

FORM 19
Rev 6/99

**State of Colorado
Oil and Gas Conservation Commission**



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

FOR OGCC USE ONLY

SPILL/RELEASE REPORT

This form is to be submitted by the party responsible for the oil and gas spill or release. Any spill or release which may impact waters of the State must be reported as soon as practicable; any spill over 20 bbls must be reported within 24 hours and all spills over five bbls must be reported within ten days. Submit a Site Investigation and Remediation Workplan (Form 27) when requested by the Director.

Spill report taken by:

FACILITY ID:

OPERATOR INFORMATION

| | | |
|---|--------------------------------|--------------------------------|
| Name of Operator: <u>Chevron Production</u> | OGCC Operator No: <u>16700</u> | Phone Numbers |
| Address: <u>100 Chevron Road</u> | | No: <u>970-675-3705</u> |
| City: <u>Rangely</u> State: <u>CO</u> Zip: <u>81648</u> | | Fax: <u>970-675-3809</u> |
| Contact Person: <u>E. Faithe Schwartzengraber - HE Specialist Environmental</u> | | Email: <u>efsc@chevron.com</u> |

DESCRIPTION OF SPILL OR RELEASE

| | | |
|---|---|--|
| Date of Incident: <u>7-Jan-12</u> | Facility Name & No: <u>Rangely Weber Sand Unit</u> | County: <u>Rio Blanco</u> |
| Type of Facility (well, tank battery, flow line, pit): <u>Injection Line</u> | | QtrQtr: <u>NENW</u> Section: <u>26</u> |
| Well Name and Number: <u>Emerald 82X</u> | | Township: <u>2N</u> Range: <u>103W</u> |
| API Number: <u>05-103-0849200</u> | | Meridian: <u>6PM</u> |
| Specify volume spilled and recovered (in bbls) for the following materials: | | |
| Oil spilled: <u>0</u> | Oil recov'd: <u>0</u> | Water spilled: <u>50.69</u> Water recov'd: <u>33</u> Other spilled: <u>0</u> Other recov'd: <u>0</u> |
| Ground Water impacted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Surface Water impacted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Contained within berm? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Area and vertical extent of spill: <u>3154.11 X 87.2 (total)</u> | |
| Current land use: <u>Non Crop Land</u> | Weather conditions: <u>8 Degrees F</u> | |
| Soil/geology description: <u>Silty Clay</u> | | |
| IF LESS THAN A MILE , report distance IN FEET to nearest ... | Surface water: <u>2,117</u> | wetlands: <u>> Mile</u> buildings: <u>4229 ft</u> |
| | Livestock: <u>None</u> | Water wells: <u>> Mile</u> Depth to shallowest ground water: <u>3189 ft</u> |
| Cause of spill (e.g. equipment failure, human error, etc.): <u>Gasket Failure</u> | Detailed description of the spill/release incident: | |
| <p>A leak occurred on a three inch fiberglass pipe approximately 50 feet north of Emerald 82X. Approximately 50.69 bbls of brine water and 0 bbls of crude oil were released.</p> | | |

CORRECTIVE ACTION

Describe immediate response (how stopped, contained and recovered): The line was shut in immediately upon detection. Vacuum trucks removed all of the free fluid, estimated recovery is approximately 33 bbls of brine water and 0 bbls of crude oil. The fluids that were picked up were taken to the truck unloading facility at the Main Water Plant for recycling.

Describe any emergency pits constructed: NA

How was the extent of contamination determined?
Visual Inspection. Chevron MCA Spill Calculation Worksheet.

Further remediation activities proposed (attach separate sheet if needed):

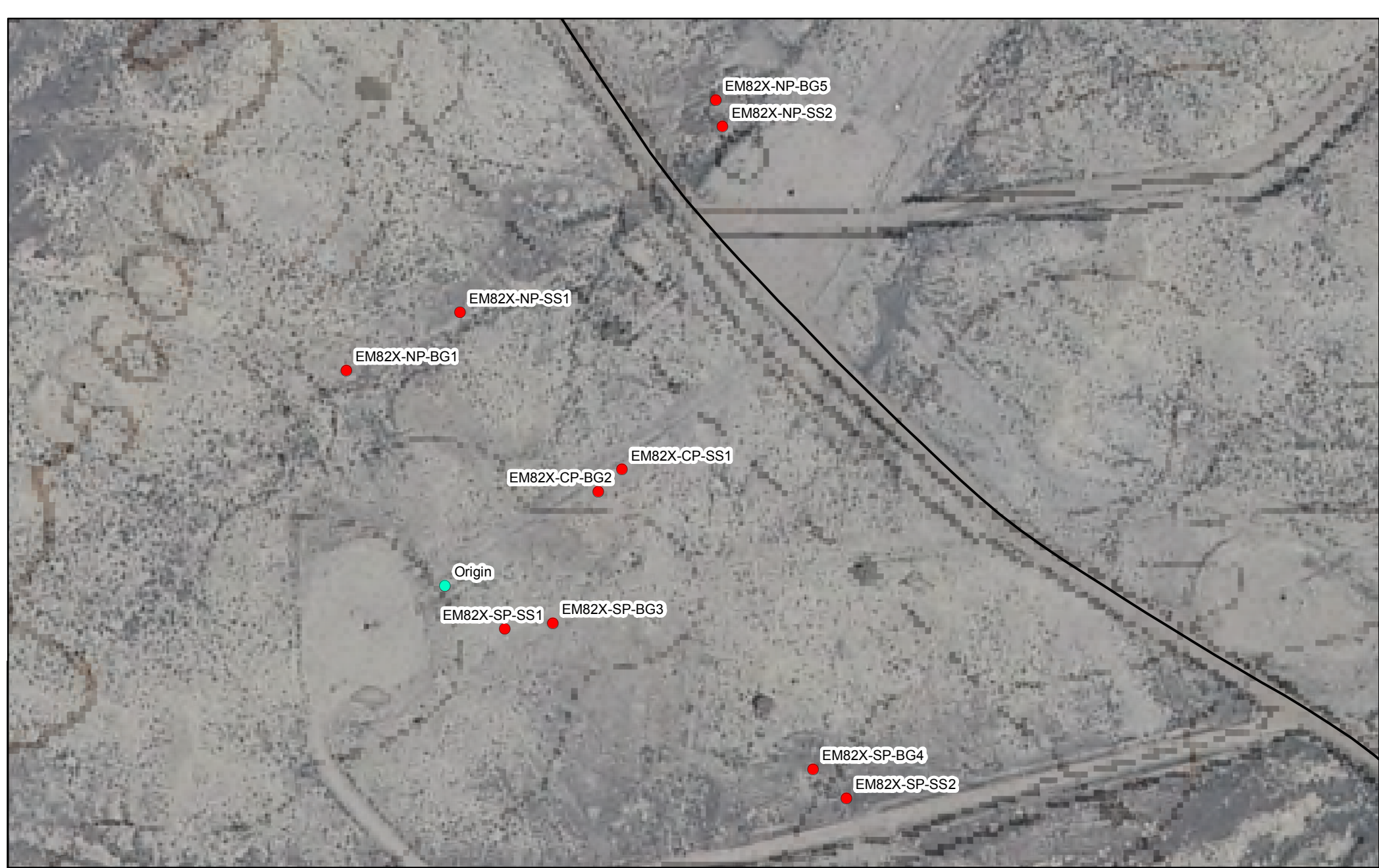
Describe measures taken to prevent problem from reoccurring: Replace damaged pipe and return to service.

OTHER NOTIFICATIONS

List the parties and agencies notified (County, BLM, EPA, DOT, Local Emergency Planning Coordinator or other).

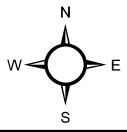
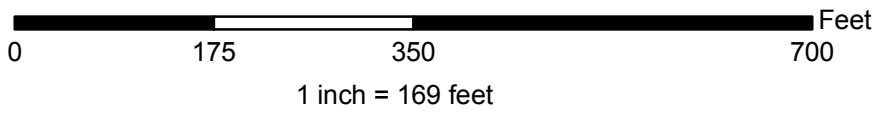
| Date | Agency | Contact | Phone | Response |
|------------|--------|----------------|--------------|----------------------------|
| 7-Jan-12 | COGCC | Chris Canfield | 970-625-2497 | Left Voice Mail at 11:03am |
| 02/10/2014 | COGCC | Kris Keidel | 970-871-1963 | Resubmitted Form 19 |
| | | | | |
| | | | | |

Spill/Release Tracking No: 2147725



- Spill Origin
- Soil Sample Locations

— Chevron Roads



| | |
|-------------|---------------|
| PROJECT NO: | 009-0082 |
| DRAWN BY: | Sara Stoddart |
| DATE: | 1/18/2012 |

**EMERALD 82X
 SPILL RESPONSE
 CHEVRON USA, INC
 RIO BLANCO COUNTY, COLORADO**



826 21-1/2 ROAD
 GRAND JUNCTION,
 CO 81505
 TEL 970.263.7800
 FAX 970.263.7456

| |
|--------|
| FIGURE |
| 1 |

Table 1
Emerald 6 Spill Response
Soil Data Summary

| SAMPLE SUMMARY | |
|----------------------|-----------------|
| Location Description | Emerald 6 Spill |
| Sample Type | Soil |

| LABORATORY DATA SUMMARY | | | | | | | | | | | | | | | |
|--|------------|-----------|-----------|------------|------------|-----------|-----------|------------|------------|------------|------------|-----------|-----------|--|----------|
| Sample ID | EM6-SS1 | EM6-SS1 | EM6-SS1 | EM6-SS2 | EM6-SS3 | EM6-SS3 | EM6-SS3 | EM6-SS4 | EM6-BG1 | EM6-BG2 | EM6-BG3 | EM6-BG4 | EM6-BG5 | COGCC TABLE 910-1 CONCENTRATION LEVELS | UNITS |
| Depth | 0-6" | 0-6" | 0-6" | 0-6" | 0-6" | 0-6" | 0-6" | 0-6" | 0-6" | 0-6" | 0-6" | 0-6" | 0-6" | | |
| Sample Date | 11/14/2011 | 4/18/2012 | 7/31/2013 | 11/14/2011 | 11/14/2011 | 4/18/2012 | 7/31/2013 | 11/14/2011 | 11/14/2011 | 11/14/2011 | 11/14/2011 | 4/18/2012 | 7/31/2013 | | |
| Analytical Parameters | | | | | | | | | | | | | | | |
| TPH | | | | | | | | | | | | | | | |
| TPH Gasoline Range Organics | <7.3 | NT | NT | <7.0 | <6.8 | NT | NT | <6.7 | NT | NT | NT | NT | NT | 500 | mg/kg |
| TPH Diesel Range Organics | 29.1 | NT | NT | 16.1 | 19.2 | NT | NT | 15.2 J | NT | NT | NT | NT | NT | | |
| BTEX | | | | | | | | | | | | | | | |
| Benzene | <0.032 | NT | NT | <0.031 | <0.030 | NT | NT | <0.029 | NT | NT | NT | NT | NT | 0.17 | mg/kg |
| Toluene | <0.073 | NT | NT | <0.070 | <0.068 | NT | NT | <0.067 | NT | NT | NT | NT | NT | 85 | mg/kg |
| Ethylbenzene | <0.036 | NT | NT | <0.035 | <0.034 | NT | NT | <0.033 | NT | NT | NT | NT | NT | 100 | mg/kg |
| Total Xylene | <0.15 | NT | NT | <0.14 | <0.14 | NT | NT | <0.13 | NT | NT | NT | NT | NT | 175 | mg/kg |
| Metals | | | | | | | | | | | | | | | |
| Arsenic | 6.2 | NT | NT | 7.0 | 7.4 | NT | NT | 6.7 | 6.6 | 6.5 | 6.5 | 5.77 | 5.5 | 0.39 | mg/kg |
| Barium | 189 | NT | NT | 206 | 412 | NT | NT | 1910 | 102 | NT | NT | NT | NT | 15,000 | mg/kg |
| Cadmium | <1.2 | NT | NT | <1.2 | <1.2 | NT | NT | <1.1 | <1.2 | NT | NT | NT | NT | 70 | mg/kg |
| Chromium | 9.5 | NT | NT | 9.8 | 10.3 | NT | NT | 10 | 10.3 | NT | NT | NT | NT | NA | mg/kg |
| Copper | 13.9 | NT | NT | 14.1 | 13.6 | NT | NT | 12.8 | 13.7 | NT | NT | NT | NT | 3,100 | mg/kg |
| Lead | 15.2 | NT | NT | 17.7 | 17.8 | NT | NT | 22.2 | 14.9 | NT | NT | NT | NT | 400 | mg/kg |
| Mercury | <0.11 | NT | NT | <0.13 | <0.11 | NT | NT | <0.12 | <0.12 | NT | NT | NT | NT | 23 | mg/kg |
| Nickel | 14.3 | NT | NT | 16.7 | 16.1 | NT | NT | 16.1 | 13.9 | NT | NT | NT | NT | 1,600 | mg/kg |
| Selenium | <5.8 | NT | NT | <5.9 | <5.8 | NT | NT | <5.6 | <6.1 | NT | NT | NT | NT | 390 | mg/kg |
| Silver | <3.5 | NT | NT | <3.6 | <3.5 | NT | NT | <3.3 | <3.6 | NT | NT | NT | NT | 390 | mg/kg |
| Zinc | 59.9 | NT | NT | 76.8 | 74.3 | NT | NT | 76 | 58.7 | NT | NT | NT | NT | 23,000 | mg/kg |
| SAR Metals Analysis | | | | | | | | | | | | | | | |
| Calcium | 251 | 244 | NT | 42 | 655 | 684 | NT | 61.4 | 15.3 | NT | NT | NT | NT | NA | mg/L |
| Magnesium | 46.2 | 19.6 | NT | 7.74 | 147 | 36 | NT | 14.1 | 3.83 | NT | NT | NT | NT | NA | mg/L |
| Sodium | 2810 | 491 | NT | 62.1 | 1840 | 227 | NT | 251 | 50.4 | NT | NT | NT | NT | NA | mg/L |
| Sodium Adsorption Ratio | 42.7 | 8.13 | NT | 2.31 | 16.9 | 2.29 | NT | 7.51 | 2.98 | NT | NT | NT | NT | <12 | |
| Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | | | |
| Acenaphthene | <0.0065 | NT | NT | <0.0064 | <0.0063 | NT | NT | <0.0062 | NT | NT | NT | NT | NT | 1,000 | mg/kg |
| Anthracene | <0.0073 | NT | NT | <0.0072 | <0.0071 | NT | NT | <0.0070 | NT | NT | NT | NT | NT | 1,000 | mg/kg |
| Benzo(a)anthracene | <0.011 | NT | NT | <0.010 | <0.010 | NT | NT | <0.010 | NT | NT | NT | NT | NT | 0.22 | mg/kg |
| Benzo(a)pyrene | <0.015 | NT | NT | <0.014 | <0.014 | NT | NT | <0.014 | NT | NT | NT | NT | NT | 0.022 | mg/kg |
| Benzo(b)fluoranthene | <0.015 | NT | NT | <0.015 | <0.015 | NT | NT | <0.014 | NT | NT | NT | NT | NT | 0.22 | mg/kg |
| Benzo(k)fluoranthene | <0.009 | NT | NT | <0.0088 | <0.0087 | NT | NT | <0.0085 | NT | NT | NT | NT | NT | 2.2 | mg/kg |
| Chrysene | <0.009 | NT | NT | <0.0088 | <0.0087 | NT | NT | <0.0085 | NT | NT | NT | NT | NT | 22 | mg/kg |
| Dibenzo(a,h)anthracene | <0.015 | NT | NT | <0.015 | <0.015 | NT | NT | <0.014 | NT | NT | NT | NT | NT | 0.022 | mg/kg |
| Fluoranthene | <0.0082 | NT | NT | <0.0080 | <0.0079 | NT | NT | <0.0078 | NT | NT | NT | NT | NT | 1,000 | mg/kg |
| Fluorene | <0.0069 | NT | NT | <0.0068 | <0.0067 | NT | NT | <0.0066 | NT | NT | NT | NT | NT | 1,000 | mg/kg |
| Indeno(1,2,3-cd)pyrene | <0.022 | NT | NT | <0.022 | <0.022 | NT | NT | <0.021 | NT | NT | NT | NT | NT | 0.22 | mg/kg |
| Naphthalene | <0.0078 | NT | NT | <0.0076 | <0.0075 | NT | NT | <0.0074 | NT | NT | NT | NT | NT | 23 | mg/kg |
| Pyrene | <0.0078 | NT | NT | <0.0076 | <0.0075 | NT | NT | <0.0074 | NT | NT | NT | NT | NT | 1,000 | mg/kg |
| General Chemistry | | | | | | | | | | | | | | | |
| Chromium, Hexavalent | <0.48 | NT | NT | 0.49 | <0.46 | NT | NT | 0.46 | 0.49 | NT | NT | NT | NT | 23 | mg/kg |
| Chromium, Trivalent | 9.1 | NT | NT | 9.3 | 10 | NT | NT | 9.5 | 9.8 | NT | NT | NT | NT | 120,000 | mg/kg |
| Redox Potential Vs H2 | 430 | NT | NT | 441 | 483 | NT | NT | 452 | 435 | NT | NT | NT | NT | NA | mv |
| Solids, Percent | 81.3 | NT | NT | 82.8 | 84.2 | NT | NT | 85.6 | 87.5 | 88.6 | 88.2 | NT | NT | NA | % |
| Specific Conductivity | 14.7 | 8.17 | 2.08 | 0.554 | 13.1 | 4.48 | 3.68 | 1.67 | 0.311 | NT | NT | NT | NT | <4 or 2 x the background | mmhos/cm |
| pH | 9.03 | 7.86 | NT | 9.26 | 8.61 | NT | NT | 9.27 | 9.06 | NT | NT | NT | NT | 6-9 | su |

mg/kg - milligrams per kilogram
mg/L - milligrams per liter
J - indicates an estimated value
mmhos/cm - millimhos per centimeter
mv - millivolts
su - standard units
NA - not applicable
NT - parameter was not tested

Over COGCC Table 910-1 Concentration Levels but under BACKGROUND level.
Over COGCC Table 910-1 Concentration Levels and not within BACKGROUND level.
Over COGCC Table 910-1 Concentration Levels



13-Aug-2013

Tim Dobransky
Olsson Associates
760 Horizon Drive, Suite 102
Grand Junction, Colorado 81506

Tel: (970) 263-7800
Fax: (970) 263-7456

Re: Emerald 6 Spill Followup 9.0082.202.202004

Work Order: **1308179**

Dear Tim,

ALS Environmental received 3 samples on 03-Aug-2013 09:35 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 15.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in cursive script that reads "Sonia West".

Electronically approved by: Luke F. Hernandez

Sonia West
Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

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Environmental

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RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: Emerald 6 Spill Followup 9.0082.202.202004
Work Order: 1308179

Work Order Sample Summary

| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u> |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|--------------------------|
| 1308179-01 | EM6-SS1 | Soil | | 7/31/2013 15:45 | 8/3/2013 09:35 | <input type="checkbox"/> |
| 1308179-02 | EM6-SS3 | Soil | | 7/31/2013 15:55 | 8/3/2013 09:35 | <input type="checkbox"/> |
| 1308179-03 | EM6-BG5 | Soil | | 7/31/2013 16:05 | 8/3/2013 09:35 | <input type="checkbox"/> |

ALS Environmental

Date: 13-Aug-13

Client: Olsson Associates
Project: Emerald 6 Spill Followup 9.0082.202.202004
Work Order: 1308179

Case Narrative

No Exceptions

ALS Environmental

Date: 13-Aug-13

Client: Olsson Associates

Project: Emerald 6 Spill Followup 9.0082.202.202004

Work Order: 1308179

Sample ID: EM6-SS1

Lab ID: 1308179-01

Collection Date: 7/31/2013 03:45 PM

Matrix: SOIL

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Prep | Date Analyzed |
|---|--------|------|---------------------|----------------|-----------------|---------------------|--------------------|
| LA29B ELECTRICAL CONDUCTIVITY | | | LADNR-29B EC | | | Analyst: PPM | |
| Electrical Conductivity @ saturation | 2.08 | | 0.0100 | mmhos/cm @25°C | 1 | | 8/12/2013 04:00 PM |
| Electrical Conductivity, 1:1 aqueous | 0.872 | | 0.0100 | mmhos/cm @25°C | 1 | | 8/12/2013 04:00 PM |
| LA29B SATURATION POINT (AS FRACTION) | | | LADNR-29B SP | | | Analyst: KAH | |
| Saturation Point | 0.418 | | 0.100 | SP as fraction | 1 | | 8/9/2013 11:50 AM |
| MOISTURE | | | SW3550 | | | Analyst: KAH | |
| Percent Moisture | 3.29 | | 0.0100 | wt% | 1 | | 8/9/2013 02:35 PM |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 13-Aug-13

Client: Olsson Associates

Project: Emerald 6 Spill Followup 9.0082.202.202004

Work Order: 1308179

Sample ID: EM6-SS3

Lab ID: 1308179-02

Collection Date: 7/31/2013 03:55 PM

Matrix: SOIL

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Prep | Date Analyzed |
|---|--------|------|---------------------|----------------|-----------------|---------------------|--------------------|
| LA29B ELECTRICAL CONDUCTIVITY | | | LADNR-29B EC | | | Analyst: PPM | |
| Electrical Conductivity @ saturation | 3.68 | | 0.0100 | mmhos/cm @25°C | 1 | | 8/12/2013 04:00 PM |
| Electrical Conductivity, 1:1 aqueous | 1.37 | | 0.0100 | mmhos/cm @25°C | 1 | | 8/12/2013 04:00 PM |
| LA29B SATURATION POINT (AS FRACTION) | | | LADNR-29B SP | | | Analyst: KAH | |
| Saturation Point | 0.372 | | 0.100 | SP as fraction | 1 | | 8/9/2013 11:50 AM |
| MOISTURE | | | SW3550 | | | Analyst: KAH | |
| Percent Moisture | 8.69 | | 0.0100 | wt% | 1 | | 8/9/2013 02:35 PM |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 13-Aug-13

Client: Olsson Associates
Project: Emerald 6 Spill Followup 9.0082.202.202004
Sample ID: EM6-BG5
Collection Date: 7/31/2013 04:05 PM

Work Order: 1308179
Lab ID: 1308179-03
Matrix: SOIL

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Prep | Date Analyzed |
|---------------|--------|------|---------------|-------|-----------------|-----------|---------------------|
| METALS | | | SW6020 | | SW3050A | | Analyst: SKS |
| Arsenic | 5.50 | | 0.474 | mg/Kg | 1 | 8/6/2013 | 8/6/2013 06:46 PM |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Work Order: 1308179
 Client: Olsson Associates
 Project: Emerald 6 Spill Followup 9.0082.202.202004

DATES REPORT

| Sample ID | Client Sample ID | Matrix | Collection Date | TCLP Date | Prep Date | Analysis Date |
|--|------------------|--------|----------------------|-----------|-------------------|--------------------|
| <u>Batch ID 72097</u> <u>Test Name: Metals</u> | | | | | | |
| 1308179-03A | EM6-BG5 | Soil | 7/31/2013 4:05:00 PM | | 8/6/2013 12:00 PM | 8/6/2013 06:46 PM |
| <u>Batch ID R151991</u> <u>Test Name: Moisture</u> | | | | | | |
| 1308179-01A | EM6-SS1 | Soil | 7/31/2013 3:45:00 PM | | | 8/9/2013 02:35 PM |
| 1308179-02A | EM6-SS3 | | 7/31/2013 3:55:00 PM | | | 8/9/2013 02:35 PM |
| <u>Batch ID R152022</u> <u>Test Name: La29B Saturation Point (as fraction)</u> | | | | | | |
| 1308179-01A | EM6-SS1 | Soil | 7/31/2013 3:45:00 PM | | | 8/9/2013 11:50 AM |
| 1308179-02A | EM6-SS3 | | 7/31/2013 3:55:00 PM | | | 8/9/2013 11:50 AM |
| <u>Batch ID R152045</u> <u>Test Name: La29B Electrical Conductivity</u> | | | | | | |
| 1308179-01A | EM6-SS1 | Soil | 7/31/2013 3:45:00 PM | | | 8/12/2013 04:00 PM |
| 1308179-02A | EM6-SS3 | | 7/31/2013 3:55:00 PM | | | 8/12/2013 04:00 PM |

Client: Olsson Associates
Work Order: 1308179
Project: Emerald 6 Spill Followup 9.0082.202.202004

QC BATCH REPORT

Batch ID: **72097** Instrument ID **ICPMS05** Method: **SW6020**

| | | | | | | | | | | |
|-------------|---------------------------------------|-------|---------|---------------|-----------------------|---------------|---|------|--------------|------|
| MBLK | Sample ID: MBLKS2-080613-72097 | | | | Units: mg/Kg | | Analysis Date: 8/6/2013 06:03 PM | | | |
| Client ID: | Run ID: ICPMS05_130806A | | | | SeqNo: 3314094 | | Prep Date: 8/6/2013 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Arsenic | U | 0.500 | | | | | | | | |

| | | | | | | | | | | |
|------------|---------------------------------------|-------|---------|---------------|-----------------------|---------------|---|------|--------------|------|
| LCS | Sample ID: MLCSS2-080613-72097 | | | | Units: mg/Kg | | Analysis Date: 8/6/2013 06:06 PM | | | |
| Client ID: | Run ID: ICPMS05_130806A | | | | SeqNo: 3314095 | | Prep Date: 8/6/2013 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Arsenic | 9.051 | 0.500 | 10 | 0 | 90.5 | 80-120 | | | | |

| | | | | | | | | | | |
|------------|---------------------------------|-------|---------|---------------|-----------------------|---------------|---|------|--------------|------|
| MS | Sample ID: 1308181-03AMS | | | | Units: mg/Kg | | Analysis Date: 8/6/2013 06:58 PM | | | |
| Client ID: | Run ID: ICPMS05_130806A | | | | SeqNo: 3314117 | | Prep Date: 8/6/2013 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Arsenic | 15.29 | 0.487 | 9.738 | 5.782 | 97.6 | 75-125 | | | | |

| | | | | | | | | | | |
|------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|---|-------|--------------|------|
| MSD | Sample ID: 1308181-03AMSD | | | | Units: mg/Kg | | Analysis Date: 8/6/2013 07:01 PM | | | |
| Client ID: | Run ID: ICPMS05_130806A | | | | SeqNo: 3314118 | | Prep Date: 8/6/2013 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Arsenic | 15.23 | 0.476 | 9.515 | 5.782 | 99.3 | 75-125 | 15.29 | 0.408 | 25 | |

| | | | | | | | | | | |
|------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|---|------|--------------|------|
| DUP | Sample ID: 1308181-03ADUP | | | | Units: mg/Kg | | Analysis Date: 8/6/2013 06:53 PM | | | |
| Client ID: | Run ID: ICPMS05_130806A | | | | SeqNo: 3314115 | | Prep Date: 8/6/2013 | | DF: 1 | |
| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Arsenic | 6.591 | 0.474 | | | | | 5.782 | 13.1 | 25 | |

The following samples were analyzed in this batch: 1308179-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1308179
Project: Emerald 6 Spill Followup 9.0082.202.202004

QC BATCH REPORT

Batch ID: **R151991** Instrument ID **Balance1** Method: **SW3550** **(Dissolve)**

DUP Sample ID: **1308179-02ADUP** Units: **wt%** Analysis Date: **8/9/2013 02:35 PM**

Client ID: **EM6-SS3** Run ID: **BALANCE1_130809C** SeqNo: **3318407** Prep Date: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------------|--------|--------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Percent Moisture | 8.46 | 0.0100 | | | | | 8.695 | 2.74 | 20 | |

The following samples were analyzed in this batch:

| | |
|-------------|-------------|
| 1308179-01A | 1308179-02A |
|-------------|-------------|

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1308179
Project: Emerald 6 Spill Followup 9.0082.202.202004

QC BATCH REPORT

Batch ID: **R152022** Instrument ID **Balance1** Method: **LaDNR-29B SP (Dissolve)**

DUP Sample ID: **1308190-01ADUP** Units: **SP as fraction** Analysis Date: **8/9/2013 11:50 AM**

Client ID: Run ID: **BALANCE1_130809E** SeqNo: **3318803** Prep Date: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------------|--------|-------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Saturation Point | 0.417 | 0.100 | | | | | 0.426 | 2.14 | 30 | |

The following samples were analyzed in this batch:

| | |
|-------------|-------------|
| 1308179-01A | 1308179-02A |
|-------------|-------------|

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
 Work Order: 1308179
 Project: Emerald 6 Spill Followup 9.0082.202.202004

QC BATCH REPORT

Batch ID: **R152045** Instrument ID **WetChem** Method: **LaDNR-29B EC (Dissolve)**

MBLK Sample ID: **WBLKW1-130812-R152045** Units: **mmhos/cm @25°C** Analysis Date: **8/12/2013 04:00 PM**

Client ID: Run ID: **WETCHEM_130812Q** SeqNo: **3319200** Prep Date: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|--------------------------------------|--------|--------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Electrical Conductivity @ saturation | U | 0.0100 | | | | | | | | |
| Electrical Conductivity, 1:1 aqueous | U | 0.0100 | | | | | | | | |

LCS Sample ID: **WLCSW1-130812-R152045** Units: **mmhos/cm @25°C** Analysis Date: **8/12/2013 04:00 PM**

Client ID: Run ID: **WETCHEM_130812Q** SeqNo: **3319201** Prep Date: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|--------------------------------------|--------|--------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Electrical Conductivity, 1:1 aqueous | 1.41 | 0.0100 | 1.413 | | 0 | 99.8 | 90-110 | | | |

DUP Sample ID: **1308190-01ADUP** Units: **mmhos/cm @25°C** Analysis Date: **8/12/2013 04:00 PM**

Client ID: Run ID: **WETCHEM_130812Q** SeqNo: **3319218** Prep Date: DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|--------------------------------------|--------|--------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Electrical Conductivity @ saturation | 11.56 | 0.0100 | | | | | 11.44 | 1.03 | 20 | |
| Electrical Conductivity, 1:1 aqueous | 4.82 | 0.0100 | | | | | 4.87 | 1.03 | 20 | |

The following samples were analyzed in this batch: 1308179-01A 1308179-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Project: Emerald 6 Spill Followup 9.0082.202.202004
WorkOrder: 1308179

**QUALIFIERS,
ACRONYMS, UNITS**

| <u>Qualifier</u> | <u>Description</u> |
|------------------|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| M | Manually integrated, see raw data for justification |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL |

| <u>Acronym</u> | <u>Description</u> |
|----------------|-------------------------------------|
| DCS | Detectability Check Study |
| DUP | Method Duplicate |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitation Limit |
| SD | Serial Dilution |
| SDL | Sample Detection Limit |
| TRRP | Texas Risk Reduction Program |

| <u>Units Reported</u> | <u>Description</u> |
|-----------------------|-------------------------|
| mg/Kg | Milligrams per Kilogram |
| mmhos/cm @25°C | |
| SP as fraction | |
| wt% | |

Sample Receipt Checklist

Client Name: **OLSSON ASSOC - GRAND JUNC**

Date/Time Received: **03-Aug-13 09:35**

Work Order: **1308179**

Received by: **RDH**

Checklist completed by Johanna B. Allen 05-Aug-13
eSignature Date

Reviewed by: Senia West 05-Aug-13
eSignature Date

Matrices: soil

Carrier name: FedEx Saturday Priority

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- Chain of custody present? Yes No
- Chain of custody signed when relinquished and received? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No

Temperature(s)/Thermometer(s): 4.6 C/4.6 C;5.3 C/5.3 C;5.4 C/5.4 C u/c IR 1

Cooler(s)/Kit(s): Large Blue/White;Large Blue/White;Medium Blue/White;

Date/Time sample(s) sent to storage: 08/05/13 13:20

Water - VOA vials have zero headspace? Yes No No VOA vials submitted

Water - pH acceptable upon receipt? Yes No N/A

pH adjusted? Yes No N/A

pH adjusted by:

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ORIGIN ID: GJTA (970) 270-2986
TIM DOBRANSKY
OLSSON ASSOCIATES, INC.
760 HORIZON DRIVE STE 102

SHIP DATE: 02AUG13
ACTWTG: 75.0 LB MAN
CAD: 390082/CAFE2608

GRAND JUNCTION, CO 81506
UNITED STATES US

BILL SENDER

ORIGIN ID: GJTA (970) 270-2986
TIM DOBRANSKY
OLSSON ASSOCIATES, INC.
760 HORIZON DRIVE STE 102

SHIP DATE: 02AUG13
ACTWTG: 75.0 LB MAN
CAD: 390082/CAFE2608

GRAND JUNCTION, CO 81506
UNITED STATES US

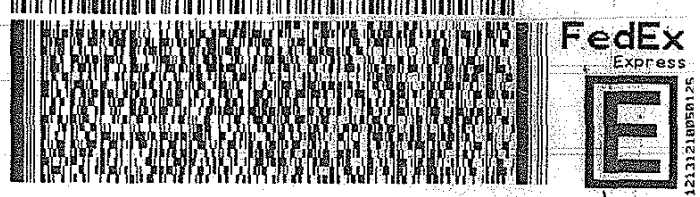
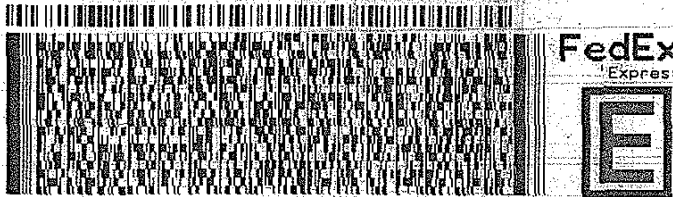
BILL SENDER

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
10450 STANCLIFF RD. #210

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
10450 STANCLIFF RD. #210

HOUSTON TX 77099
(281) 530-5656
PO: 9.0082.203.203004

HOUSTON TX 77099
(281) 530-5656
PO: 9.0082.203.203004



2 of 3
MPS# 0263 5632 6808 2949

SATURDAY 12:00P
PRIORITY OVERNIGHT

Mstr# 5632 6808 2938

0201

X0 SGRA

77099
TX-US IAH

3 of 3
MPS# 0263 5632 6808 2950

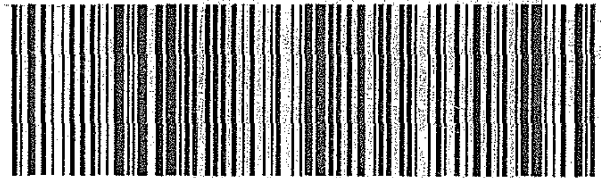
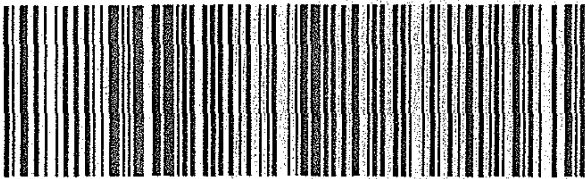
SATURDAY 12:00P
PRIORITY OVERNIGHT

Mstr# 5632 6808 2938

0201

X0 SGRA

77099
TX-US IAH



Part # 156148-434 NRTT 08-07

SHIP DATE: 02AUG13
ACTWTG: 75.0 LB MAN
CAD: 390082/CAFE2608
BILL SENDER

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
10450 STANCLIFF RD. #210

HOUSTON TX 77099
(281) 530-5656
PO: 9.0082.203.203004



SATURDAY 12:00P
PRIORITY OVERNIGHT

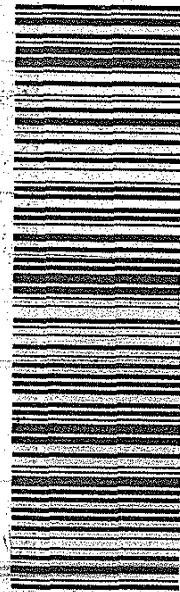
1 of 3

TRKH# 5632 6808 2938

MSTR#

X0 SGRA

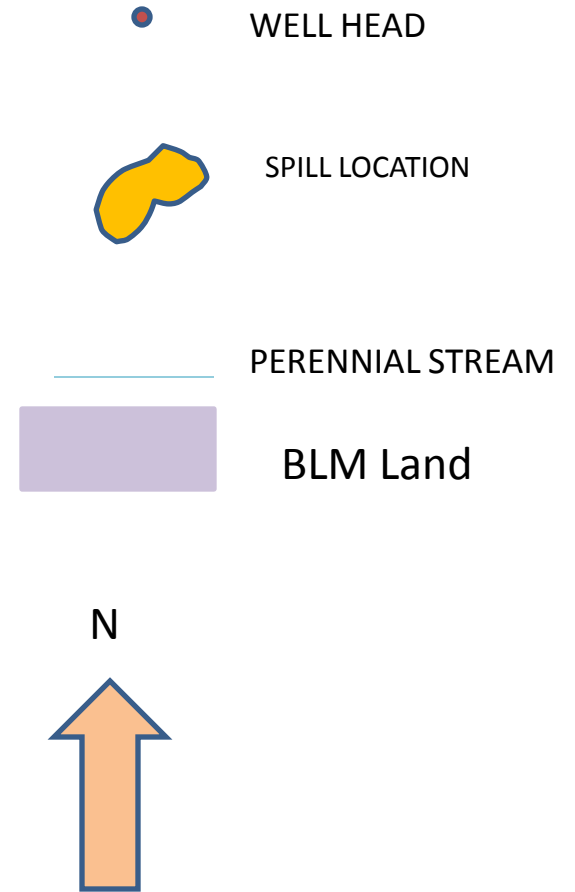
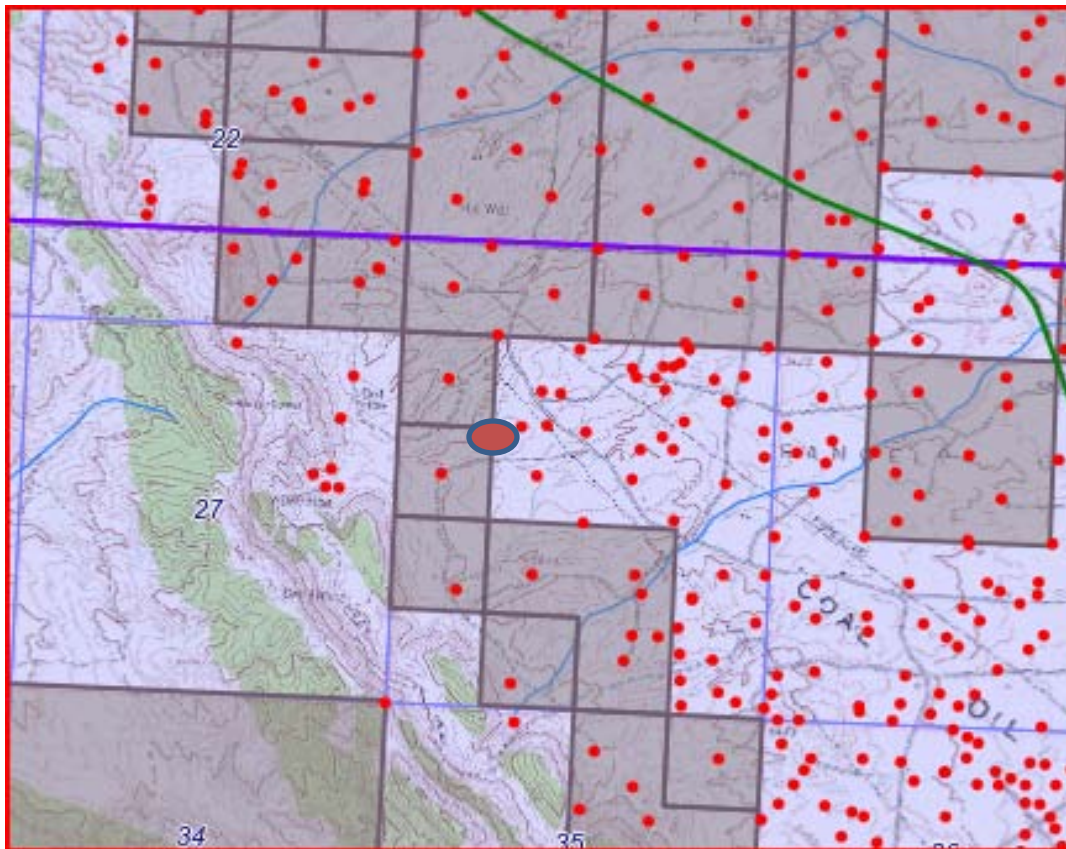
77099
TX-US IAH



Part # 156148-434 NRTT 08-07

Signature: [Signature] Date: 8/2/13
Signature: [Signature] Date: 8/2/13
Signature: [Signature] Date: 8/2/13
Signature: [Signature] Date: 8/2/13

Chevron-Emerald 82X



Chevron-Emerald 82X

