLOROTOLUENE	1	1	1	U	
108-67-8	1,3,5-TRIMETHYLBENZENE	1	1	1	U	
106-43-4	4-CHLOROTOLUENE	1	1	1	U	

Data Package ID: VL0805246-1

# GC/MS Volatiles

Method SW8260\_25B

## Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	MCOI-4-5-29-08-VOC
Lab ID:	0805246-3

Sample Matrix: WATER  
% Moisture: N/A  
Date Collected: 29-May-08  
Date Extracted: 02-Jun-08  
Date Analyzed: 02-Jun-08  
Prep Method: SW5030 Rev C

Prep Batch: VL080602-3  
QCBatchID: VL080602-3-3  
Run ID: VL080602-3A  
Cleanup: NONE  
Basis: As Received  
File Name: C10693

Sample Aliquot: 10 ml  
Final Volume: 10 ml  
Result Units: UG/L  
Clean DF: 1

Analysis ReqCode: 101

Sample ID	Compound	Concentration	Units	Flag	Result	Control
98-06-6	TERT-BUTYLBENZENE	1		1	U	
95-63-6	1,2,4-TRIMETHYLBENZENE	1		1	U	
135-98-8	SEC-BUTYLBENZENE	1		1	U	
541-73-1	1,3-DICHLOROBENZENE	1		1	U	
99-87-6	P-ISOPROPYLTOLUENE	1		1	U	
106-46-7	1,4-DICHLOROBENZENE	1		1	U	
104-51-8	N-BUTYLBENZENE	1		1	U	
95-50-1	1,2-DICHLOROBENZENE	1		1	U	
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	1		2	U	
120-82-1	1,2,4-TRICHLOROBENZENE	1		1	U	
87-68-3	HEXACHLOROBUTADIENE	1		1	U	
91-20-3	NAPHTHALENE	1		1	U	
87-61-6	1,2,3-TRICHLOROBENZENE	1		1	U	

## Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	23.2		25	93	78 - 129
1868-53-7	DIBROMOFLUOROMETHANE	25.1		25	100	80 - 124
2037-26-5	TOLUENE-D8	22.1		25	88	81 - 119

Data Package ID: VL0805246-1

# GC/MS Volatiles

## Method SW8260\_25B

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: VL080602-3LCS

Sample Matrix: WATER  
% Moisture: N/A  
Date Collected: N/A  
Date Extracted: 06/02/2008  
Date Analyzed: 06/02/2008  
Prep Method: SW5030C

Prep Batch: VL080602-3  
QCBatchID: VL080602-3-3  
Run ID: VL080602-3A  
Cleanup: NONE  
Basis: N/A  
File Name: C10680

Sample Aliquot: 10 ml  
Final Volume: 10 ml  
Result Units: UG/L  
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
75-35-4	1,1-DICHLOROETHENE	10	9.59	1		96	75 - 126%
71-43-2	BENZENE	10	9.89	1		99	82 - 122%
79-01-6	TRICHLOROETHENE	10	9.66	1		97	82 - 121%
108-88-3	TOLUENE	10	9.47	1		95	83 - 121%
108-90-7	CHLOROBENZENE	10	9.4	1		94	82 - 121%

Lab ID: VL080602-3LCSD

Sample Matrix: WATER  
% Moisture: N/A  
Date Collected: N/A  
Date Extracted: 06/02/2008  
Date Analyzed: 06/02/2008  
Prep Method: SW5030C

Prep Batch: VL080602-3  
QCBatchID: VL080602-3-3  
Run ID: VL080602-3A  
Cleanup: NONE  
Basis: N/A  
File Name: C10681

Sample Aliquot: 10 ml  
Final Volume: 10 ml  
Result Units: UG/L  
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
75-35-4	1,1-DICHLOROETHENE	10	9.89	1		99	20	3
71-43-2	BENZENE	10	9.69	1		97	20	2
79-01-6	TRICHLOROETHENE	10	9.27	1		93	20	4
108-88-3	TOLUENE	10	9.2	1		92	20	3
108-90-7	CHLOROBENZENE	10	8.87	1		89	20	6

Data Package ID: VL0805246-1

# GC/MS Volatiles

Method SW8260\_25B

## Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

### Surrogate Recovery LCS/LCSD

CASNO	Target Analyte	Spike Added	LCS % Rec.	LCS Flag	LCSD % Rec.	LCSD Flag	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	25	99		101		78 - 129
1868-53-7	DIBROMOFLUOROMETHANE	25	100		92		80 - 124
2037-26-5	TOLUENE-D8	25	100		92		81 - 119

Data Package ID: VL0805246-1

Date Printed: Wednesday, June 04, 2008

Paragon Analytics

LIMS Version: 6.153A

Page 2 of 2

# Paragon Analytics

## GC/MS Semivolatiles Case Narrative

---

### **NMED DOE Oversight Bureau**

05.29.08-569(HWB MCOI-1)

**Order Number - 0805246**

1. This report consists of 1 water sample. The sample was received cool and intact on 05/31/2008.
2. The sample was prepared and analyzed according to SW-846, 3rd Edition protocol utilizing Paragon Analytics Standard Operating Procedures. Specifically, the water sample was extracted using continuous liquid-liquid extractors, according to SW-846 Method 3520C utilizing Paragon Analytics Standard Operating Procedure 617 Revision 13.
3. The extracts were analyzed using GC/MS with a DB-5.625 capillary column according to Paragon Analytics Standard Operating Procedure 506 Revision 15 based on SW-846 Method 8270D. All positive results were quantitated against the initial calibration standards using the internal standard technique. The identification of positive results was achieved by a comparison of the retention time and mass spectrum of the sample versus the daily calibration standard.
4. All initial calibration criteria for SPCC's and CCC's were met. If average response factors were used in the initial calibration, %RSD was  $\leq 15\%$ . If linear or higher order regression calibrations were used in the initial calibration, the coefficient of determination ( $r^2$ )  $\geq 0.99$ .
5. All initial calibration standards are verified by comparing a second source standard initial calibration verification (ICV) against the calibration curve. All compounds in the second source verification had a %D of less than 25%.
6. All SPCC and CCC criteria were met in each of the daily (continuing) calibration verifications.
7. All method blank criteria were met.

8. All laboratory control spike and laboratory control spike duplicate recoveries and RPDs were within the acceptance criteria.
9. Since a sample from this Order Number was not the selected quality control (QC) sample, matrix specific QC results are not included in this report.
10. The sample was extracted and analyzed within the established holding time.
11. All surrogate recoveries were within acceptance criteria.
12. All internal standard recoveries were within acceptance criteria with the following exception:

Internal Standard	Sample	Direction
Perylene-D <sub>12</sub>	LCSD	High

The LCSD was not re-analyzed since the high internal standard is not used for any calculations.

13. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in Paragon Analytics Standard Operating Procedure 939 Revision 3. The chromatographic data system marks the manual integrations with an m on the quantitation report. Whenever manual integrations are performed, before and after chromatograms of the peak that was manually integrated are included in the report along with the reason why the re-integration was necessary.

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

  
 \_\_\_\_\_  
 Sharon L. Jobs  
 Organics Primary Data Reviewer

6-25-08  
 Date

  
 \_\_\_\_\_  
 Eric Bayless  
 Organics Final Data Reviewer

6/25/08  
 Date

***Paragon Analytics***  
***Data Qualifier Flags***  
***Chromatography and Mass Spectrometry***

- U or ND:** This flag indicates that the compound was analyzed for but not detected.
- J:** This flag indicates an estimated value. This flag is used as follows: (1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the reporting limit (RL) but greater than the method detection limit (MDL); (3) when the retention time data indicate the presence of a compound that meets the GC identification criteria, and the result is less than the RL but greater than the MDL; and (4) the reported value is estimated.
- B:** This flag is used when the analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user. This flag shall be used for a tentatively identified compound (TIC) as well as for a positively identified target compound.
- E:** This flag identifies compounds whose concentration exceeds the upper level of the calibration range.
- A:** This flag indicates that a tentatively identified compound is a suspected aldol-condensation product.
- X:** This flag indicates that the analyte was diluted below an accurate quantitation level.
- \***: This flag indicates that a spike recovery is equal to or outside the control criteria used.
- +**: This flag indicates that the relative percent difference (RPD) equals or exceeds the control criteria.

# Paragon Analytics

## Sample Number(s) Cross-Reference Table

---

**Paragon OrderNum:** 0805246

**Client Name:** NMED DOE Oversight Bureau

**Client Project Name:**

**Client Project Number:** 05.29.08-569(HWB MCOI-4)

**Client PO Number:** 06-667-55-01754

---

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
MCOI-4-5-29-08-CIO4	0805246-1		WATER	29-May-08	16:06
MCOI-4-5-29-08-MET	0805246-2		WATER	29-May-08	16:06
MCOI-4-5-29-08-VOC	0805246-3		WATER	29-May-08	16:06
MCOI-4-5-29-08-SVOC	0805246-4		WATER	29-May-08	16:06
MCOI-4-5-29-08-RAD	0805246-5		WATER	29-May-08	16:06



CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: NMED

Workorder No: 0805246

Project Manager: LS

Initials: CT Date: 5-31-08

1. Does this project require any <b>special handling</b> in addition to standard Paragon procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on <b>shipping containers</b> intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on <b>sample containers</b> intact?	NONE	<input checked="" type="radio"/> YES	NO
4. Is there a <b>COC (Chain-of-Custody)</b> present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the <b>COC and bottle labels</b> complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the <b>COC in agreement</b> with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were <b>airbills / shipping documents</b> present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous <b>samples requiring preservation</b> preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous <b>non-preserved samples</b> pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there <b>sufficient sample</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the <b>proper containers</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within <b>holding times</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received <b>intact?</b> (not broken or leaking, etc.)		YES	<input checked="" type="radio"/> NO
14. Are all samples requiring no headspace (VOC, GRO, Rx CN/S, radon), headspace free? Size of bubble: ___ < green pea ___ > green pea	<sup>at 531-01</sup> <input checked="" type="radio"/> N/A	<input checked="" type="radio"/> YES	NO
15. Were samples checked for and free from the presence of <b>residual chlorine?</b> (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	<input checked="" type="radio"/> N/A	YES	NO
16. Were the samples <b>shipped on ice?</b>		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #2 <input checked="" type="radio"/> #4	RAD ONLY	<input checked="" type="radio"/> YES NO
Cooler #: <u>9.531-01</u> 1			
Temperature (°C): <u>3.2</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>18</u>			
Background µR/hr reading: <u>13</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no. see Form 008.)			

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

The lids on the 1 Liter Amber bottles were received broken, it didn't appear that anything leaked. The lids were replaced with new ones.

*Noted for*

If applicable, was the client contacted?  YES / NO / NA Contact: K. Grant Date/Time: \_\_\_\_\_

Project Manager Signature / Date: [Signature] 6/2/08

\*IR Gun #2: Oakton, SN 29922500201-0066

\*IR Gun #4: Oakton, SN 2372220101-0002

8604 4512 4081

0200

Form ID No.

FedEx Retrieval Copy

From **8-30** Sender's FedEx Account Number

Sender's Name **Michael Dale** Phone **505 672-0440**

Company **DAVID DOE JR**

Address **194 State Road 4 Suite A**

City **Albuquerque** State **NM** ZIP **87544**

Your Internal Billing Reference **25,29,58 - 529 / HWB MKSI - 4)**

To Recipient's Name **Lance Steele** Phone **970 490-1511**

Company **Paragon Analytics**

Recipient's Address **225 Commerce Dr.**

Address To request a package be held at a specific FedEx location, print FedEx address here.

City **FT. Collins** State **CO** ZIP **70504**



8604 4512 4081

3.2

**4a Express Package Service**

- 1** FedEx Priority Overnight  
Next business morning. \* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 3** FedEx 2Day  
Second business day. \*\* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 5** FedEx Standard Overnight  
Next business afternoon. \* Saturday Delivery NOT available.
- 20** FedEx Express Saver  
Third business day. \*\* Saturday Delivery NOT available.
- 6** FedEx First Overnight  
Earliest next business morning delivery to select locations. \* Saturday Delivery NOT available.

**4b Express Freight Service**

- 7** FedEx 1Day Freight\*  
Next business day. \*\* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 8** FedEx 2Day Freight  
Second business day. \*\* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 83** FedEx 3Day Freight  
Third business day. \*\* Saturday Delivery NOT available.

**5 Packaging**

- 6** FedEx Envelope\*
- 2** FedEx Pak\*  
Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- 3** FedEx Box
- 4** FedEx Tube
- 1** Other

**6 Special Handling**

- 31** SATURDAY Delivery  
Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
  - HOLD Weekday at FedEx Location**  
Not available for FedEx First Overnight.
  - 31** HOLD Saturday at FedEx Location  
Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.
- Does this shipment contain dangerous goods?  
 No  Yes  Yes  
As per attached Shipper's Declaration  Yes  No  
Shippers Declaration not required
- 6** Dry Ice  
Dry ice, 9 UN 1845
  - Cargo Aircraft Only

**7 Payment Bill to:**

- 1** Sender Acct. No. in Section 1 will be billed.
- 2** Recipient
- 3** Third Party
- 4** Credit Card
- 5** Cash/Check

Total Packages	Total Weight	Total Charges
1	44	

\*Our liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

**8 NEW Residential Delivery Signature Options** If you require a signature, check Direct or Indirect.

- No Signature Required**  
Package may be left without obtaining a signature for delivery.
- 10** Direct Signature  
Anyone at recipient's address may sign for delivery. **Fee applies.**
- 34** Indirect Signature  
If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. **Fee applies.**

**520**

Rev. Data 8/05-Part #158281-01994-2005 FedEx-PRINTED IN U.S.A. SRY

# GC/MS Semi-volatiles

Method SW8270D

Method Blank

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: EX080602-2MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 02-Jun-08

Date Analyzed: 09-Jun-08

Prep Batch: EX080602-2

QCBatchID: EX080602-2-2

Run ID: SV080609-1

Cleanup: NONE

Basis: N/A

File Name: N4014

Sample Aliquot: 1000 ml

Final Volume: 1 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
123-91-1	1,4-DIOXANE	1	10	10	0.84	U	
110-86-1	PYRIDINE	1	10	10	3.1	U	
62-75-9	N-NITROSODIMETHYLAMINE	1	10	10	1.1	U	
62-53-3	ANILINE	1	10	10	3.5	U	
108-95-2	PHENOL	1	10	10	2	U	
111-44-4	BIS(2-CHLOROETHYL)ETHER	1	10	10	2	U	
95-57-8	2-CHLOROPHENOL	1	10	10	2	U	
541-73-1	1,3-DICHLOROBENZENE	1	10	10	2.2	U	
106-46-7	1,4-DICHLOROBENZENE	1	10	10	2.2	U	
95-50-1	1,2-DICHLOROBENZENE	1	10	10	2.1	U	
100-51-6	BENZYL ALCOHOL	1	10	10	3.3	U	
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	1	10	10	2	U	
95-48-7	2-METHYLPHENOL	1	10	10	2	U	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	1	10	10	2	U	
108-39-4	3+4-METHYLPHENOL	1	10	10	2	U	
67-72-1	HEXACHLOROETHANE	1	10	10	2.2	U	
98-95-3	NITROBENZENE	1	10	10	2	U	
78-59-1	ISOPHORONE	1	10	10	2	U	
88-75-5	2-NITROPHENOL	1	10	10	2	U	
105-67-9	2,4-DIMETHYLPHENOL	1	10	10	3.2	U	
111-91-1	BIS(2-CHLOROETHOXY)METHANE	1	10	10	2	U	
120-83-2	2,4-DICHLOROPHENOL	1	10	10	2	U	
65-85-0	BENZOIC ACID	1	50	50	10	U	
120-82-1	1,2,4-TRICHLOROBENZENE	1	10	10	2	U	
91-20-3	NAPHTHALENE	1	10	10	2	U	
106-47-8	4-CHLOROANILINE	1	10	10	3.1	U	
87-68-3	HEXACHLOROBUTADIENE	1	10	10	2	U	
59-50-7	4-CHLORO-3-METHYLPHENOL	1	10	10	2	U	

Data Package ID: SV0805246-1

# GC/MS Semi-volatiles

Method SW8270D

Method Blank

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: EX080602-2MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 02-Jun-08

Date Analyzed: 09-Jun-08

Prep Batch: EX080602-2

QCBatchID: EX080602-2-1

Run ID: SV080609-1

Cleanup: NONE

Basis: N/A

File Name: N4014

Sample Aliquot: 1000 ml

Final Volume: 1 ml

Result Units: UG/L

Clean DF: 1

91-57-6	2-METHYLNAPHTHALENE	1	10	10	2	U	
77-47-4	HEXACHLOROCYCLOPENTADIENE	1	10	10	2	U	
88-06-2	2,4,6-TRICHLOROPHENOL	1	10	10	2	U	
95-95-4	2,4,5-TRICHLOROPHENOL	1	10	10	2	U	
91-58-7	2-CHLORONAPHTHALENE	1	10	10	2	U	
88-74-4	2-NITROANILINE	1	20	20	4.4	U	
131-11-3	DIMETHYL PHTHALATE	1	10	10	2	U	
606-20-2	2,6-DINITROTOLUENE	1	10	10	2	U	
208-96-8	ACENAPHTHYLENE	1	10	10	2	U	
99-09-2	3-NITROANILINE	1	20	20	4	U	
83-32-9	ACENAPHTHENE	1	10	10	2	U	
51-28-5	2,4-DINITROPHENOL	1	20	20	5	U	
100-02-7	4-NITROPHENOL	1	20	20	5.2	U	
132-64-9	DIBENZOFURAN	1	10	10	2	U	
121-14-2	2,4-DINITROTOLUENE	1	10	10	2	U	
84-66-2	DIETHYL PHTHALATE	1	10	10	2	U	
86-73-7	FLUORENE	1	10	10	2	U	
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	1	10	10	2	U	
100-01-6	4-NITROANILINE	1	20	20	4.4	U	
103-33-3	AZOBENZENE	1	10	10	2	U	
534-52-1	4,6-DINITRO-2-METHYLPHENOL	1	20	20	5.8	U	
86-30-6	N-NITROSODIPHENYLAMINE	1	10	10	2	U	
101-55-3	4-BROMOPHENYL PHENYL ETHER	1	10	10	2	U	
118-74-1	HEXACHLOROBENZENE	1	10	10	2	U	
58-90-2	2,3,4,6-TETRACHLOROPHENOL	1	10	10	2	U	
87-86-5	PENTACHLOROPHENOL	1	20	20	4	U	
85-01-8	PHENANTHRENE	1	10	10	2	U	
120-12-7	ANTHRACENE	1	10	10	2	U	
86-74-8	CARBAZOLE	1	10	10	2	U	
84-74-2	DI-N-BUTYL PHTHALATE	1	10	10	2	U	

Data Package ID: SV0805246-1

# GC/MS Semi-volatiles

Method SW8270D

Method Blank

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: EX080602-2MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 02-Jun-08

Date Analyzed: 09-Jun-08

Prep Batch: EX080602-2

QCBatchID: EX080602-2-1

Run ID: SV080609-1

Cleanup: NONE

Basis: N/A

File Name: N4014

Sample Aliquot: 1000 ml

Final Volume: 1 ml

Result Units: UG/L

Clean DF: 1

206-44-0	FLUORANTHENE	1	10	10	2	U	
129-00-0	PYRENE	1	10	10	2	U	
85-68-7	BUTYL BENZYL PHTHALATE	1	10	10	3.2	U	
56-55-3	BENZO(A)ANTHRACENE	1	10	10	3.1	U	
91-94-1	3,3'-DICHLOROBENZIDINE	1	10	10	3.1	U	
218-01-9	CHRYSENE	1	10	10	2	U	
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	1	10	10	2	U	
117-84-0	DI-N-OCTYL PHTHALATE	1	10	10	3.1	U	
205-99-2	BENZO(B)FLUORANTHENE	1	10	10	2	U	
207-08-9	BENZO(K)FLUORANTHENE	1	10	10	2	U	
50-32-8	BENZO(A)PYRENE	1	10	10	2	U	
193-39-5	INDENO(1,2,3-CD)PYRENE	1	10	10	2	U	
53-70-3	DIBENZO(A,H)ANTHRACENE	1	10	10	2	U	
191-24-2	BENZO(G,H,I)PERYLENE	1	10	10	2	U	

## Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
118-79-6	2,4,6-TRIBROMOPHENOL	45.7		75	61	23 - 100
321-60-8	2-FLUOROBIPHENYL	36		50	72	21 - 106
367-12-4	2-FLUOROPHENOL	58.9		75	79	21 - 100
4165-60-0	NITROBENZENE-D5	35.8		50	72	34 - 111
4165-62-2	PHENOL-D5	55.5		75	74	15 - 104
1718-51-0	TERPHENYL-D14	40.8		50	82	33 - 111

Data Package ID: SV0805246-1

Date Printed: Wednesday, June 25, 2008

Paragon Analytics

Page 3 of 3

LIMS Version: 6.163A

# GC/MS Semi-volatiles

## Method SW8270D

### Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	MCOI-4-5-29-08-SVOC
Lab ID:	0805246-4

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 29-May-08

Date Extracted: 02-Jun-08

Date Analyzed: 09-Jun-08

Prep Method: SW3520 Rev C

Prep Batch: EX080602-2

QCBatchID: EX080602-2-2

Run ID: SV080609-1

Cleanup: NONE

Basis: As Received

File Name: N4019

Sample Aliquot: 950 ml

Final Volume: 1 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: 115

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
123-91-1	1,4-DIOXANE	1	36	11	0.89		
110-86-1	PYRIDINE	1	11	11	3.3	U	
62-75-9	N-NITROSODIMETHYLAMINE	1	11	11	1.2	U	
62-53-3	ANILINE	1	11	11	3.7	U	
108-95-2	PHENOL	1	11	11	2.1	U	
111-44-4	BIS(2-CHLOROETHYL)ETHER	1	11	11	2.1	U	
95-57-8	2-CHLOROPHENOL	1	11	11	2.1	U	
541-73-1	1,3-DICHLOROBENZENE	1	11	11	2.3	U	
106-46-7	1,4-DICHLOROBENZENE	1	11	11	2.3	U	
95-50-1	1,2-DICHLOROBENZENE	1	11	11	2.2	U	
100-51-6	BENZYL ALCOHOL	1	11	11	3.5	U	
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	1	11	11	2.1	U	
95-48-7	2-METHYLPHENOL	1	11	11	2.1	U	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	1	11	11	2.1	U	
108-39-4	3+4-METHYLPHENOL	1	11	11	2.1	U	
67-72-1	HEXACHLOROETHANE	1	11	11	2.3	U	
98-95-3	NITROBENZENE	1	11	11	2.1	U	
78-59-1	ISOPHORONE	1	11	11	2.1	U	
88-75-5	2-NITROPHENOL	1	11	11	2.1	U	
105-67-9	2,4-DIMETHYLPHENOL	1	11	11	3.3	U	
111-91-1	BIS(2-CHLOROETHOXY)METHANE	1	11	11	2.1	U	
120-83-2	2,4-DICHLOROPHENOL	1	11	11	2.1	U	
65-85-0	BENZOIC ACID	1	53	53	11	U	
120-82-1	1,2,4-TRICHLOROBENZENE	1	11	11	2.1	U	
91-20-3	NAPHTHALENE	1	11	11	2.1	U	
106-47-8	4-CHLOROANILINE	1	11	11	3.3	U	

Data Package ID: SV0805246-1

# GC/MS Semi-volatiles

## Method SW8270D

### Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	MCOI-4-5-29-08-SVOC
Lab ID:	0805246-4

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 29-May-08

Date Extracted: 02-Jun-08

Date Analyzed: 09-Jun-08

Prep Method: SW3520 Rev C

Prep Batch: EX080602-2

QCBatchID: EX080602-2-1

Run ID: SV080609-1

Cleanup: NONE

Basis: As Received

File Name: N4019

Sample Aliquot: 950 ml

Final Volume: 1 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: 115

87-68-3	HEXACHLOROBUTADIENE	1	11	11	2.1	U	
59-50-7	4-CHLORO-3-METHYLPHENOL	1	11	11	2.1	U	
91-57-6	2-METHYLNAPHTHALENE	1	11	11	2.1	U	
77-47-4	HEXACHLOROCYCLOPENTADIENE	1	11	11	2.1	U	
88-06-2	2,4,6-TRICHLOROPHENOL	1	11	11	2.1	U	
95-95-4	2,4,5-TRICHLOROPHENOL	1	11	11	2.1	U	
91-58-7	2-CHLORONAPHTHALENE	1	11	11	2.1	U	
88-74-4	2-NITROANILINE	1	21	21	4.7	U	
131-11-3	DIMETHYL PHTHALATE	1	11	11	2.1	U	
606-20-2	2,6-DINITROTOLUENE	1	11	11	2.1	U	
208-96-8	ACENAPHTHYLENE	1	11	11	2.1	U	
99-09-2	3-NITROANILINE	1	21	21	4.2	U	
83-32-9	ACENAPHTHENE	1	11	11	2.1	U	
51-28-5	2,4-DINITROPHENOL	1	21	21	5.2	U	
100-02-7	4-NITROPHENOL	1	21	21	5.5	U	
132-64-9	DIBENZOFURAN	1	11	11	2.1	U	
121-14-2	2,4-DINITROTOLUENE	1	11	11	2.1	U	
84-66-2	DIETHYL PHTHALATE	1	11	11	2.1	U	
86-73-7	FLUORENE	1	11	11	2.1	U	
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	1	11	11	2.1	U	
100-01-6	4-NITROANILINE	1	21	21	4.6	U	
103-33-3	AZOBENZENE	1	11	11	2.1	U	
534-52-1	4,6-DINITRO-2-METHYLPHENOL	1	21	21	6.1	U	
86-30-6	N-NITROSODIPHENYLAMINE	1	11	11	2.1	U	
101-55-3	4-BROMOPHENYL PHENYL ETHER	1	11	11	2.1	U	
118-74-1	HEXACHLOROBENZENE	1	11	11	2.1	U	
58-90-2	2,3,4,6-TETRACHLOROPHENOL	1	11	11	2.1	U	
87-86-5	PENTACHLOROPHENOL	1	21	21	4.2	U	

Data Package ID: SV0805246-1

# GC/MS Semi-volatiles

## Method SW8270D

### Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	MCOI-4-5-29-08-SVOC
Lab ID:	0805246-4

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 29-May-08

Date Extracted: 02-Jun-08

Date Analyzed: 09-Jun-08

Prep Method: SW3520 Rev C

Prep Batch: EX080602-2

QC Batch ID: EX080602-2-1

Run ID: SV080609-1

Cleanup: NONE

Basis: As Received

File Name: N4019

Sample Aliquot: 950 ml

Final Volume: 1 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: 115

85-01-8	PHENANTHRENE	1	11	11	2.1	U	
120-12-7	ANTHRACENE	1	11	11	2.1	U	
86-74-8	CARBAZOLE	1	11	11	2.1	U	
84-74-2	DI-N-BUTYL PHTHALATE	1	11	11	2.1	U	
206-44-0	FLUORANTHENE	1	11	11	2.1	U	
129-00-0	PYRENE	1	11	11	2.1	U	
85-68-7	BUTYL BENZYL PHTHALATE	1	11	11	3.4	U	
56-55-3	BENZO(A)ANTHRACENE	1	11	11	3.3	U	
91-94-1	3,3'-DICHLOROBENZIDINE	1	11	11	3.3	U	
218-01-9	CHRYSENE	1	11	11	2.1	U	
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	1	11	11	2.1	U	
117-84-0	DI-N-OCTYL PHTHALATE	1	11	11	3.3	U	
205-99-2	BENZO(B)FLUORANTHENE	1	11	11	2.1	U	
207-08-9	BENZO(K)FLUORANTHENE	1	11	11	2.1	U	
50-32-8	BENZO(A)PYRENE	1	11	11	2.1	U	
193-39-5	INDENO(1,2,3-CD)PYRENE	1	11	11	2.1	U	
53-70-3	DIBENZO(A,H)ANTHRACENE	1	11	11	2.1	U	
191-24-2	BENZO(G,H,I)PERYLENE	1	11	11	2.1	U	

Data Package ID: SV0805246-1

# GC/MS Semi-volatiles

Method SW8270D

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	MCOI-4-5-29-08-SVOC
Lab ID:	0805246-4

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 29-May-08

Date Extracted: 02-Jun-08

Date Analyzed: 09-Jun-08

Prep Method: SW3520 Rev C

Prep Batch: EX080602-2

QCBatchID: EX080602-2-1

Run ID: SV080609-1

Cleanup: NONE

Basis: As Received

File Name: N4019

Sample Aliquot: 950 ml

Final Volume: 1 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: 115

## Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
118-79-6	2,4,6-TRIBROMOPHENOL	42.1		78.9	53	23 - 100
321-60-8	2-FLUOROBIPHENYL	30.8		52.6	58	21 - 106
367-12-4	2-FLUOROPHENOL	48		78.9	61	21 - 100
4165-60-0	NITROBENZENE-D5	30.4		52.6	58	34 - 111
4165-62-2	PHENOL-D5	45.5		78.9	58	15 - 104
1718-51-0	TERPHENYL-D14	39.5		52.6	75	33 - 111

Data Package ID: SV0805246-1

# GC/MS Semi-volatiles

## Method SW8270D

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: EX080602-2LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06/02/2008

Date Analyzed: 06/09/2008

Prep Method: SW3520C

Prep Batch: EX080602-2

QCBatchID: EX080602-2-2

Run ID: SV080609-1

Cleanup: NONE

Basis: N/A

File Name: N4015

Sample Aliquot: 1000 ml

Final Volume: 1 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
123-91-1	1,4-DIOXANE	60	44.8	10		75	30 - 130%
108-95-2	PHENOL	75	49.9	10		66	49 - 101%
95-57-8	2-CHLOROPHENOL	75	58.9	10		78	37 - 106%
106-46-7	1,4-DICHLOROBENZENE	50	34	10		68	32 - 98%
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	50	37	10		74	34 - 128%
120-82-1	1,2,4-TRICHLOROBENZENE	50	37.2	10		74	37 - 107%
59-50-7	4-CHLORO-3-METHYLPHENOL	75	59.9	10		80	47 - 111%
83-32-9	ACENAPHTHENE	50	34.2	10		68	47 - 108%
100-02-7	4-NITROPHENOL	75	48.3	20		64	21 - 119%
121-14-2	2,4-DINITROTOLUENE	50	35.1	10		70	51 - 118%
87-86-5	PENTACHLOROPHENOL	75	54.2	20		72	38 - 117%
129-00-0	PYRENE	50	41.9	10		84	49 - 128%

Data Package ID: SV0805246-1

Date Printed: Wednesday, June 25, 2008

Paragon Analytics

Page 1 of 2

LIMS Version: 6.163A

# GC/MS Semi-volatiles

## Method SW8270D

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: EX080602-2LCSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06/02/2008

Date Analyzed: 06/09/2008

Prep Method: SW3520C

Prep Batch: EX080602-2

QCBatchID: EX080602-2-2

Run ID: SV080609-1

Cleanup: NONE

Basis: N/A

File Name: N4016

Sample Aliquot: 1000 ml

Final Volume: 1 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
123-91-1	1,4-DIOXANE	60	45.9	10		77	50	2
108-95-2	PHENOL	75	50.4	10		67	40	1
95-57-8	2-CHLOROPHENOL	75	59	10		79	42	0
106-46-7	1,4-DICHLOROBENZENE	50	35	10		70	50	3
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	50	36.6	10		73	44	1
120-82-1	1,2,4-TRICHLOROBENZENE	50	37.5	10		75	42	1
59-50-7	4-CHLORO-3-METHYLPHENOL	75	57.9	10		77	35	3
83-32-9	ACENAPHTHENE	50	33.8	10		68	43	1
100-02-7	4-NITROPHENOL	75	50	20		67	48	3
121-14-2	2,4-DINITROTOLUENE	50	36.8	10		74	40	5
87-86-5	PENTACHLOROPHENOL	75	53.2	20		71	44	2
129-00-0	PYRENE	50	36	10		72	48	15

### Surrogate Recovery LCS/LCSD

CASNO	Target Analyte	Spike Added	LCS % Rec.	LCS Flag	LCSD % Rec.	LCSD Flag	Control Limits
118-79-6	2,4,6-TRIBROMOPHENOL	75	70		67		23 - 100
321-60-8	2-FLUOROBIPHENYL	50	73		75		21 - 106
367-12-4	2-FLUOROPHENOL	75	73		75		21 - 100
4165-60-0	NITROBENZENE-D5	50	76		77		34 - 111
4165-62-2	PHENOL-D5	75	74		75		15 - 104
1718-51-0	TERPHENYL-D14	50	78		70		33 - 111

Data Package ID: SV0805246-1

# Paragon Analytics

## Perchlorate Case Narrative

---

### NMED DOE Oversight Bureau

05.29.08-569(HWB MCOI-4)

**Order Number - 0805246**

1. This report consists of 1 water sample. The sample was received cool by Paragon on 05/31/2008. As prescribed by the method, the aqueous sample contained headspace upon receipt.
2. The sample was prepared and analyzed according to SW-846, 3rd Edition procedures, method SW6850 Revision 0 and PA SOP448R0.
3. The preparation batch included a method blank, laboratory control sample, matrix spike, and sample duplicate. Per method requirements, matrix QC was performed for this analysis. The following is a list of samples used for the matrix QC:

Sample ID	QC Type	Batch ID
0805246-1	MS	LM080609-1
0805246-1	DUP	LM080609-1

Similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

4. Matrix spike recoveries could not be accurately evaluated for perchlorate for sample 0805246-1. The concentration of perchlorate in the native sample was greater than four times that of the spike added. No control limits are applied in this case because the allowed variability in the percent recovery of the sample exceeds the concentration of the spike added and the spike recovery may not be accurate. The laboratory control sample indicates that the preparation and analysis were in control.

All remaining preparation QC were within the acceptance criteria.

5. The analytical batch included an initial calibration, an initial calibration verification and blank (ICV and ICB), continuing calibration verification (CCV) and Limit of Detection verifications (LODV). In addition, isotope ratios, relative retention times (RRT) and internal standards for each injection were monitored.
6. All analytical QC were within the acceptance criteria.

7. Sample dilutions were not required for the requested analyses.
8. The sample was prepared and analyzed within the established holding time.
9. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in Paragon Analytics Standard Operating Procedure 939 Revision 3.

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

Mindy Norton  
Mindy Norton  
Organics Primary Data Reviewer

6-23-08  
Date

Sandra S. Goff  
Organics Final Data Reviewer

6-24-08  
Date

***Paragon Analytics, Inc.***  
***Data Qualifier Flags***  
***Chromatography and Mass Spectrometry***

- U or ND:** This flag indicates that the compound was analyzed for but not detected.
- J:** This flag indicates an estimated value. This flag is used as follows : (1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the reporting limit (RL) but greater than the method detection limit (MDL); (3) when the data indicate the presence of a compound that meets the identification criteria, and the result is less than the RL but greater than the MDL; and (4) the reported value is estimated.
- B:** This flag is used when the analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user. This flag shall be used for a tentatively identified compound (TIC) as well as for a positively identified target compound.
- E:** This flag identifies compounds whose concentration exceeds the upper level of the calibration range.
- A:** This flag indicates that a tentatively identified compound is a suspected aldol-condensation product.
- X:** This flag indicates that the analyte was diluted below an accurate quantitation level.
- \***: This flag indicates that a spike recovery is outside the control criteria.
- +**: This flag indicates that the relative percent difference (RPD) exceeds the control criteria.

# Paragon Analytics

## Sample Number(s) Cross-Reference Table

---

**Paragon OrderNum:** 0805246

**Client Name:** NMED DOE Oversight Bureau

**Client Project Name:**

**Client Project Number:** 05.29.08-569(HWB MCOI-4)

**Client PO Number:** 06-667-55-01754

---

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
MCOI-4-5-29-08-CIO4	0805246-1		WATER	29-May-08	16:06
MCOI-4-5-29-08-MET	0805246-2		WATER	29-May-08	16:06
MCOI-4-5-29-08-VOC	0805246-3		WATER	29-May-08	16:06
MCOI-4-5-29-08-SVOC	0805246-4		WATER	29-May-08	16:06
MCOI-4-5-29-08-RAD	0805246-5		WATER	29-May-08	16:06



CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: NMED

Workorder No: 0805246

Project Manager: LS

Initials: CT Date: 5-31-08

1. Does this project require any <b>special handling</b> in addition to standard Paragon procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on <b>shipping containers</b> intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on <b>sample containers</b> intact?	NONE	<input checked="" type="radio"/> YES	NO
4. Is there a <b>COC (Chain-of-Custody)</b> present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the <b>COC and bottle labels</b> complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the <b>COC in agreement</b> with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were <b>airbills / shipping documents</b> present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous <b>samples requiring preservation</b> preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous <b>non-preserved samples</b> pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there <b>sufficient sample</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the <b>proper containers</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within <b>holding times</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received <b>intact?</b> (not broken or leaking, etc.)		YES	<input checked="" type="radio"/> NO
14. Are all samples requiring no headspace (VOC, GRO, Rx CN/S, radon), headspace free? Size of bubble: ___ < green pea ___ > green pea	<sup>at 531-01</sup> <input checked="" type="radio"/> N/A	<input checked="" type="radio"/> YES	NO
15. Were samples checked for and free from the presence of <b>residual chlorine?</b> (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	<input checked="" type="radio"/> N/A	YES	NO
16. Were the samples <b>shipped on ice?</b>		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #2 <input checked="" type="radio"/> #4	RAD ONLY	<input checked="" type="radio"/> YES NO
Cooler #: <u>9531-01</u>			
Temperature (°C): <u>3.2</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>18</u>			
Background µR/hr reading: <u>13</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no. see Form 008.)			

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

The lids on the 1 Liter Amber bottles were received broken, it didn't appear that anything leaked. The lids were replaced with new ones.

*Noted for*

If applicable, was the client contacted?  YES / NO / NA Contact: K. Grant Date/Time: \_\_\_\_\_

Project Manager Signature / Date: [Signature] 6/2/08

\*IR Gun #2: Oakton, SN 29922500201-0066

\*IR Gun #4: Oakton, SN 2372220101-0002

8604 4512 4081

0200

Form ID No.

080246

From **8-30** Sender's FedEx Account Number

Sender's Name **Michael Dale** Phone **505 672-0440**

Company **DAVID DOE JR**

Address **194 State Road 4 Suite A**

City **Albuquerque** State **NM** ZIP **87544**

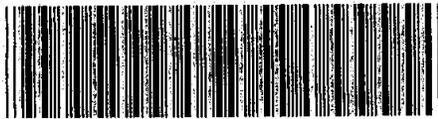
Your Internal Billing Reference **25,29,58 - 529 HWB MKSI - 4)**

To Recipient's Name **Lance Stieve** Phone **970 490-1511**

Company **Paragon Analytics**

Recipient's Address **225 Commerce Dr.**

Address **Ft. Collins** State **CO** ZIP **70504**



8604 4512 4081

3.2

**4a Express Package Service**

- 1** FedEx Priority Overnight  
Next business morning. \* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 3** FedEx 2Day  
Second business day. \* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 5** FedEx Standard Overnight  
Next business afternoon. \* Saturday Delivery NOT available.
- 20** FedEx Express Saver  
Third business day. \* Saturday Delivery NOT available.
- 6** FedEx First Overnight  
Earliest next business morning delivery to select locations. \* Saturday Delivery NOT available.

**4b Express Freight Service**

- 7** FedEx 1Day Freight\*  
Next business day. \*\* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 8** FedEx 2Day Freight  
Second business day. \*\* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 83** FedEx 3Day Freight  
Third business day. \*\* Saturday Delivery NOT available.

**5 Packaging**

- 6** FedEx Envelope\*
- 2** FedEx Pak\*  
Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- 3** FedEx Box
- 4** FedEx Tube
- 1** Other

**6 Special Handling**

- 31** SATURDAY Delivery  
Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- HOLD Weekday at FedEx Location**  
Not available for FedEx First Overnight.
- 31** HOLD Saturday at FedEx Location  
Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.
- 4** Yes  
As per attached Shipper's Declaration.
- 4** No
- 6** Dry Ice  
Dry ice, 3 UN 1845
- 31** CARGO AIRCRAFT ONLY

**7 Payment Bill to:**

- 1** Sender Acct. No. in Section 1 will be billed.
- 2** Recipient
- 3** Third Party
- 4** Credit Card
- 5** Cash/Check

Total Packages	Total Weight	Total Charges
1	44	

\*Our liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

**8 NEW Residential Delivery Signature Options**

- No Signature Required**  
Package may be left without obtaining a signature for delivery.
- 10** Direct Signature  
Anyone at recipient's address may sign for delivery. Fee applies.
- 34** Indirect Signature  
If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. Fee applies.

**520**

# Perchlorates by LCMS/MS

Method SW6850

Method Blank

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: LM080609-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 09-Jun-08

Date Analyzed: 09-Jun-08

Prep Method: METHOD

Prep Batch: LM080609-1

QCBatchID: LM080609-1-1

Run ID: LM080609-1A

Cleanup: NONE

Basis: N/A

File Name: PERC060908

Sample Aliquot: 2 ml

Final Volume: 2 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
14797-73-0	PERCHLORATE	1	0.05	0.05	U	

Data Package ID: LM0805246-1

Date Printed: Monday, June 23, 2008

Paragon Analytics

Page 1 of 1

LIMS Version: 6.162A

# PERCHLORATE

## Method SW6850

### Sample Results

**Lab Name:** Paragon Analytics  
**Client Name:** NMED DOE Oversight Bureau  
**Client Project ID:** 05.29.08-569(HWB MCOI-4)  
**Work Order Number:** 0805246  
**Reporting Basis:** As Received  
**Prep Method:** METHOD

**Final Volume:** 2 ml  
**Matrix:** WATER  
**Result Units:** UG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
MCOI-4-5-29-08-CIO4	0805246-1	05/29/2008	06/09/2008	06/09/2008	N/A	1	97	0.05		2 ml

#### Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** LM0805246-1

# Perchlorates by LCMS/MS

Method SW6850

## Duplicate Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID: MCOI-4-5-29-08-CIO4

Lab ID: 0805246-1D

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 05/29/2008

Date Extracted: 06/09/2008

Date Analyzed: 06/09/2008

Prep Batch: LM080609-1

QC Batch ID: LM080609-1-1

Run ID: LM080609-1A

Cleanup: NONE

Basis: As Received

File Name: PERC060908

Sample Aliquot: 2 ml

Final Volume: 2 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Sample Result	Samp Qual	Duplicate Result	Dup Qual	Reporting Limit	Dilution Factor	RPD	RPD Limit
14797-73-0	PERCHLORATE	97		95.6		0.05	1	1	15

Data Package ID: LM0805246-1

Date Printed: Monday, June 23, 2008

Paragon Analytics

LIMS Version: 6.162A

Page 1 of 1

# Perchlorates by LCMS/MS

Method SW6850

## Laboratory Control Sample

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Lab ID: LM080609-1LCS	Sample Matrix: WATER	Prep Batch: LM080609-1	Sample Aliquot: 2 ml
	% Moisture: N/A	QC Batch ID: LM080609-1-1	Final Volume: 2 ml
	Date Collected: N/A	Run ID: LM080609-1A	Result Units: UG/L
	Date Extracted: 06/09/2008	Cleanup: NONE	Clean DF: 1
	Date Analyzed: 06/09/2008	Basis: N/A	
	Prep Method: METHOD	File Name: PERC060908	

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
14797-73-0	PERCHLORATE	1	1.03	0.05		103	80 - 120%

Data Package ID: LM0805246-1

# Perchlorates by LCMS/MS

Method SW6850

Matrix Spike

Lab Name: Paragon Analytics

Work Order Number: 0805246

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 05.29.08-569(HWB MCOI-4)

Field ID:	MCOI-4-5-29-08-CIO4
LabID:	0805246-1MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 29-May-08

Date Extracted: 09-Jun-08

Date Analyzed: 09-Jun-08

Prep Batch: LM080609-1

QCBatchID: LM080609-1-1

Run ID: LM080609-1A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 2 ml

Final Volume: 2 ml

Result Units: UG/L

File Name: PERC060908

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
14797-73-0	PERCHLORATE	97		96.7	*	0.05	1		80 - 120%

Data Package ID: LM0805246-1

Date Printed: Monday, June 23, 2008

Paragon Analytics

LIMS Version: 6.162A

Page 1 of 1