

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0007162

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: 7.10.00-157 (SW) ✓

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
SR 501 POND	0007162-1		WATER	5/25/00	12:15
PA-10.6	0007162-2		WATER	5/25/00	10:30

Paragon Analytics, Inc. -- Fort Collins, Colorado
CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: NMED PROJECT MANAGER: Lance
 WORKORDER NO: 0005187 INITIALS: MB DATE: 5-30-00

1. Does this project require any special handling in addition to standard Paragon procedures? IS PRE-SCREENING REQUIRED? (radiochemistry, DOE, etc.)		Yes	<input checked="" type="radio"/> No
2. Are custody seals provided on the cooler? If so, how many _____	<input checked="" type="radio"/> N/A	Yes	No
3. Are the custody seals on sample containers intact?	N/A	<input checked="" type="radio"/> Yes	No
4. Is there a Chain-of-Custody (COC) or other representative documents, letters, or shipping memos?		<input checked="" type="radio"/> Yes	No
5. Is the COC complete? Relinquished: Yes <input checked="" type="checkbox"/> No _____ Analyses Requested: Yes <input checked="" type="checkbox"/> No _____	N/A	<input checked="" type="radio"/> Yes	No
6. Is the COC in agreement with the samples received? No. of Samples: Yes <input checked="" type="checkbox"/> No _____ Sample ID's: Yes <input checked="" type="checkbox"/> No _____ Matrix: Yes <input checked="" type="checkbox"/> No _____ No. of Containers: Yes <input checked="" type="checkbox"/> No _____	N/A	<input checked="" type="radio"/> Yes	No
7. Were COC (if applicable) and sample labels legible?		<input checked="" type="radio"/> Yes	No
8. Were airbills present and/or removable?		<input checked="" type="radio"/> Yes	No
9. Are all aqueous samples requiring chemical preservation preserved correctly (excluding volatile organics)? Are all aqueous non-preserved samples at the correct pH?	N/A	<input checked="" type="radio"/> Yes	No
10. Is there enough sample for requested analyses? If so, were samples placed in the proper containers?		<input checked="" type="radio"/> Yes	No
11. Are all samples within holding times for the requested analyses?		Yes	<input checked="" type="radio"/> No
12. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> Yes	No
13. Are samples requiring no headspace (volatiles, reactive cyanide/sulfide), headspace free? Size of bubble ___ < green pea; ___ > green pea (List sample IDs and affected containers on Page 2)	<input checked="" type="radio"/> N/A	Yes	No
14. Is Paragon to dispose of samples?		<input checked="" type="radio"/> Yes	No
15. Were the sample(s) shipped on ice?	N/A	<input checked="" type="radio"/> Yes	No
16. Were cooler temperatures measured at 2 - 6 °C ?	N/A	Yes	<input checked="" type="radio"/> No
17. Were all samples cooled that should have been cooled?		<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> No

Cooler #'s _____
 Temperature 17° _____ °C
 Project Manager Signature / Date: [Signature] 5/31/00

**A NO RESPONSE TO ANY QUESTION (EXCEPT # 1 and #14)
 REQUIRES THE COMPLETION OF PAGE 2 OF THIS FORM**

Paragon Analyticals, Inc. - Full Chain-of-Custody Services
CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: NMED PROJECT MANAGER: hance
 WORKORDER NO: 0005187 INITIALS: MB DATE: 5-30-00

- Custody seals on outside of shipping container broken.
- Custody seals on sample containers were broken.
- No Chain-of-Custody (COC) present.
- Number of samples on the COC do not match the number of samples received.
- Aqueous samples not preserved correctly (see pH discussion below).
- Samples received at inappropriate temperature. ①
- Insufficient sample to perform requested analyses.
- Extraction or analytical holding times expired in transit. ②
- Broken/leaking bottles and intact bottles received in same cooler (list affected sample IDs below)
- No analyses requested.
- Incorrect sample type received.
- VOAs not headspace free (list sample IDs and affected vials below)
- Airbills not present and/or removable (record applicable shipper's tracking number below)
- Other

Describe discrepancy:

① All samples received with temperature at 17°C
 ② ~~The anion analyses are out hold for selected~~
~~anions (NO₃, NO₂)~~ *No: see H₂O₂ pres. contn. given*
25 & bill

Was the client contacted? ___ No; Yes: Name NMD Date/Time _____

Was the pH of any sample adjusted by the laboratory? ___ No; ___ Yes (see Table below):

NOTE: No pH adjustments are to be made without prior consent of Project Manager.

Sample ID	Initial pH	Final pH	Type of Reagent Used	Lot No. of Reagent Used	Initials / Date

Project Manager Signature / Date: _____

28

100

FedEx USA Airbill

FedEx Tracking Number

8157 3793 6007

1 From

Date 5-23-00

FedEx Tracking Number

815737936007

Sender's Name

Michael Dole

Phone

505 672-0443

Company

NEW MEXICO ENVIRONMENT SVCS

Address

104 STATE ROAD 4 STE A

State

NM

ZIP

81544

City

WHITE ROCK

2 Your Internal Billing Reference

Phone

505 443-1511

3 To Recipient's Name

Lance Storer

Company

Parragon Analytics, Inc.

Address

225 Commerce Drive

We cannot deliver to PO boxes or PO ZIP codes

State

CO

ZIP

80524

To 'HOLD' at FedEx location, print FedEx address here

City

Fort Collins

8157 3793 6007



0215

Recipient Copy

4a Express Package Service

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business afternoon

FedEx First Overnight
Earliest next business morning delivery to select locations

Packages up to 150 lbs.
Delivery commitment may be later in some areas

FedEx 2DaySM
Second business day

FedEx Express SaverSM
Third business day

* FedEx Letter Bags not available
Minimum charge: One pound rate

Packages over 150 lbs.
Delivery commitment may be later in some areas

FedEx 1Day FreightSM
Next business day

FedEx 2Day Freight
Second business day

FedEx 3Day Freight
Third business day

5 PackagesSM

FedEx PakSM

* Declared value limit \$500

Other Pkg
Includes FedEx Box, FedEx Tube, and customer pkg

6 Special Handling

Saturday Delivery
Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes

Sunday Delivery
Available for FedEx Priority Overnight to select ZIP codes

HOLD Weekday at FedEx Location
Not available with FedEx First Overnight

HOLD Saturday at FedEx Location
Available for FedEx Priority Overnight and FedEx 2Day in select locations

Does this shipment contain dangerous goods?
This box uses the check box

No

Yes
As per attached Shipper's Declaration

Yes
Shipper's Declaration not required

Dry Ice
Dry Ice, 3 URI 1945

Cargo Aircraft Only

Dangerous Goods cannot be shipped in FedEx packaging

7 Payment Bill to:

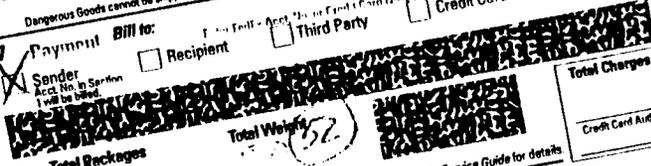
Sender
Acct. No. in Section 1 will be billed

Recipient

Third Party

Credit Card

Cash/Check



Total Packages

Total Weight 32

Total Charges

Credit Card Auth.

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

8 Release Signature

Sign to authorize delivery without obtaining a signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims

Questions? Call 1-800-Go-FedEx (800 463 3339)
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Paragon Analytics, Inc.

TOTAL RECOVERABLE METALS CASE NARRATIVE

NMED DOE Oversight Bureau

7.10.00-157 (SW)

Order Number - 0007162

1. This report consists of 2 water samples.
2. The samples were received intact on 05/30/00. The temperature of the samples upon receipt was 17° Celsius.
3. The samples had been preserved for the requested analyses.
4. The samples were prepared for analysis based on SW-846, 3rd Edition procedures. For analysis by Trace and conventional ICPs, the samples were digested following method 3005A and PAI SOP 806 Rev. 5.
5. The samples were analyzed following SW-846, 3rd Edition procedures. Analysis by Trace ICP followed method 6010B and PAI SOP 807 Rev. 4.

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

$$I = A_0 + (A_1 * c^n) + (A_2 * c^{2n})$$

where: I = intensity
c = concentration
A₀ = offset coefficient
A₁ = gain coefficient
A₂ = curvature coefficient
n = exponent coefficient

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 2nd 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 conventional ICP followed method 6010B and PAI SOP 805 Rev. 1.

Calibration of the conventional ICP is performed as described above for the Trace ICP.

6. All standards and solutions are NIST traceable and were used within their recommended shelf life.
 7. The samples were 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 this digestion batch. There were not more than 20 samples in the digestion batch.
 - The preparation (method) blank results associated with this batch were below the reporting limits for the requested analytes. This indicates that no contaminants were introduced to the samples during the digestion procedure.
 - The laboratory control sample associated with this batch was within the acceptance limits. This indicates complete digestion according to the method.
 - All initial and continuing calibration blanks associated with this batch were below the reporting limits for the requested analytes. This indicates a valid calibration and stable instrument conditions.
 - All initial and continuing calibration verifications associated with this batch were within the acceptance criteria for the requested analytes. This indicates a valid calibration and stable instrument conditions.
 - The interference check samples, and high standard readbacks associated with Method 6010B analyses were within acceptance criteria.
 9. PAI sample ID 0005141-1 was designated as the QC sample for these analyses.
 - A matrix spike and matrix spike duplicate were digested and analyzed with this batch. All acceptance criteria for accuracy were met.
 - A sample duplicate and spike duplicate were digested and analyzed with this batch. All acceptance criteria for precision were met.

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



10. Sample dilutions were not required for the requested analyses.



The data contained in the following report have been reviewed and approved by the personnel listed below:

Darryl Patrick
Darryl Patrick
Senior Inorganic Chemist

8/14/00
Date

SW
Reviewer's Initials

8/14/00
Date

CERTIFICATION

Paragon Analytical, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0007162

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: 7.10.00-157 (SW)

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
SR 501 POND	0007162-1		WATER	5/25/00	12:15
PA-10.6	0007162-2		WATER	5/25/00	10:30

Inorganic Data Reporting Qualifiers

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

- Result qualifier -- 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 6010B analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than 4 times the spike added concentration.
 - * - Duplicate analysis (relative percent difference) not within control limits.

Dissolved ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 0007162

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 7.10.00-157 (SW)

Field ID: SR 501 POND	Sample Matrix: WATER	Prep Batch: IP000605-4B	Sample Aliquot: 50 G
Lab ID: 0007162-1	% Moisture: N/A	QCBatchID: IP000605-4B-1	Final Volume: 50 G
	Date Collected: 25-May-00	Run ID: IT000606-2A1	Result Units: MG/L
	Date Extracted: 05-Jun-00	Cleanup: NONE	
	Date Analyzed: 06-Jun-00	Basis: As Received	File Name: TS00606

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	0.2	0.2	U	
7440-70-2	CALCIUM	1	36	1		

Data Package ID: IT0007162-1

Dissolved ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 0007162

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 7.10.00-157 (SW)

Field ID: PA-10.6
Lab ID: 0007162-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 25-May-00
Date Extracted: 05-Jun-00
Date Analyzed: 06-Jun-00

Prep Batch: IP000605-4B
QCBatchID: IP000605-4B-1
Run ID: IT000606-2A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 G
Result Units: MG/L

File Name: TS00606

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	0.26	0.2		
7440-70-2	CALCIUM	1	37	1		

Data Package ID: IT0007162-1

Dissolved ICP Metals

Method SW6010 Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 0007162

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 7.10.00-157 (SW)

Field ID: SR 501 POND
Lab ID: 0007162-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 25-May-00

Date Extracted: 05-Jun-00

Date Analyzed: 09-Jun-00

Prep Batch: IP000605-4B

QC Batch ID: IP000605-4B-1

Run ID: IP000609-2A1

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 G

Final Volume: 50 G

Result Units: MG/L

File Name: IS00609

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	0.1	0.1	U	
7440-24-6	STRONTIUM	1	0.28	0.01		

Data Package ID: IP0007162-1

Dissolved ICP Metals

Method SW6010 Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 0007162

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 7.10.00-157 (SW)

Field ID:	PA-10.6
Lab ID:	0007162-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 25-May-00

Date Extracted: 05-Jun-00

Date Analyzed: 09-Jun-00

Prep Batch: IP000605-4B

QC Batch ID: IP000605-4B-1

Run ID: IP000609-2A1

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 G

Final Volume: 50 G

Result Units: MG/L

File Name: IS00609

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	0.1	0.1	U	
7440-24-6	STRONTIUM	1	0.29	0.01		

Data Package ID: IP0007162-1

ICP Metals

Method SW6010

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 0007162

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 7.10.00-157 (SW)

Lab ID: F000531-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06/05/2000

Date Analyzed: 06/06/2000

Prep Batch: IP000605-4B

QCBatchID: IP000605-4B-1

Run ID: IT000606-2A1

Cleanup: NONE

Basis: N/A

Sample Aliquot: 50 G

Final Volume: 50 G

Result Units: MG/L

File Name: TS00606

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	0.2	0.2	U	
7440-70-2	CALCIUM	1	1	1	U	

Data Package ID: IT0007162-1

ICP Metals

Method SW6010

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 0007162

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 7.10.00-157 (SW)

Field ID: SHARED QC	Sample Matrix: WATER	Prep Batch: IP000605-4B	Sample Aliquot: 50 G
LabID: 0005141-1MS	% Moisture: N/A	QCBatchID: IP000605-4B-1	Final Volume: 50 G
	Date Collected: 18-May-00	Run ID: IT000606-2A1	Result Units: MG/L
	Date Extracted: 05-Jun-00	Cleanup: NONE	
	Date Analyzed: 06-Jun-00	Basis: As Received	

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7429-90-5	ALUMINUM	0.78		2.7		0.2	2	96	80 - 120%
7440-70-2	CALCIUM	39		78		1	40	97	80 - 120%

MSD Lab ID: 0005141-1MSD

CASNO	Target Analyte	Spike Added	MSD Result	MSD Qual	Reporting Limit	MSD % Rec.	RPD	RPD Limits
7429-90-5	ALUMINUM	2	2.76		0.2	99	2	20
7440-70-2	CALCIUM	40	78.5		1	99	1	20

Data Package ID: IT0007162-1

00012

ICP Metals

Method SW6010

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 0007162

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 7.10.00-157 (SW)

Lab ID: F000531-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06/05/2000

Date Analyzed: 06/09/2000

Prep Batch: IP000605-4B

QC Batch ID: IP000605-4B-1

Run ID: IP000609-2A1

Cleanup: NONE

Basis: N/A

Sample Aliquot: 50 G

Final Volume: 50 G

Result Units: MG/L

File Name: IS00609

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	0.1	0.1	U	
7440-24-6	STRONTIUM	1	0.01	0.01	U	

Data Package ID: IP0007162-1

ICP Metals

Method SW6010

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 0007162

Client Name: NMED DOE Oversight Bureau

ClientProject ID: 7.10.00-157 (SW)

Field ID: SHARED QC

LabID: 0005141-1MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 18-May-00

Date Extracted: 05-Jun-00

Date Analyzed: 09-Jun-00

Prep Batch: IP000605-4B

QCBatchID: IP000605-4B-1

Run ID: IP000609-2A1

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 G

Final Volume: 50 G

Result Units: MG/L

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-42-8	BORON	0.51		1.49		0.1	1	91	80 - 120%
7440-24-6	STRONTIUM	0.3		0.796		0.01	0.5	99	80 - 120%

MSD Lab ID: 0005141-1MSD

CASNO	Target Analyte	Spike Added	MSD Result	MSD Qual	Reporting Limit	MSD % Rec.	RPD	RPD Limits
440-42-8	BORON	1	1.51		0.1	100	1	20
7440-24-6	STRONTIUM	0.5	0.806		0.01	101	1	20

Data Package ID: IP0007162-1