

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax: (303)894-2109



DOCUMENT
#2214720

SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

RECEIVED
6/29/2011

| | | |
|--|---|--|
| 1. OGCC Operator Number: 10310 | 4. Contact Name: Harold Mayland | Complete the Attachment Checklist OP OGCC |
| 2. Name of Operator: Fram Operating LLC | Phone: 303.550.1098 | |
| 3. Address: 30 E Pikes Peak Ave. Ste. 287 City: Colorado Springs State: CO Zip: 80903 | Fax: NA | |
| 5. API Number 05-077-09474 | OGCC Facility ID Number 312744 | Survey Plat |
| 6. Well/Facility Name: Mansur #33-4-C | 7. Well/Facility Number: Mansur #33-4-C | Directional Survey |
| 8. Location (Qtr/Sec, Twp, Rng, Meridian): SENE, Sec. 33, T12S, R97W, 6PM | | Surface Eqpm Diagram |
| 9. County: Mesa | 10. Field Name: Wildcat - #99999 | Technical Info Page |
| 11. Federal, Indian or State Lease Number: NA | | Other |

General Notice

| | |
|--|---|
| <input type="checkbox"/> CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit) | |
| Change of Surface Footage from Exterior Section Lines: | <input type="checkbox"/> FNL/FSL <input type="checkbox"/> FEL/FWL |
| Change of Surface Footage to Exterior Section Lines: | <input type="checkbox"/> <input type="checkbox"/> |
| Change of Bottomhole Footage from Exterior Section Lines: | <input type="checkbox"/> <input type="checkbox"/> |
| Change of Bottomhole Footage to Exterior Section Lines: | <input type="checkbox"/> attach directional survey |
| Bottomhole location Qtr/Sec, Twp, Rng, Mer | |
| Latitude | Distance to nearest property line |
| Longitude | Distance to nearest lease line |
| Ground Elevation | Distance to nearest well same formation |
| Distance to nearest bldg, public rd, utility or RR | |
| Is location in a High Density Area (rule 603b)? Yes/No | |
| Surface owner consultation date: | |
| GPS DATA: | |
| Date of Measurement PDOP Reading Instrument Operator's Name | |
| <input type="checkbox"/> CHANGE SPACING UNIT | |
| Formation | Formation Code |
| Spacing order number | Unit Acreage |
| Unit configuration | |
| <input type="checkbox"/> Remove from surface bond | |
| Signed surface use agreement attached | |
| <input type="checkbox"/> CHANGE OF OPERATOR (prior to drilling): | |
| Effective Date: | |
| Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual | |
| <input type="checkbox"/> CHANGE WELL NAME | |
| From: | NUMBER |
| To: | |
| Effective Date: | |
| <input type="checkbox"/> ABANDONED LOCATION: | |
| Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Is site ready for inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Date Ready for Inspection: | |
| <input type="checkbox"/> NOTICE OF CONTINUED SHUT IN STATUS | |
| Date well shut in or temporarily abandoned: | |
| Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| MIT required if shut in longer than two years. Date of last MIT | |
| <input type="checkbox"/> SPUD DATE: | |
| <input type="checkbox"/> REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set) | |
| <input type="checkbox"/> SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK | |
| *submit cbl and cement job summaries | |
| Method used | Cementing tool setting/perf depth |
| Cement volume | Cement top |
| Cement bottom | Date |
| <input type="checkbox"/> RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004. | |
| Final reclamation will commence on approximately | |
| <input type="checkbox"/> Final reclamation is completed and site is ready for inspection. | |

Technical Engineering/Environmental Notice

| | | |
|---|---|--|
| <input checked="" type="checkbox"/> Notice of Intent | | <input type="checkbox"/> Report of Work Done |
| Approximate Start Date: Upon COGCC Approval | | Date Work Completed: |
| Details of work must be described in full on Technical Information Page (Page 2 must be submitted.) | | |
| <input type="checkbox"/> Intent to Recomplete (submit form 2) | <input type="checkbox"/> Request to Vent or Flare | <input type="checkbox"/> E&P Waste Disposal |
| <input type="checkbox"/> Change Drilling Plans | <input type="checkbox"/> Repair Well | <input checked="" type="checkbox"/> Beneficial Reuse of E&P Waste |
| <input type="checkbox"/> Gross Interval Changed? | <input checked="" type="checkbox"/> Rule 502 variance requested | <input type="checkbox"/> Status Update/Change of Remediation Plans |
| <input type="checkbox"/> Casing/Cementing Program Change | <input checked="" type="checkbox"/> Other: Background Arsenic | for Spills and Releases |

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: Date: 6/29/2011 Email: tdobransky@oaconsulting.com
Print Name: Tim Dobransky Title: Project Manager

COGCC Approved: Title: Date:
CONDITIONS OF APPROVAL, IF ANY:

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

1. OGCC Operator Number: _____ API Number: _____

2. Name of Operator: _____ OGCC Facility ID # _____

3. Well/Facility Name: _____ Well/Facility Number: _____

4. Location (QtrQtr, Sec, Twp, Rng, Meridian): _____

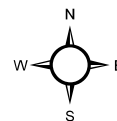
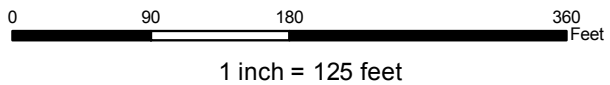
This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5.

DESCRIBE PROPOSED OR COMPLETED OPERATIONS



- ★ Mansur 33-4-C
- Sample Locations
- Approximate Pad Perimeter



| | | | | |
|-------------|---------------|--|---|--------|
| PROJECT NO: | 010-2337 | MANSUR 33-4-C PAD BACKGROUND SAMPLE LOCATION FRAM OPERATING LLC MESA COUNTY, COLORADO |  <div> 826 21-1/2 ROAD GRAND JUNCTION, CO 81505 TEL 970.263.7800 </div> | FIGURE |
| DRAWN BY: | Brian Swedhin | | | 1 |
| DATE: | 6/29/2011 | | | |

Table 1
Mansur Wells Cuttings Sample
Data Summary

| SAMPLE SUMMARY | | | | | | | | |
|----------------------|--|------------------------------|--|--|--|--|--|--|
| Location Description | | Mansur Wells Cuttings Sample | | | | | | |
| Sample Type | | Soil | | | | | | |

| LABORATORY DATA SUMMARY | | | | | | | | |
|--|---------------|------------|-----------|-----------|-----------|-----------|-------------------------|----------|
| Sample ID | M-Cutt Smpl 1 | M-BG1 | BG2-M | BG3-M | BG4-M | BG5-M | ALLOWABLE LIMITS | UNITS |
| Sample Date | 10/27/2010 | 10/27/2010 | 1/17/2011 | 1/17/2011 | 1/17/2011 | 1/17/2011 | | |
| Analytical Parameters | | | | | | | | |
| TPH | | | | | | | | |
| TPH Gasoline Range Organics | <25.0 | NT | NT | NT | NT | NT | 500 | mg/kg |
| TPH Diesel Range Organics | <25.0 | NT | NT | NT | NT | NT | | |
| BTEX | | | | | | | | |
| Benzene | 0.00240 | NT | NT | NT | NT | NT | 0.17 | mg/kg |
| Toluene | 0.00536 | NT | NT | NT | NT | NT | 85 | mg/kg |
| Ethylbenzene | <0.00200 | NT | NT | NT | NT | NT | 100 | mg/kg |
| m,p-Xylene | 0.00724 | NT | NT | NT | NT | NT | 175 | mg/kg |
| o-Xylene | 0.00656 | NT | NT | NT | NT | NT | 175 | mg/kg |
| Metals | | | | | | | | |
| Chromium, Hexavalent | <0.221 | <0.117 | NT | NT | NT | NT | 23 | mg/kg |
| Mercury | 0.026 | 0.015 | NT | NT | NT | NT | 23 | mg/kg |
| Arsenic | 5.29 | 3.37 | 5.4 | 6.0 | 4.7 | 4.9 | 0.39 | mg/kg |
| Barium | 166 | 159 | NT | NT | NT | NT | 15,000 | mg/kg |
| Boron | 13.3 | 6.28 | NT | NT | NT | NT | NA | mg/kg |
| Cadmium | 0.505 | 0.223 | NT | NT | NT | NT | 70 | mg/kg |
| Chromium | 17.2 | 13.7 | NT | NT | NT | NT | 120,000 | mg/kg |
| Copper | 26.4 | 13.4 | NT | NT | NT | NT | 3,100 | mg/kg |
| Lead | 14.9 | 10.6 | NT | NT | NT | NT | 400 | mg/kg |
| Nickel | 23.3 | 23.1 | NT | NT | NT | NT | 1,600 | mg/kg |
| Selenium | 2.59 | <0.725 | NT | NT | NT | NT | 390 | mg/kg |
| Silver | <1.57 | <0.83 | NT | NT | NT | NT | 390 | mg/kg |
| Zinc | 68.7 | 45.8 | NT | NT | NT | NT | 23,000 | mg/kg |
| Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Anthracene | <0.077 | NT | NT | NT | NT | NT | 1,000 | mg/kg |
| Acenaphthene | <0.049 | NT | NT | NT | NT | NT | 1,000 | mg/kg |
| Benzo(a)anthracene | <0.062 | NT | NT | NT | NT | NT | 0.22 | mg/kg |
| Benzo(a)pyrene | <0.055 | NT | NT | NT | NT | NT | 0.022 | mg/kg |
| Benzo(b)fluoranthene | <0.044 | NT | NT | NT | NT | NT | 0.22 | mg/kg |
| Benzo(k)fluoranthene | <0.073 | NT | NT | NT | NT | NT | 2.2 | mg/kg |
| Chrysene | <0.051 | NT | NT | NT | NT | NT | 22 | mg/kg |
| Dibenzo(a,h)anthracene | <0.06 | NT | NT | NT | NT | NT | 0.022 | mg/kg |
| Fluoranthene | <0.084 | NT | NT | NT | NT | NT | 1,000 | mg/kg |
| Fluorene | <0.051 | NT | NT | NT | NT | NT | 1,000 | mg/kg |
| Indeno(1,2,3-cd)pyrene | <0.075 | NT | NT | NT | NT | NT | 0.22 | mg/kg |
| Napthalene | <0.046 | NT | NT | NT | NT | NT | 23 | mg/kg |
| Pyrene | <0.073 | NT | NT | NT | NT | NT | 1,000 | mg/kg |
| General Chemistry | | | | | | | | |
| pH | 8.93 | 8.29 | NT | NT | NT | NT | 6-9 | su |
| Sodium Adsorption Ratio | 8.43 | 0.136 | NT | NT | NT | NT | <12 | NA |
| Specific Conductance | 6.59 | 0.219 | NT | NT | NT | NT | 4 or 2 x the background | mmhos/cm |

mg/kg - milligrams per kilogram
NT - parameter was not tested
mmhos/cm - millimhos per centimeter
su - standard units
NA - not applicable

Over allowable limit but under BACKGROUND level.
Over allowable limit and not within BACKGROUND level

11/11/2010

Olsson Associates

Tim Dobransky

826 21 1/2 Road

Grand Junction

CO

81505

Project Name- Mansur Wells

Project Number- 010-2337

Attached are your analytical results for Mansur Wells received by Origins Laboratory, Inc. October 28, 2010 9:00 am. This project is associated with Origins project number X010243-01 .

The analytical results in the following report were analyzed under the guidelines of EPA Methods specified in SW-846. The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all,

Origins Laboratory, Inc.

303.433.1322

o-squad@oelabinc.com



Olsson Associates

826 21 1/2 Road

Grand Junction CO

81505

Tim Dobransky

Project Number: 010-2337

Project: Mansur Wells

CROSS REFERENCE REPORT

| Sample ID | Laboratory ID | Matrix | Sampled | Date Received |
|---------------|---------------|--------|----------------------|------------------|
| M-BG1 | X010243-01 | Soil | 10/27/2010 1:30:00PM | 10/28/2010 09:00 |
| M-Cutt Smpl 1 | X010243-02 | Soil | 10/27/2010 2:00:00PM | 10/28/2010 09:00 |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Noelle E Doyle,

Olsson Associates

826 21 1/2 Road

Grand Junction CO

81505

Tim Dobransky

Project Number: 010-2337

Project: Mansur Wells

www.originslaboratory.com

page 1 of 1

X010243

ORIGINS
LABORATORY, INC

Project Manager: Tim Dobransky
Project Name: Mansur Wells
Project Number: 010-2337
Samples Collected By: JESS VANN

Client: OLSSON ASSOCIATES
Address: 826 21 1/2 RD
GRAND JCT, CO 81505
Telephone Number: 970 263-7800 X 2002
Email Address: tdobransky@oliconsulting.com

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

| Sample ID Description | Date Sampled | Time Sampled | # of Containers | Preservative | | | | Matrix | | | Analysis | Sample Instructions |
|-----------------------|--------------|--------------|-----------------|--------------|-----|------------------|-------|-------------|------|----------------------|--------------------------------------|---------------------|
| | | | | Unpreserved | HCl | HNO ₃ | Other | Groundwater | Soil | Air Summa Canister # | | |
| M-136 L | 10-27-10 | 1330 | 2 | X | | | | | | | TAKEN FROM THE 910' SOILS LIST. | 1 |
| M-147T Smp1 | 10-27-10 | 1400 | 5 | X | | | | | | | 910 LIST - ALL SOILS, ES, PH, METALS | 2 |
| | | | | | | | | | | | | 3 |
| | | | | | | | | | | | | 4 |
| | | | | | | | | | | | | 5 |
| | | | | | | | | | | | | 6 |
| | | | | | | | | | | | | 7 |
| | | | | | | | | | | | | 8 |
| | | | | | | | | | | | | 9 |
| | | | | | | | | | | | | 10 |

Relinquished By: Jess Vann Date: 10-27-10 Time: 1700
Received By: Fed Ex Date: 10-28-10 Time: 9:00

Turnaround Time: Same Day 200% 24 Hr 100% 48 Hr 50% 72 Hr 25% Standard

Date Results Needed

Origins Laboratory, Inc.

Noelle E Doyle

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

M-BG1**10/27/2010 1:30:00PM**

| Analyte | Result | Minimum Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Notes |
|---------|--------|----------------------------|--------------------|-------|----------|-------|----------|----------|-------|
|---------|--------|----------------------------|--------------------|-------|----------|-------|----------|----------|-------|

XENCO**X010243-01 (Soil)****Conductivity by E120.1**

| | | | | | | | | |
|--------------|-----|---|---|-------|---|--------|------------|------------|
| Conductivity | 219 | 1 | 2 | US/CM | 1 | 829880 | 11/01/2010 | 11/01/2010 |
|--------------|-----|---|---|-------|---|--------|------------|------------|

Metals by SW6010B

| | | | | | | | | |
|-----------|-------|-------|-------|-------|----|--------|------------|------------|
| Lead | 10.6 | 0.55 | 1.17 | mg/kg | 1 | 830512 | 11/01/2010 | 11/03/2010 |
| Zinc | 45.8 | 1.75 | 3.51 | " | " | " | " | " |
| Sodium | 126 | 2.69 | 58.5 | " | " | " | " | " |
| Silver | ND | 0.83 | 2.34 | " | " | " | " | " |
| Selenium | ND | 0.725 | 3.51 | " | " | " | " | " |
| Magnesium | 8130 | 3.27 | 23.4 | " | " | " | " | " |
| Copper | 13.4 | 0.503 | 2.34 | " | " | " | " | " |
| Chromium | 13.7 | 0.257 | 1.17 | " | " | " | " | " |
| Calcium | 51600 | 117 | 234 | " | 10 | " | " | " |
| Cadmium | 0.223 | 0.199 | 0.585 | " | 1 | " | " | " |
| Barium | 159 | 0.456 | 1.17 | " | " | " | " | " |
| Nickel | 23.1 | 0.109 | 1.17 | " | " | " | " | " |
| Boron | 6.28 | 1.06 | 5.85 | " | " | " | " | " |

Metals by SW6020

| | | | | | | | | |
|---------|------|-------|-------|-------|---|--------|------------|------------|
| Arsenic | 3.37 | 0.151 | 0.468 | mg/kg | 1 | 831032 | 11/01/2010 | 11/08/2010 |
|---------|------|-------|-------|-------|---|--------|------------|------------|

Metals by SW7196

Origins Laboratory, Inc.



Noelle E Doyle,

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Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

M-BG1

10/27/2010 1:30:00PM

| Analyte | Result | Minimum Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Notes |
|---------|--------|----------------------------|--------------------|-------|----------|-------|----------|----------|-------|
|---------|--------|----------------------------|--------------------|-------|----------|-------|----------|----------|-------|

XENCO

X010243-01 (Soil)

Metals by SW7196

| | | | | | | | | | |
|----------------------|----|-------|------|-------|----|--------|------------|------------|--|
| Chromium, Hexavalent | ND | 0.117 | 9.36 | mg/kg | 20 | 830779 | 11/05/2010 | 11/05/2010 | |
|----------------------|----|-------|------|-------|----|--------|------------|------------|--|

Metals by SW7471A

| | | | | | | | | | |
|---------|-------|-------|-------|-------|---|--------|------------|------------|---|
| Mercury | 0.015 | 0.012 | 0.039 | mg/kg | 1 | 830147 | 11/01/2010 | 11/01/2010 | I |
|---------|-------|-------|-------|-------|---|--------|------------|------------|---|

Percent Moisture by AD2216A

| | | | | | | | | | |
|------------------|------|---|---|---|---|--------|------------|------------|--|
| Percent Moisture | 14.5 | 1 | 1 | % | 1 | 829906 | 11/01/2010 | 11/01/2010 | |
|------------------|------|---|---|---|---|--------|------------|------------|--|

pH by SW9045C

| | | | | | | | | | |
|----|------|--|--|----|---|--------|------------|------------|---|
| pH | 8.29 | | | SU | 1 | 829723 | 10/29/2010 | 10/29/2010 | Q |
|----|------|--|--|----|---|--------|------------|------------|---|

Sodium Absorption Ratio (SAR) by S29B08

| | | | | | | | | | |
|-------------------------|-------|--|--|--|---|--------|------------|------------|--|
| Sodium absorption ratio | 0.136 | | | | 1 | 830834 | 11/08/2010 | 11/08/2010 | |
|-------------------------|-------|--|--|--|---|--------|------------|------------|--|

Origins Laboratory, Inc.



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Noelle E Doyle,

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

M-Cutt Smpl 1
10/27/2010 2:00:00PM

| Analyte | Result | Minimum Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Notes |
|---------|--------|----------------------------|--------------------|-------|----------|-------|----------|----------|-------|
|---------|--------|----------------------------|--------------------|-------|----------|-------|----------|----------|-------|

Origins Laboratory, Inc.
X010243-02 (Soil)

BTEX by EPA 8260B

| | | | | | | | | |
|--------------|---------|---------|---------|-------|---|---------|------------|------------|
| Benzene | 0.00240 | 0.00200 | 0.00400 | mg/kg | 1 | 0J29003 | 10/29/2010 | 10/30/2010 |
| Toluene | 0.00536 | 0.00200 | 0.00400 | " | " | " | " | " |
| Ethylbenzene | ND | 0.00200 | 0.00400 | " | " | " | " | " |
| m,p-Xylene | 0.00724 | 0.00400 | 0.00800 | " | " | " | " | " |
| o-Xylene | 0.00656 | 0.00200 | 0.00400 | " | " | " | " | " |

| | | | | | | | | |
|----------------------------------|--------|--|----------|--|--|---|---|---|
| Surrogate: 1,2-Dichloroethane-d4 | 114 % | | 77.6-134 | | | " | " | " |
| Surrogate: Toluene-d8 | 104 % | | 81.4-121 | | | " | " | " |
| Surrogate: 4-Bromofluorobenzene | 98.4 % | | 74.7-123 | | | " | " | " |

Conductivity by E120.1

| | | | | | | | | |
|--------------|------|---|---|-------|---|--------|------------|------------|
| Conductivity | 6590 | 1 | 2 | US/CM | 1 | 829880 | 11/01/2010 | 11/01/2010 |
|--------------|------|---|---|-------|---|--------|------------|------------|

Metals by SW6010B

| | | | | | | | | | |
|----------|-------|-------|------|-------|---|--------|------------|------------|---|
| Cadmium | 0.505 | 0.375 | 1.1 | mg/kg | 1 | 830512 | 11/01/2010 | 11/03/2010 | I |
| Chromium | 17.2 | 0.486 | 2.21 | " | " | " | " | " | |
| Boron | 13.3 | 2.01 | 11 | " | " | " | " | " | |
| Calcium | 22800 | 22.1 | 44.2 | " | " | " | " | " | |
| Lead | 14.9 | 1.04 | 2.21 | " | " | " | " | " | |
| Barium | 166 | 0.861 | 2.21 | " | " | " | " | " | |

Origins Laboratory, Inc.



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Noelle E Doyle,

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

M-Cutt Smpl 1
10/27/2010 2:00:00PM

| Analyte | Result | Minimum Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Notes |
|---------|--------|----------------------------|--------------------|-------|----------|-------|----------|----------|-------|
|---------|--------|----------------------------|--------------------|-------|----------|-------|----------|----------|-------|

XENCO

X010243-02 (Soil)

Metals by SW6010B

| | | | | | | | | | |
|-----------|------|-------|------|-------|---|--------|------------|------------|---|
| Magnesium | 7120 | 6.18 | 44.2 | mg/kg | 1 | 830512 | 11/01/2010 | 11/03/2010 | |
| Nickel | 23.3 | 0.205 | 2.21 | " | " | " | " | " | |
| Selenium | 2.59 | 1.37 | 6.62 | " | " | " | " | " | I |
| Silver | ND | 1.57 | 4.42 | " | " | " | " | " | |
| Sodium | 5690 | 5.08 | 110 | " | " | " | " | " | |
| Zinc | 68.7 | 3.31 | 6.62 | " | " | " | " | " | |
| Copper | 26.4 | 0.949 | 4.42 | " | " | " | " | " | |

Metals by SW6020

| | | | | | | | | | |
|---------|------|-------|-------|-------|---|--------|------------|------------|--|
| Arsenic | 5.29 | 0.285 | 0.883 | mg/kg | 1 | 831032 | 11/01/2010 | 11/08/2010 | |
|---------|------|-------|-------|-------|---|--------|------------|------------|--|

Metals by SW7196

| | | | | | | | | | |
|----------------------|----|-------|------|-------|----|--------|------------|------------|--|
| Chromium, Hexavalent | ND | 0.221 | 17.7 | mg/kg | 20 | 830779 | 11/05/2010 | 11/05/2010 | |
|----------------------|----|-------|------|-------|----|--------|------------|------------|--|

Metals by SW7471A

| | | | | | | | | | |
|---------|-------|-------|-------|-------|---|--------|------------|------------|---|
| Mercury | 0.026 | 0.023 | 0.074 | mg/kg | 1 | 830147 | 11/01/2010 | 11/01/2010 | I |
|---------|-------|-------|-------|-------|---|--------|------------|------------|---|

Percent Moisture by AD2216A

| | | | | | | | | | |
|------------------|------|---|---|---|---|--------|------------|------------|--|
| Percent Moisture | 54.7 | 1 | 1 | % | 1 | 829906 | 11/01/2010 | 11/01/2010 | |
|------------------|------|---|---|---|---|--------|------------|------------|--|

Origins Laboratory, Inc.



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Noelle E Doyle,

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

M-Cutt Smpl 1
10/27/2010 2:00:00PM

| Analyte | Result | Minimum Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Notes |
|---------|--------|----------------------------|--------------------|-------|----------|-------|----------|----------|-------|
|---------|--------|----------------------------|--------------------|-------|----------|-------|----------|----------|-------|

XENCO

X010243-02 (Soil)

pH by SW9045C

| | | | | | | | | | |
|----|------|--|--|----|---|--------|------------|------------|---|
| pH | 8.93 | | | SU | 1 | 829723 | 10/29/2010 | 10/29/2010 | Q |
|----|------|--|--|----|---|--------|------------|------------|---|

Polyaromatic Hydrocarbons (PaHs) by SW8270C

| | | | | | | | | | |
|-------------------------|----|-------|-------|-------|---|--------|------------|------------|---|
| Dibenz(a,h)anthracene | ND | 0.06 | 0.145 | mg/kg | 1 | 830032 | 10/29/2010 | 10/30/2010 | |
| Pyrene | ND | 0.073 | 0.22 | " | " | " | " | " | |
| Naphthalene | ND | 0.046 | 0.22 | " | " | " | " | " | |
| Anthracene | ND | 0.077 | 0.22 | " | " | " | " | " | |
| Indeno(1,2,3-c,d)Pyrene | ND | 0.075 | 0.22 | " | " | " | " | " | |
| Fluorene | ND | 0.051 | 0.22 | " | " | " | " | " | |
| Fluoranthene | ND | 0.084 | 0.22 | " | " | " | " | " | |
| Chrysene | ND | 0.051 | 0.22 | " | " | " | " | " | J |
| Benzo(k)fluoranthene | ND | 0.073 | 0.22 | " | " | " | " | " | |
| Benzo(b)fluoranthene | ND | 0.044 | 0.22 | " | " | " | " | " | |
| Benzo(a)anthracene | ND | 0.062 | 0.22 | " | " | " | " | " | |
| Acenaphthene | ND | 0.049 | 0.22 | " | " | " | " | " | |
| Benzo(a)pyrene | ND | 0.055 | 0.145 | " | " | " | " | " | |

| | | | | | |
|----------------------------|------|--------|---|---|---|
| Surrogate: Phenol-d6 | 87 % | 60-102 | " | " | " |
| Surrogate: Nitrobenzene-d5 | 86 % | 63-105 | " | " | " |
| Surrogate: Terphenyl-D14 | 81 % | 57-122 | " | " | " |

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Noelle E Doyle,

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

M-Cutt Smpl 1
10/27/2010 2:00:00PM

| Analyte | Result | Minimum Detection Limit | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Notes |
|---------|--------|----------------------------|--------------------|-------|----------|-------|----------|----------|-------|
|---------|--------|----------------------------|--------------------|-------|----------|-------|----------|----------|-------|

XENCO

X010243-02 (Soil)

Polyaromatic Hydrocarbons (PaHs) by SW8270C

| | | | | | | | | | |
|---------------------------------|------|--|--------|--|--|--------|------------|------------|--|
| Surrogate: 2-Fluorophenol | 99 % | | 60-102 | | | 830032 | 10/29/2010 | 10/30/2010 | |
| Surrogate: 2-Fluorobiphenyl | 83 % | | 64-104 | | | " | " | " | |
| Surrogate: 2,4,6-Tribromophenol | 96 % | | 58-119 | | | " | " | " | |

Sodium Absorption Ratio (SAR) by S29B08

| | | | | | | | | | |
|-------------------------|------|--|--|--|---|--------|------------|------------|--|
| Sodium absorption ratio | 8.43 | | | | 1 | 830834 | 11/08/2010 | 11/08/2010 | |
|-------------------------|------|--|--|--|---|--------|------------|------------|--|

TPH-Carbon Chain by EPA Method 8015M

| | | | | | | | | | |
|-----------------------------------|----|------|------|-------|---|---------|------------|------------|--|
| Gasoline (C6-C10) | ND | 25.0 | 50.0 | mg/kg | 1 | 0J29004 | 10/29/2010 | 10/31/2010 | |
| Diesel (C10-C28) | ND | 25.0 | 50.0 | " | " | " | " | " | |
| Residual Range Organics (C28-C36) | ND | 100 | 200 | " | " | " | " | " | |
| TPH - Carbon Chain Total | ND | 25.0 | 50.0 | " | " | " | " | " | |

| | | | | | | | | | |
|------------------------|--------|--|--------|--|--|---|---|---|--|
| Surrogate: o-Terphenyl | 92.1 % | | 65-140 | | | " | " | " | |
|------------------------|--------|--|--------|--|--|---|---|---|--|

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Noelle E Doyle,

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

Extractable Petroleum Hydrocarbons by 8015M - Quality Control Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|-------------|-----------------|----------|---|---|-------------|---------------|------|-----------|-------|
| Batch OJ29004 - Default Prep GC-Semi | | | | | | | | | | |
| Blank (OJ29004-BLK1) | | | | Prepared: 10/29/2010 Analyzed: 10/31/2010 | | | | | | |
| Gasoline (C6-C10) | ND | 50.0 | mg/kg | | | | | | | |
| Diesel (C10-C28) | ND | 50.0 | " | | | | | | | |
| Residual Range Organics (C28-C36) | ND | 200 | " | | | | | | | |
| TPH - Carbon Chain Total | ND | 50.0 | " | | | | | | | |
| <i>Surrogate: o-Terphenyl</i> | <i>46.5</i> | | <i>g</i> | <i>50.0</i> | | <i>93.0</i> | <i>65-140</i> | | | |
| LCS (OJ29004-BSI) | | | | Prepared: 10/29/2010 Analyzed: 10/31/2010 | | | | | | |
| Gasoline (C6-C10) | 62.8 | 50.0 | mg/kg | | | | 65-140 | | | |
| Diesel (C10-C28) | 398 | 50.0 | " | 500 | | 79.6 | 60-140 | | | |
| <i>Surrogate: o-Terphenyl</i> | <i>47.0</i> | | <i>g</i> | <i>50.0</i> | | <i>94.1</i> | <i>65-140</i> | | | |
| Matrix Spike (OJ29004-MSI) | | | | Source: X010237-01 | Prepared: 10/29/2010 Analyzed: 10/31/2010 | | | | | |
| Gasoline (C6-C10) | 75.2 | 50.0 | mg/kg | | ND | | 65-130 | | | |
| Diesel (C10-C28) | 433 | 50.0 | " | 500 | ND | 86.6 | 60-140 | | | |
| <i>Surrogate: o-Terphenyl</i> | <i>48.0</i> | | <i>g</i> | <i>50.0</i> | | <i>96.0</i> | <i>65-140</i> | | | |
| Matrix Spike Dup (OJ29004-MSD1) | | | | Source: X010237-01 | Prepared: 10/29/2010 Analyzed: 10/31/2010 | | | | | |
| Gasoline (C6-C10) | 64.1 | 50.0 | mg/kg | | ND | | 65-130 | 15.9 | 20 | |
| Diesel (C10-C28) | 413 | 50.0 | " | 500 | ND | 82.6 | 60-140 | 4.73 | 25 | |
| <i>Surrogate: o-Terphenyl</i> | <i>47.5</i> | | <i>g</i> | <i>50.0</i> | | <i>95.0</i> | <i>65-140</i> | | | |

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Noelle E Doyle,

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

Volatile Organic Compounds by EPA Method 8260B - Quality Control Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch OJ29003 - EPA 5030B

Blank (OJ29003-BLK1)

Prepared: 10/29/2010 Analyzed: 10/29/2010

| | | | |
|--------------|----|-------|-------|
| Benzene | ND | 0.004 | mg/kg |
| Toluene | ND | 0.004 | " |
| Ethylbenzene | ND | 0.004 | " |
| m,p-Xylene | ND | 0.008 | " |
| o-Xylene | ND | 0.004 | " |

| | | | | | |
|----------------------------------|------|------|------|-----|----------|
| Surrogate: 1,2-Dichloroethane-d4 | 66.2 | ug/L | 62.5 | 106 | 77.6-134 |
| Surrogate: Toluene-d8 | 64.4 | " | 62.5 | 103 | 81.4-121 |
| Surrogate: 4-Bromofluorobenzene | 63.4 | " | 62.5 | 101 | 74.7-123 |

LCS (OJ29003-BS1)

Prepared: 10/29/2010 Analyzed: 10/29/2010

| | | | | | | |
|---------|------|-------|-------|-------|------|----------|
| Benzene | 0.19 | 0.004 | mg/kg | 0.200 | 93.4 | 75.2-128 |
| Toluene | 0.18 | 0.004 | " | 0.200 | 90.6 | 76.3-130 |

| | | | | | |
|----------------------------------|------|------|------|------|----------|
| Surrogate: 1,2-Dichloroethane-d4 | 67.3 | ug/L | 62.5 | 108 | 77.6-134 |
| Surrogate: Toluene-d8 | 64.6 | " | 62.5 | 103 | 81.4-121 |
| Surrogate: 4-Bromofluorobenzene | 61.3 | " | 62.5 | 98.1 | 74.7-123 |

Matrix Spike (OJ29003-MS1)

Source: X010208-01

Prepared: 10/29/2010 Analyzed: 10/29/2010

| | | | | | | | |
|---------|------|-------|-------|-------|----|------|----------|
| Benzene | 0.21 | 0.004 | mg/kg | 0.200 | ND | 103 | 77.6-132 |
| Toluene | 0.20 | 0.004 | " | 0.200 | ND | 97.3 | 74-136 |

| | | | | | |
|----------------------------------|------|------|------|------|----------|
| Surrogate: 1,2-Dichloroethane-d4 | 67.6 | ug/L | 62.5 | 108 | 77.6-134 |
| Surrogate: Toluene-d8 | 64.0 | " | 62.5 | 102 | 81.4-121 |
| Surrogate: 4-Bromofluorobenzene | 62.0 | " | 62.5 | 99.1 | 74.7-123 |

Matrix Spike Dup (OJ29003-MSD1)

Source: X010208-01

Prepared: 10/29/2010 Analyzed: 10/29/2010

| | | | | | | | | | |
|---------|------|-------|-------|-------|----|------|----------|------|------|
| Benzene | 0.21 | 0.004 | mg/kg | 0.200 | ND | 105 | 77.6-132 | 2.19 | 13.1 |
| Toluene | 0.20 | 0.004 | " | 0.200 | ND | 98.3 | 74-136 | 1.06 | 20.9 |

| | | | | | |
|----------------------------------|------|------|------|------|----------|
| Surrogate: 1,2-Dichloroethane-d4 | 67.5 | ug/L | 62.5 | 108 | 77.6-134 |
| Surrogate: Toluene-d8 | 64.4 | " | 62.5 | 103 | 81.4-121 |
| Surrogate: 4-Bromofluorobenzene | 61.0 | " | 62.5 | 97.7 | 74.7-123 |

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Noelle E Doyle,

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

Conductivity by E120.1 - Quality Control XENCO

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch 829880 - NONE

| LCS (829880-1-BKS) | | Source: 829880-1-BKS | | | Prepared: 11/01/2010 Analyzed: 11/01/2010 | | | | | |
|----------------------|------|----------------------|-------|------|---|----|--------|---|----|--|
| Conductivity | 1350 | 2 | US/CM | 1410 | ±1.00 | 96 | 80-120 | 0 | 20 | |
| BLANK (829880-1-BLK) | | Source: 829880-1-BLK | | | Prepared: 11/01/2010 Analyzed: 11/01/2010 | | | | | |
| Conductivity | ND | 2 | US/CM | 1410 | | | - | 0 | 20 | |

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Noelle E Doyle,

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Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

Metals by SW6010B - Quality Control XENCO

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch 830512 - SW3050B

| MS (395134-001 S) | | | | Source: 395134-001 S | | Prepared: 11/01/2010 Analyzed: 11/03/2010 | | | | |
|-------------------|-------|------|-------|----------------------|--------|---|--------|---|----|---|
| Boron | 110 | 5.6 | mg/kg | 112 | 4.31 | 94 | 75-125 | 0 | 20 | |
| Cadmium | 115 | 0.56 | " | 112 | ↗0.560 | 103 | 75-125 | 0 | 20 | |
| Calcium | 24600 | 22.4 | " | 2800 | 16500 | 289 | 75-125 | 0 | 20 | J |
| Nickel | 116 | 1.12 | " | 112 | 5.23 | 99 | 75-125 | 0 | 20 | |
| Sodium | 3320 | 56 | " | 2800 | 404 | 104 | 75-125 | 0 | 20 | |
| Silver | 54.6 | 2.24 | " | 56 | ↗2.24 | 98 | 75-125 | 0 | 20 | |
| Chromium | 119 | 1.12 | " | 112 | 6.23 | 101 | 75-125 | 0 | 20 | |
| Copper | 126 | 2.24 | " | 112 | 7.63 | 106 | 75-125 | 0 | 20 | |
| Lead | 132 | 1.12 | " | 112 | 6.59 | 112 | 75-125 | 0 | 20 | |
| Barium | 4150 | 1.12 | " | 112 | 2500 | NR | 75-125 | 0 | 20 | J |
| Magnesium | 6790 | 22.4 | " | 2800 | 2710 | 146 | 75-125 | 0 | 20 | J |
| Zinc | 141 | 3.36 | " | 112 | 21.7 | 107 | 75-125 | 0 | 20 | |
| Selenium | 111 | 3.36 | " | 112 | ↗3.36 | 99 | 75-125 | 0 | 20 | |

| MSD (395134-001 SD) | | | | Source: 395134-001 SD | | Prepared: 11/01/2010 Analyzed: 11/03/2010 | | | | |
|---------------------|------|------|-------|-----------------------|--------|---|--------|----|----|---|
| Boron | 103 | 5.6 | mg/kg | 112 | 4.31 | 88 | 75-125 | 7 | 20 | |
| Copper | 114 | 2.24 | " | 112 | 7.63 | 95 | 75-125 | 10 | 20 | |
| Chromium | 110 | 1.12 | " | 112 | 6.23 | 93 | 75-125 | 8 | 20 | |
| Cadmium | 108 | 0.56 | " | 112 | ↗0.560 | 96 | 75-125 | 6 | 20 | |
| Lead | 114 | 1.12 | " | 112 | 6.59 | 96 | 75-125 | 15 | 20 | |
| Barium | 3770 | 1.12 | " | 112 | 2500 | NR | 75-125 | 10 | 20 | J |
| Magnesium | 5960 | 22.4 | " | 2800 | 2710 | 116 | 75-125 | 13 | 20 | J |
| Zinc | 130 | 3.36 | " | 112 | 21.7 | 97 | 75-125 | 8 | 20 | |
| Sodium | 3140 | 56 | " | 2800 | 404 | 98 | 75-125 | 6 | 20 | |
| Silver | 52.6 | 2.24 | " | 56 | ↗2.24 | 94 | 75-125 | 4 | 20 | |
| Selenium | 102 | 3.36 | " | 112 | ↗3.36 | 91 | 75-125 | 8 | 20 | |

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Noelle E Doyle,

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

Metals by SW6010B - Quality Control XENCO

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|-------------------------------|--------|------------------------------|-------|-------------|--|------|-------------|-----|-----------|-------|
| Batch 830512 - SW3050B | | | | | | | | | | |
| MSD (395134-001 SD) | | Source: 395134-001 SD | | | Prepared: 11/01/2010 Analyzed: 11/03/2010 | | | | | |
| Nickel | 108 | 1.12 | mg/kg | 112 | 5.23 | 92 | 75-125 | 7 | 20 | |
| Calcium | 23500 | 22.4 | " | 2800 | 16500 | 250 | 75-125 | 5 | 20 | J |
| LCS (577477-1-BKS) | | Source: 577477-1-BKS | | | Prepared: 11/01/2010 Analyzed: 11/03/2010 | | | | | |
| Calcium | 2450 | 20 | mg/kg | 2500 | ±10.0 | 98 | 75-125 | 0 | 20 | |
| Barium | 102 | 1 | " | 100 | ±0.390 | 102 | 75-125 | 0 | 20 | |
| Boron | 99 | 5 | " | 100 | ±0.910 | 99 | 75-125 | 0 | 20 | |
| Cadmium | 105 | 0.5 | " | 100 | ±0.170 | 105 | 75-125 | 0 | 20 | |
| Chromium | 102 | 1 | " | 100 | ±0.220 | 102 | 75-125 | 0 | 20 | |
| Copper | 104 | 2 | " | 100 | ±0.430 | 104 | 75-125 | 0 | 20 | |
| Lead | 104 | 1 | " | 100 | ±0.470 | 104 | 75-125 | 0 | 20 | |
| Nickel | 102 | 1 | " | 100 | ±0.093 | 102 | 75-125 | 0 | 20 | |
| Selenium | 99.8 | 3 | " | 100 | ±0.620 | 100 | 75-125 | 0 | 20 | |
| Silver | 50.4 | 2 | " | 50 | ±0.710 | 101 | 75-125 | 0 | 20 | |
| Sodium | 2480 | 50 | " | 2500 | 3.55 | 99 | 75-125 | 0 | 20 | |
| Zinc | 101 | 3 | " | 100 | ±1.50 | 101 | 75-125 | 0 | 20 | |
| Magnesium | 2420 | 20 | " | 2500 | 7.85 | 97 | 75-125 | 0 | 20 | |
| BLANK (577477-1-BLK) | | Source: 577477-1-BLK | | | Prepared: 11/01/2010 Analyzed: 11/03/2010 | | | | | |
| Selenium | ND | 3 | mg/kg | 100 | | | - | 0 | 20 | |
| Zinc | ND | 3 | " | 100 | | | - | 0 | 20 | |
| Silver | ND | 2 | " | 50 | | | - | 0 | 20 | |
| Nickel | ND | 1 | " | 100 | | | - | 0 | 20 | |
| Magnesium | 7.85 | 20 | " | 2500 | | | - | 0 | 20 | I, V |
| Lead | ND | 1 | " | 100 | | | - | 0 | 20 | |
| Copper | ND | 2 | " | 100 | | | - | 0 | 20 | |

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Noelle E Doyle,

Olsson Associates

826 21 1/2 Road

Grand Junction CO

81505

Tim Dobransky

Project Number: 010-2337

Project: Mansur Wells

Metals by SW6010B - Quality Control XENCO

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

Batch 830512 - SW3050B

| BLANK (577477-1-BLK) | | Source: 577477-1-BLK | | | Prepared: 11/01/2010 Analyzed: 11/03/2010 | | | | | |
|----------------------|------|----------------------|-------|------|---|---|---|----|--|------|
| Chromium | ND | 1 | mg/kg | 100 | | - | 0 | 20 | | |
| Calcium | ND | 20 | " | 2500 | | - | 0 | 20 | | |
| Cadmium | ND | 0.5 | " | 100 | | - | 0 | 20 | | |
| Boron | ND | 5 | " | 100 | | - | 0 | 20 | | |
| Barium | ND | 1 | " | 100 | | - | 0 | 20 | | |
| Sodium | 3.55 | 50 | " | 2500 | | - | 0 | 20 | | I, V |

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Noelle E Doyle,

Olsson Associates

826 21 1/2 Road

Grand Junction CO 81505

Tim Dobransky

Project Number: 010-2337

Project: Mansur Wells

Metals by SW6020 - Quality Control XENCO

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

Batch 831032 - SW3050B

BLANK (577475-1-BLK)

Source: 577475-1-BLK

Prepared: 11/01/2010 Analyzed: 11/08/2010

Arsenic

ND

0.4

mg/kg

20

-

0

30

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Noelle E Doyle,

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

Metals by SW7196 - Quality Control XENCO

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|-------------------------------|--------|----------------------|-------|-------------|---|------|-------------|-----|-----------|-------|
| Batch 830779 - SW3060A | | | | | | | | | | |
| MS (395134-001 S) | | Source: 395134-001 S | | | Prepared: 11/05/2010 Analyzed: 11/05/2010 | | | | | |
| Chromium, Hexavalent | 2.52 | 4.48 | mg/kg | 2.8 | 4.48 | 90 | 80-120 | 0 | 20 | I |
| LCS (830779-1-BKS) | | Source: 830779-1-BKS | | | Prepared: 11/05/2010 Analyzed: 11/05/2010 | | | | | |
| Chromium, Hexavalent | 2.45 | 4 | mg/kg | 2.5 | 0.005 | 98 | 80-120 | 0 | 20 | I |
| BLANK (830779-1-BLK) | | Source: 830779-1-BLK | | | Prepared: 11/05/2010 Analyzed: 11/05/2010 | | | | | |
| Chromium, Hexavalent | ND | 0.4 | mg/kg | 0.25 | | | - | 0 | 20 | |

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Noelle E Doyle,

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

Metals by SW7471A - Quality Control
XENCO

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|-------------------------------|--------|-----------------------|-------|-------------|---|------|-------------|-----|-----------|-------|
| Batch 830147 - SW7471P | | | | | | | | | | |
| MS (395134-001 S) | | Source: 395134-001 S | | | Prepared: 11/01/2010 Analyzed: 11/01/2010 | | | | | |
| Mercury | 0.182 | 0.037 | mg/kg | 0.149 | ↕0.037 | 122 | 75-125 | 0 | 20 | |
| MSD (395134-001 SD) | | Source: 395134-001 SD | | | Prepared: 11/01/2010 Analyzed: 11/01/2010 | | | | | |
| Mercury | 0.184 | 0.037 | mg/kg | 0.149 | ↕0.037 | 123 | 75-125 | 1 | 20 | |
| LCS (577469-1-BKS) | | Source: 577469-1-BKS | | | Prepared: 11/01/2010 Analyzed: 11/01/2010 | | | | | |
| Mercury | 0.149 | 0.033 | mg/kg | 0.133 | ↕0.011 | 112 | 75-125 | 0 | 20 | |
| BLANK (577469-1-BLK) | | Source: 577469-1-BLK | | | Prepared: 11/01/2010 Analyzed: 11/01/2010 | | | | | |
| Mercury | ND | 0.033 | mg/kg | 0.133 | | | - | 0 | 20 | |

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Noelle E Doyle,

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

Percent Moisture by AD2216A - Quality Control XENCO

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

Batch 829906 - NONE

BLANK (829906-1-BLK)

Source: 829906-1-BLK

Prepared: 11/01/2010 Analyzed: 11/01/2010

| | | | | | | | |
|------------------|----|---|---|---|---|---|----|
| Percent Moisture | ND | 1 | % | 0 | - | 0 | 20 |
|------------------|----|---|---|---|---|---|----|

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Noelle E Doyle,

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

Polyaromatic Hydrocarbons (PAHs) by SW8270C - Quality Control XENCO

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch 830032 - SW3550

| MS (394987-001 S) | | Source: 394987-001 S | | Prepared: 10/29/2010 Analyzed: 10/30/2010 | | | | | | |
|---------------------------------|------|----------------------|---------|---|-------|-----|--------|---|----|--|
| Dibenz(a,h)anthracene | 1.73 | 0.068 | mg/kg | 1.71 | 0.068 | 101 | 47-120 | 0 | 20 | |
| Fluoranthene | 1.73 | 0.103 | " | 1.71 | 0.103 | 101 | 59-106 | 0 | 20 | |
| Fluorene | 1.65 | 0.103 | " | 1.71 | 0.103 | 96 | 54-115 | 0 | 20 | |
| Naphthalene | 1.52 | 0.103 | " | 1.71 | 0.103 | 89 | 50-105 | 0 | 20 | |
| Chrysene | 1.96 | 0.103 | " | 1.71 | 0.103 | 115 | 61-106 | 0 | 20 | |
| Pyrene | 1.58 | 0.103 | " | 1.71 | 0.103 | 92 | 49-125 | 0 | 20 | |
| Benzo(k)fluoranthene | 1.75 | 0.103 | " | 1.71 | 0.103 | 102 | 60-112 | 0 | 20 | |
| Benzo(b)fluoranthene | 1.6 | 0.103 | " | 1.71 | 0.103 | 94 | 61-108 | 0 | 20 | |
| Benzo(a)anthracene | 1.68 | 0.103 | " | 1.71 | 0.103 | 98 | 51-119 | 0 | 20 | |
| Anthracene | 1.64 | 0.103 | " | 1.71 | 0.103 | 96 | 59-104 | 0 | 20 | |
| Acenaphthene | 1.51 | 0.103 | " | 1.71 | 0.103 | 88 | 48-119 | 0 | 20 | |
| Benzo(a)pyrene | 1.65 | 0.068 | " | 1.71 | 0.068 | 96 | 62-104 | 0 | 20 | |
| Surrogate: Nitrobenzene-d5 | 1.41 | | PERCENT | 1.67 | | 84 | 63-105 | | | |
| Surrogate: Phenol-d6 | 2.89 | | " | 3.33 | | 87 | 60-102 | | | |
| Surrogate: Terphenyl-D14 | 1.56 | | " | 1.67 | | 93 | 57-122 | | | |
| Surrogate: 2-Fluorobiphenyl | 1.47 | | " | 1.67 | | 88 | 64-104 | | | |
| Surrogate: 2,4,6-Tribromophenol | 3.41 | | " | 3.33 | | 102 | 58-119 | | | |
| Surrogate: 2-Fluorophenol | 3.26 | | " | 3.33 | | 98 | 60-102 | | | |

| MSD (394987-001 SD) | | Source: 394987-001 SD | | Prepared: 10/29/2010 Analyzed: 10/30/2010 | | | | | | |
|-------------------------|------|-----------------------|-------|---|-------|----|--------|---|----|--|
| Indeno(1,2,3-c,d)Pyrene | 1.68 | 0.103 | mg/kg | 1.71 | 0.103 | 98 | 70-130 | 3 | 30 | |
| Naphthalene | 1.48 | 0.103 | " | 1.71 | 0.103 | 87 | 50-105 | 3 | 20 | |
| Fluorene | 1.58 | 0.103 | " | 1.71 | 0.103 | 92 | 54-115 | 4 | 20 | |
| Fluoranthene | 1.69 | 0.103 | " | 1.71 | 0.103 | 99 | 59-106 | 2 | 20 | |
| Dibenz(a,h)anthracene | 1.7 | 0.068 | " | 1.71 | 0.068 | 99 | 47-120 | 2 | 20 | |
| Benzo(k)fluoranthene | 1.67 | 0.103 | " | 1.71 | 0.103 | 98 | 60-112 | 5 | 20 | |
| Benzo(b)fluoranthene | 1.65 | 0.103 | " | 1.71 | 0.103 | 96 | 61-108 | 3 | 20 | |

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Noelle E Doyle,

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

Polyaromatic Hydrocarbons (PAHs) by SW8270C - Quality Control XENCO

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch 830032 - SW3550

| MSD (394987-001 SD) | | Source: 394987-001 SD | | Prepared: 10/29/2010 Analyzed: 10/30/2010 | | | | | | |
|---------------------------------|------|-----------------------|---------|---|--------|-----|--------|---|----|--|
| Benzo(a)pyrene | 1.64 | 0.068 | mg/kg | 1.71 | ±0.068 | 96 | 62-104 | 1 | 20 | |
| Benzo(a)anthracene | 1.68 | 0.103 | " | 1.71 | ±0.103 | 98 | 51-119 | 0 | 20 | |
| Anthracene | 1.61 | 0.103 | " | 1.71 | ±0.103 | 94 | 59-104 | 2 | 20 | |
| Acenaphthene | 1.49 | 0.103 | " | 1.71 | ±0.103 | 87 | 48-119 | 1 | 20 | |
| Chrysene | 1.99 | 0.103 | " | 1.71 | ±0.103 | 116 | 61-106 | 2 | 20 | |
| Surrogate: Terphenyl-D14 | 1.47 | | PERCENT | 1.67 | | 88 | 57-122 | | | |
| Surrogate: Phenol-d6 | 2.71 | | " | 3.33 | | 81 | 60-102 | | | |
| Surrogate: 2-Fluorobiphenyl | 1.43 | | " | 1.67 | | 86 | 64-104 | | | |
| Surrogate: 2-Fluorophenol | 3.1 | | " | 3.33 | | 93 | 60-102 | | | |
| Surrogate: 2,4,6-Tribromophenol | 3.29 | | " | 3.33 | | 99 | 58-119 | | | |
| Surrogate: Nitrobenzene-d5 | 1.36 | | " | 1.67 | | 81 | 63-105 | | | |

| LCS (577237-1-BKS) | | Source: 577237-1-BKS | | Prepared: 10/29/2010 Analyzed: 10/30/2010 | | | | | | |
|--------------------------|------|----------------------|---------|---|--------|-----|--------|---|----|--|
| Naphthalene | 1.51 | 0.1 | mg/kg | 1.67 | ±0.021 | 90 | 50-105 | 0 | 20 | |
| Pyrene | 1.64 | 0.1 | " | 1.67 | ±0.033 | 98 | 49-125 | 0 | 20 | |
| Acenaphthene | 1.49 | 0.1 | " | 1.67 | ±0.022 | 89 | 48-119 | 0 | 20 | |
| Indeno(1,2,3-c,d)Pyrene | 1.69 | 0.1 | " | 1.67 | ±0.034 | 101 | 70-130 | 0 | 30 | |
| Benzo(a)pyrene | 1.62 | 0.066 | " | 1.67 | ±0.025 | 97 | 62-104 | 0 | 20 | |
| Fluorene | 1.57 | 0.1 | " | 1.67 | ±0.023 | 94 | 54-115 | 0 | 20 | |
| Benzo(b)fluoranthene | 1.68 | 0.1 | " | 1.67 | ±0.020 | 101 | 61-108 | 0 | 20 | |
| Anthracene | 1.58 | 0.1 | " | 1.67 | ±0.035 | 95 | 59-104 | 0 | 20 | |
| Benzo(a)anthracene | 1.64 | 0.1 | " | 1.67 | ±0.028 | 98 | 51-119 | 0 | 20 | |
| Benzo(k)fluoranthene | 1.65 | 0.1 | " | 1.67 | ±0.033 | 99 | 60-112 | 0 | 20 | |
| Chrysene | 1.96 | 0.1 | " | 1.67 | ±0.023 | 117 | 61-106 | 0 | 20 | |
| Dibenz(a,h)anthracene | 1.69 | 0.066 | " | 1.67 | ±0.027 | 101 | 47-120 | 0 | 20 | |
| Fluoranthene | 1.63 | 0.1 | " | 1.67 | ±0.038 | 98 | 59-106 | 0 | 20 | |
| Surrogate: Phenol-d6 | 2.84 | | PERCENT | 3.33 | | 85 | 60-102 | | | |
| Surrogate: Terphenyl-D14 | 1.62 | | " | 1.67 | | 97 | 57-122 | | | |

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Noelle E Doyle,

Olsson Associates
826 21 1/2 Road
Grand Junction CO 81505

Tim Dobransky
Project Number: 010-2337
Project: Mansur Wells

Polyaromatic Hydrocarbons (PAHs) by SW8270C - Quality Control XENCO

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch 830032 - SW3550

| | | | | | | | | | | |
|---------------------------|-----------------------------|--|--|--|--|--|--|--|--|--|
| LCS (577237-1-BKS) | Source: 577237-1-BKS | | | Prepared: 10/29/2010 Analyzed: 10/30/2010 | | | | | | |
|---------------------------|-----------------------------|--|--|--|--|--|--|--|--|--|

| | | | | | |
|---------------------------------|------|---------|------|----|--------|
| Surrogate: 2-Fluorophenol | 3.22 | PERCENT | 3.33 | 97 | 60-102 |
| Surrogate: 2,4,6-Tribromophenol | 3.19 | " | 3.33 | 96 | 58-119 |
| Surrogate: 2-Fluorobiphenyl | 1.47 | " | 1.67 | 88 | 64-104 |
| Surrogate: Nitrobenzene-d5 | 1.42 | " | 1.67 | 85 | 63-105 |

| | | | | | | | | | | |
|-----------------------------|-----------------------------|--|--|--|--|--|--|--|--|--|
| BLANK (577237-1-BLK) | Source: 577237-1-BLK | | | Prepared: 10/29/2010 Analyzed: 10/30/2010 | | | | | | |
|-----------------------------|-----------------------------|--|--|--|--|--|--|--|--|--|

| | | | | | | | |
|-------------------------|----|-------|-------|------|---|---|----|
| Benzo(k)fluoranthene | ND | 0.1 | mg/kg | 1.67 | - | 0 | 20 |
| Indeno(1,2,3-c,d)Pyrene | ND | 0.1 | " | 1.67 | - | 0 | 30 |
| Pyrene | ND | 0.1 | " | 1.67 | - | 0 | 20 |
| Naphthalene | ND | 0.1 | " | 1.67 | - | 0 | 20 |
| Fluorene | ND | 0.1 | " | 1.67 | - | 0 | 20 |
| Fluoranthene | ND | 0.1 | " | 1.67 | - | 0 | 20 |
| Chrysene | ND | 0.1 | " | 1.67 | - | 0 | 20 |
| Benzo(b)fluoranthene | ND | 0.1 | " | 1.67 | - | 0 | 20 |
| Benzo(a)pyrene | ND | 0.066 | " | 1.67 | - | 0 | 20 |
| Benzo(a)anthracene | ND | 0.1 | " | 1.67 | - | 0 | 20 |
| Anthracene | ND | 0.1 | " | 1.67 | - | 0 | 20 |
| Acenaphthene | ND | 0.1 | " | 1.67 | - | 0 | 20 |
| Dibenz(a,h)anthracene | ND | 0.066 | " | 1.67 | - | 0 | 20 |

| | | | | | |
|---------------------------------|------|---------|------|----|--------|
| Surrogate: Phenol-d6 | 2.85 | PERCENT | 3.33 | 86 | 60-102 |
| Surrogate: Nitrobenzene-d5 | 1.38 | " | 1.67 | 83 | 63-105 |
| Surrogate: Terphenyl-D14 | 1.55 | " | 1.67 | 93 | 57-122 |
| Surrogate: 2-Fluorophenol | 3.15 | " | 3.33 | 95 | 60-102 |
| Surrogate: 2-Fluorobiphenyl | 1.5 | " | 1.67 | 90 | 64-104 |
| Surrogate: 2,4,6-Tribromophenol | 3.05 | " | 3.33 | 92 | 58-119 |

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Noelle E Doyle,

Olsson Associates

826 21 1/2 Road

Grand Junction CO 81505

Tim Dobransky

Project Number: 010-2337

Project: Mansur Wells

Notes and Definitions

- V Detected in the sample and blank
- Q Sample held beyond the accepted holding time.
- J Spike recovery in the LCS failed high outside method recovery limits. Analytes are BDL. No affect on data
- I Sample result was found between MDL and RL
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference

Origins Laboratory, Inc.



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Noelle E Doyle,



01/26/11

Technical Report for

Olsson Associates

Mansur Wells Cuttings Sampling

Project 010-2337_100_100001

Accutest Job Number: D20463

Sampling Date: 01/17/11

Report to:

**Olsson Associates
826 21 1/2 Road
Grand Junction, CO 81505
tdobransky@oaconsulting.com**

ATTN: Tim Dobransky

Total number of pages in report: 17



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'J. Hamilton'.

**John Hamilton
Laboratory Director**

Client Service contact: Amanda Kissell 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

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Test results relate only to samples analyzed.

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Sample Summary

Olsson Associates

Job No: D20463

Mansur Wells Cuttings Sampling
Project No: Project 010-2337_100_100001

| Sample Number | Collected | | Time By | Received | Matrix | | Client Sample ID |
|------------------|-----------|-------|---------|----------|--------|------|---------------------|
| | Date | | | | Code | Type | |
| D20463-1 | 01/17/11 | 12:50 | JS | 01/18/11 | SO | Soil | BG2-M |
| D20463-2 | 01/17/11 | 13:00 | JS | 01/18/11 | SO | Soil | BG3-M |
| D20463-3 | 01/17/11 | 13:10 | JS | 01/18/11 | SO | Soil | BG4-M |
| D20463-4 | 01/17/11 | 13:20 | JS | 01/18/11 | SO | Soil | BG5-M |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Olsson Associates**Job No** D20463**Site:** Mansur Wells Cuttings Sampling**Report Dat** 1/26/2011 9:06:38 AM

On 01/18/2011, four (4) samples, 0 Trip Blanks, and 0 Field Blanks were received at Accutest Mountain States (AMS) at a temperature of 2.8°C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D20463 was assigned to the project. The lab sample IDs, client sample IDs, and dates of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Metals By Method SW846 6020

Matrix SO**Batch ID:** MP3862

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D20530-2MS, D20530-2MSD, and D20530-2SDL were used as the QC samples for the metals analysis.
- The serial dilution RPD for Arsenic are outside control limits for sample MP3862-SD1. The percent difference acceptable is due to low initial sample concentration (< 50 times IDL).

Wet Chemistry By Method SM19 2540B M

Matrix SO**Batch ID:** GN7922

- The data for SM19 2540B M meets quality control requirements.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Sample Results

Report of Analysis

Report of Analysis

| | | | |
|--------------------------|--------------------------------|------------------------|----------|
| Client Sample ID: | BG2-M | Date Sampled: | 01/17/11 |
| Lab Sample ID: | D20463-1 | Date Received: | 01/18/11 |
| Matrix: | SO - Soil | Percent Solids: | 79.7 |
| Project: | Mansur Wells Cuttings Sampling | | |

Metals Analysis

| Analyte | Result | RL | Units | DF | Prep | Analyzed By | Method | Prep Method |
|---------|--------|------|-------|----|----------|-------------|-------------------------|--------------------------|
| Arsenic | 5.4 | 0.39 | mg/kg | 5 | 01/21/11 | 01/24/11 GJ | SW846 6020 ¹ | SW846 3050B ² |

(1) Instrument QC Batch: MA1269
(2) Prep QC Batch: MP3862

RL = Reporting Limit

Report of Analysis

| | | | |
|--------------------------|--------------------------------|------------------------|----------|
| Client Sample ID: | BG3-M | Date Sampled: | 01/17/11 |
| Lab Sample ID: | D20463-2 | Date Received: | 01/18/11 |
| Matrix: | SO - Soil | Percent Solids: | 83.0 |
| Project: | Mansur Wells Cuttings Sampling | | |

Metals Analysis

| Analyte | Result | RL | Units | DF | Prep | Analyzed By | Method | Prep Method |
|---------|--------|------|-------|----|----------|-------------|-------------------------|--------------------------|
| Arsenic | 6.0 | 0.37 | mg/kg | 5 | 01/21/11 | 01/24/11 GJ | SW846 6020 ¹ | SW846 3050B ² |

(1) Instrument QC Batch: MA1269
(2) Prep QC Batch: MP3862

RL = Reporting Limit

Report of Analysis

| | | | |
|--------------------------|--------------------------------|------------------------|----------|
| Client Sample ID: | BG4-M | Date Sampled: | 01/17/11 |
| Lab Sample ID: | D20463-3 | Date Received: | 01/18/11 |
| Matrix: | SO - Soil | Percent Solids: | 79.1 |
| Project: | Mansur Wells Cuttings Sampling | | |

Metals Analysis

| Analyte | Result | RL | Units | DF | Prep | Analyzed By | Method | Prep Method |
|---------|--------|------|-------|----|----------|-------------|-------------------------|--------------------------|
| Arsenic | 4.7 | 0.42 | mg/kg | 5 | 01/21/11 | 01/24/11 GJ | SW846 6020 ¹ | SW846 3050B ² |

(1) Instrument QC Batch: MA1269
(2) Prep QC Batch: MP3862

RL = Reporting Limit

Report of Analysis

| | | | |
|--------------------------|--------------------------------|------------------------|----------|
| Client Sample ID: | BG5-M | Date Sampled: | 01/17/11 |
| Lab Sample ID: | D20463-4 | Date Received: | 01/18/11 |
| Matrix: | SO - Soil | Percent Solids: | 88.9 |
| Project: | Mansur Wells Cuttings Sampling | | |

Metals Analysis

| Analyte | Result | RL | Units | DF | Prep | Analyzed By | Method | Prep Method |
|---------|--------|------|-------|----|----------|-------------|-------------------------|--------------------------|
| Arsenic | 4.9 | 0.35 | mg/kg | 5 | 01/21/11 | 01/24/11 GJ | SW846 6020 ¹ | SW846 3050B ² |

(1) Instrument QC Batch: MA1269
(2) Prep QC Batch: MP3862

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Metals Analysis

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D20463
Account: CORCCOGJ - Olsson Associates
Project: Mansur Wells Cuttings Sampling

QC Batch ID: MP3862
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/21/11

| Metal | RL | IDL | MDL | MB raw | final |
|------------|-------|--------|-------|-----------|-------|
| Aluminum | 25 | .14 | 1.2 | | |
| Antimony | 0.20 | .001 | .0095 | | |
| Arsenic | 0.40 | .049 | .22 | 0.058 | <0.40 |
| Barium | 1.0 | .0035 | .1 | | |
| Beryllium | 0.10 | .0075 | .014 | | |
| Boron | 20 | .97 | 1 | | |
| Cadmium | 0.050 | .023 | .048 | | |
| Calcium | 200 | 1.8 | 8.2 | | |
| Chromium | 1.0 | .021 | .24 | | |
| Cobalt | 0.10 | .0033 | .003 | | |
| Copper | 1.0 | .011 | .063 | | |
| Iron | 20 | .81 | 3.7 | | |
| Lead | 0.25 | .0012 | .015 | | |
| Magnesium | 50 | .067 | 2.6 | | |
| Manganese | 0.50 | .007 | .029 | | |
| Molybdenum | 0.50 | .0044 | .023 | | |
| Nickel | 1.0 | .0029 | .031 | | |
| Phosphorus | 30 | 1.8 | 3.5 | | |
| Potassium | 100 | 2 | 3.2 | | |
| Selenium | 0.20 | .075 | .19 | | |
| Silver | 0.050 | .0008 | .002 | | |
| Sodium | 250 | .8 | 4.4 | | |
| Strontium | 10 | .004 | .04 | | |
| Thallium | 0.10 | .015 | .02 | | |
| Tin | 5.0 | .006 | .028 | | |
| Titanium | 1.0 | .035 | .062 | | |
| Uranium | 0.25 | .00038 | .0009 | | |
| Vanadium | 2.0 | .052 | .29 | | |
| Zinc | 5.0 | .039 | .12 | | |

Associated samples MP3862: D20463-1, D20463-2, D20463-3, D20463-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20463
 Account: CORCCOGJ - Olsson Associates
 Project: Mansur Wells Cuttings Sampling

QC Batch ID: MP3862
 Matrix Type: SOLID

Methods: SW846 6020
 Units: mg/kg

Prep Date: 01/21/11

| Metal | D20530-2 Original MS | | Spikelot MPICPALL % Rec | | QC Limits |
|------------|-------------------------|-----|----------------------------|-------|--------------|
| Aluminum | | | | | |
| Antimony | | | | | |
| Arsenic | 4.7 | 213 | 199 | 104.8 | 60-119 |
| Barium | | | | | |
| Beryllium | | | | | |
| Boron | | | | | |
| Cadmium | | | | | |
| Calcium | | | | | |
| Chromium | | | | | |
| Cobalt | | | | | |
| Copper | | | | | |
| Iron | | | | | |
| Lead | | | | | |
| Magnesium | | | | | |
| Manganese | | | | | |
| Molybdenum | | | | | |
| Nickel | | | | | |
| Phosphorus | | | | | |
| Potassium | | | | | |
| Selenium | | | | | |
| Silver | | | | | |
| Sodium | | | | | |
| Strontium | | | | | |
| Thallium | | | | | |
| Tin | | | | | |
| Titanium | | | | | |
| Uranium | | | | | |
| Vanadium | | | | | |
| Zinc | | | | | |

Associated samples MP3862: D20463-1, D20463-2, D20463-3, D20463-4

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D20463
 Account: CORCCOGJ - Olsson Associates
 Project: Mansur Wells Cuttings Sampling

QC Batch ID: MP3862
 Matrix Type: SOLID

Methods: SW846 6020
 Units: mg/kg

Prep Date: 01/21/11

| Metal | D20530-2 Original | MSD | Spikelot MPICPAL | % Rec | MSD RPD | QC Limit |
|------------|----------------------|-----|---------------------|-------|------------|-------------|
| Aluminum | | | | | | |
| Antimony | | | | | | |
| Arsenic | 4.7 | 202 | 205 | 96.2 | 5.3 | 20 |
| Barium | | | | | | |
| Beryllium | | | | | | |
| Boron | | | | | | |
| Cadmium | | | | | | |
| Calcium | | | | | | |
| Chromium | | | | | | |
| Cobalt | | | | | | |
| Copper | | | | | | |
| Iron | | | | | | |
| Lead | | | | | | |
| Magnesium | | | | | | |
| Manganese | | | | | | |
| Molybdenum | | | | | | |
| Nickel | | | | | | |
| Phosphorus | | | | | | |
| Potassium | | | | | | |
| Selenium | | | | | | |
| Silver | | | | | | |
| Sodium | | | | | | |
| Strontium | | | | | | |
| Thallium | | | | | | |
| Tin | | | | | | |
| Titanium | | | | | | |
| Uranium | | | | | | |
| Vanadium | | | | | | |
| Zinc | | | | | | |

Associated samples MP3862: D20463-1, D20463-2, D20463-3, D20463-4

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D20463

Account: CORCCOGJ - Olsson Associates

Project: Mansur Wells Cuttings Sampling

QC Batch ID: MP3862

Methods: SW846 6020

Matrix Type: SOLID

Units: mg/kg

Prep Date:

01/21/11

| Metal | BSP Result | Spikelot MPICPALL | % Rec | QC Limits |
|------------|---------------|----------------------|-------|--------------|
| Aluminum | | | | |
| Antimony | | | | |
| Arsenic | 96.7 | 100 | 96.7 | 80-120 |
| Barium | | | | |
| Beryllium | | | | |
| Boron | | | | |
| Cadmium | | | | |
| Calcium | | | | |
| Chromium | | | | |
| Cobalt | | | | |
| Copper | | | | |
| Iron | | | | |
| Lead | | | | |
| Magnesium | | | | |
| Manganese | | | | |
| Molybdenum | | | | |
| Nickel | | | | |
| Phosphorus | | | | |
| Potassium | | | | |
| Selenium | | | | |
| Silver | | | | |
| Sodium | | | | |
| Strontium | | | | |
| Thallium | | | | |
| Tin | | | | |
| Titanium | | | | |
| Uranium | | | | |
| Vanadium | | | | |
| Zinc | | | | |

Associated samples MP3862: D20463-1, D20463-2, D20463-3, D20463-4

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D20463
 Account: CORCCOGJ - Olsson Associates
 Project: Mansur Wells Cuttings Sampling

QC Batch ID: MP3862
 Matrix Type: SOLID

Methods: SW846 6020
 Units: ug/l

Prep Date: 01/21/11

| Metal | D20530-2 Original SDL 5:25 %DIF | | | QC Limits |
|------------|------------------------------------|------|----------|--------------|
| Aluminum | | | | |
| Antimony | | | | |
| Arsenic | 23.2 | 4.20 | 81.9 (a) | 0-10 |
| Barium | | | | |
| Beryllium | | | | |
| Boron | | | | |
| Cadmium | | | | |
| Calcium | | | | |
| Chromium | | | | |
| Cobalt | | | | |
| Copper | | | | |
| Iron | | | | |
| Lead | | | | |
| Magnesium | | | | |
| Manganese | | | | |
| Molybdenum | | | | |
| Nickel | | | | |
| Phosphorus | | | | |
| Potassium | | | | |
| Selenium | | | | |
| Silver | | | | |
| Sodium | | | | |
| Strontium | | | | |
| Thallium | | | | |
| Tin | | | | |
| Titanium | | | | |
| Uranium | | | | |
| Vanadium | | | | |
| Zinc | | | | |

Associated samples MP3862: D20463-1, D20463-2, D20463-3, D20463-4

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).