| 6/06/2018     | SUSPENSE   | PDG-  | 6/06/2010<br>LOGGED IN  | SGD<br>TYPE  | Pur Am 16 15 85806  |
|---------------|--|---|---|--|---|
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|               | NEW N  | MEXICO OIL CO   | DNSERVATION   | DIVISION   | 40  |
|               | <u>`</u> 122   | - Enginee<br>20 South St. Francis   | Drive, Santa Fe, NM   | 87505  |   |
|               |  |   |   |  |   |
|               |  |   |   |  |   |
|               |  | WHICH REQUIRE PROC  | CESSING AT THE DIVISIO  | N LEVEL IN SANTA F   | E   |
| (NSL-N<br>(DH | lon-Standard Lo<br>IC-Downhole Co<br>IPC-Pool Com<br>IWFX-W<br>[S<br>DR-Qualified Er | ocation] [NSP-Non-<br>ommingling] [CTE<br>mingling] [OLS - C<br>laterflood Expansion<br>WD-Salt Water Disp<br>nhanced Oil Recover | Standard Proration<br>B-Lease Comminglir<br>Off-Lease Storage]<br>n] [PMX-Pressure<br>osal] [IPI-Injection<br>ry Certification] [ | Unit] [SD-Simul<br>Ig] [PLC-Pool/<br>[OLM-Off-Leas<br>Maintenance E<br>P Pressure Incre<br>PPR-Positive Pr | taneous Dedication]<br>Lease Commingling]<br>e Measurement]<br>xpansion]<br>ease]<br>oduction Response]<br>くんの 4(35 |
| ] TYPE        | OF APPLICA<br>[A] Locat  | TION - Check Thos<br>ion - Spacing Unit -<br>NSL NSP  | e Which Apply for [<br>Simultaneous Dedic:<br>] SD  | <sup>[A]</sup> Basic<br><sup>ation</sup> Isaia<br>(30-0  | c Energy Services, LP<br>h Fee SWD 1<br>115-43742)  |
|               | Check One Or<br>[B] Comm   | nly for [B] or [C]<br>ningling - Storage - M<br>DHC 🔲 CTB [   | Measurement   |  | ; Devonian<br>קנוסן<br>OLM  |
|               | [C] Inject   | ion - Disposal - Press<br>VFX 🗌 PMX 🎝   | sure Increase - Enha<br>X SWD 🗌 IPI   | nced Oil Recove  | ry<br>PPR   |
|               | [D] Other  | Specify   |   |  |   |
| ] NOTI        | FICATION RE<br>[A] X V   | CQUIRED TO: - Ch<br>Vorking, Royalty or (   | neck Those Which A<br>Overriding Royalty I  | pply, or Does interest Owners  | Not Apply   |
|               | [B] X C  | Offset Operators, Lea   | seholders or Surface  | Owner  |   |
|               | [C] X A  | Application is One W  | hich Requires Publi   | shed Legal Notic   | e 🚊 🎞   |
|               | [D] [D] N  | Notification and/or C<br>S. Bureau of Land Managemen  | oncurrent Approval  | by BLM or SLO<br>ds, State Land Office   |   |
|               | [E] X F  | or all of the above, H  | Proof of Notification   | or Publication is  | Attached, and/or,   |
|               | [F] 🗌 V  | Vaivers are Attached  |   |  | 2 S   |
| ] SUBM        | IT ACCURAT   | TE AND COMPLE   | TE INFORMATIO   | N REQUIRED   | TO PROCESS THE-TYPI   |

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[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

| 75jh      | and | Consultant         | 6-6-16  |
|-----------|-----|--------------------|---|
| Signature | -(  | Title              | Date  |
|           |     | brian@permitswest. | com   |
|           |     | Signature          | Signature Consultant<br>Title<br>brian@permitswest. |

e-mail Address

, STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

3

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, New Mexico 87505

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#### APPLICATION FOR AUTHORIZATION TO INJECT

|        | AT HICKNOW TO KNOW TO MODEL   |
|--------|---|
| l.     | PURPOSE:       Secondary Recovery       Pressure Maintenance       XXX       Disposal       Storage         Application qualifies for administrative approval?       Yes       No   |
| II.    | OPERATOR: BASIC ENERGY SERVICES, LP   |
| a.     | ADDRESS: P. O. BOX 1175, ARTESIA NM 88211   |
|        | CONTACT PARTY: BRIAN WOOD (PERMITS WEST, INC.) PHONE: 505 466-8120  |
| III.   | WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.<br>Additional sheets may be attached if necessary.   |
| IV.    | Is this an expansion of an existing project? Yes XXX No<br>If yes, give the Division order number authorizing the project:  |
| V.     | Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.   |
| VI.    | Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone.<br>Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.   |
| VII.   | Attach data on the proposed operation, including: <b>Isaiah Fee SWD 1</b><br><b>30-015-43742</b>  |
|        | <ol> <li>Proposed average and maximum daily rate and volume of fluids to be injected;</li> <li>Whether the system is open or closed;</li> </ol>   |
|        | <ol> <li>Proposed average and maximum injection pressure;</li> <li>Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and.</li> </ol>   |
|        | 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).  |
| *VIII. | Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval. |
| IX.    | Describe the proposed stimulation program, if any.  |
| *X.    | Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).   |
| *XI.   | Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.   |
| XII.   | Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.  |
| XIII.  | Applicants must complete the "Proof of Notice" section on the reverse side of this form.  |
| XIV.   | Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.  |
|        | NAME: BRIAN WOOD  |
|        | SIGNATURE: DATE: JUNE 3, 2016   |
|        | E-MAIL ADDRESS:brian@permitswest.com  |
| *      | If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted.<br>Please show the date and circumstances of the earlier submittal:   |

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

#### Side 2

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#### III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:
  - (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
  - (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
  - (3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

- B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.
  - (1) The name of the injection formation and, if applicable, the field or pool name.
  - (2) The injection interval and whether it is perforated or open-hole.
  - (3) State if the well was drilled for injection or, if not, the original purpose of the well.
  - (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
  - (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.
- XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

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# NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.



-- (Perforated or Open Hole; indicate which)

# **INJECTION WELL DATA SHEET**

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|-----|--|
| Tub | bing Size:Lining Material: _PLASTIC  |
| Тур | pe of Packer: ARROWSET NICKEL PLATED 7" X 3.5" NICKEL PLATED STAINLESS STEE  |
| Pac | cker Setting Depth: _≈13,500 '   |
| Oth | her Type of Tubing/Casing Seal (if applicable):  |
|     | Additional Data  |
| 1.  | Is this a new well drilled for injection? XXX YesNo  |
|     | If no, for what purpose was the well originally drilled?   |
| 2.  | Name of the Injection Formation: DEVONIAN  |
| !3. | Name of Field or Pool (if applicable): <u>SWD; DEVONIAN</u> (96101)  |
| 4.  | Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. <u>NOT IN OTHER ZONES</u> |
| 5.  | Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:   |
|     | UNDER: NONE  |

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30-015-43742

PAGE 1

I. Plan is to drill a 14,600' deep commercial saltwater disposal well. Proposed disposal interval will be 13,540' – 14,600' in the SWD; Devonian (96101). See Exhibit A for map and Form C-102.

- II. Operator: Basic Energy Services, LP
   Operator phone number: (575) 746-2072
   Operator address: P. O. Box 1375, Artesia NM 88211
   Contact for Application: Brian Wood (Permits West, Inc.)
   Phone: (505) 466-8120
- III. A. (1) Lease name: Isaiah Fee SWD
   Well name and number: Isaiah Fee SWD 1
   Location: 1435' FNL & 1008' FWL Section 20, T. 23 S., R. 28 E.
  - A. (2) Conductor pipe (20", 94#, K-55, ST&C) will be set at 120' in a 26" hole and cemented to surface with 360 ft<sup>3</sup> ready-mix. Excess: 100%.

Surface casing (13.375", 54.5#, K-55, ST&C) will be set at 2,400' in a 17.5" hole and cemented to surface with 1215 sacks 65/35/6 Class C (12.6 ppg, 1.92 ft<sup>3</sup>/sack, & 10.38 water gal/sack) + 750 sacks Class C (14.8 ppg, 1.34 ft<sup>3</sup>/sack, & 6.34 water gal/sack). Excess: 100%.

First intermediate casing (9.625", 43.5#, N-80, LT&C) will be set at 6000' in a 12.25" hole.

Second intermediate casing (9.625", 47#, P-110, LT&C) will be set at 8935' in a 12.25" hole.

Intermediate casing will be cemented to surface with 1800 sacks 50/50 poz with Class H (11.8 ppg, 2.42 ft<sup>3</sup>/sack, & 14.04 water



PROVIDING PERMITS for LAND USERS

#### 30-015-43742

gal/sack) + 460 sacks 50/50 poz with Class H (14.2 ppg, 1.28 ft<sup>3</sup>/sack, & 5.68 water gal/sack). Excess: 100%.

Production casing (7", 29#, P-110, LT&C) will be set at 13,540' in an 8.5" hole and cemented to 8,000' with 330 sacks 50/50 poz with Class H (11.8 ppg, 2.42 ft<sup>3</sup>/sack, & 14.07 water gal/sack) + 200 sacks 50/50 poz with Class H (14.2 ppg, 1.29 ft<sup>3</sup>/sack, & 5.57 water gal/sack). Excess: 35%.

A 6.25" open hole will be drilled to 14,600' (TD).

- A. (3) Tubing will be 3.5", L-80, 7.7#, IPC. Setting depth will be  $\approx$ 13,500'. (Disposal interval will be 13,540' to 14,600'.)
- A. (4) An Arrowset 7" x 3.5" ASI-X nickel plated F nipple stainless steel packer will be set at  $\approx 13,500$ ' (or  $\leq 100$ ' above the top of the open hole which will be at 13,540').
- B. (1) Disposal zone will be the Devonian (SWD; Devonian (96101) pool). Estimated fracture gradient is ≈0.65 psi per foot.
- B. (2) Disposal interval will be open hole from 13,540' to 14,600'.
- B. (3) Well has not been drilled. It will be drilled as a saltwater disposal well.
- B. (4) No perforated intervals are in the well.
- B. (5) Eight existing wells are in the area of review. None penetrated the Devonian. Zones above the Devonian that have been tested in and around the area of-review are the Delaware (top 5,726'), Bone Spring (top 6,004'), Strawn (10,840), Atoka (top 11,083'), and Morrow (top 11,446'). No oil or gas zones are below the Devonian in the area of review.



PAGE 2

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30-015-43742

IV. This is not an expansion of an existing injection project. It is disposal only.

V. Exhibit B shows the 8 existing wells (4 gas + 2 SWD + 2 water) within a halfmile radius. Exhibit C shows all 107 existing wells (36 oil or gas wells + 15 P & A wells + 52 water wells + 4 disposal wells) within a two-mile radius.

Exhibits D and E shows all leases and lessors within a half-mile radius (only fee) and two-mile radius (BLM, fee, and State) leases within each radius.

VI. No well within  $\frac{1}{2}$  mile penetrated the Devonian (top = 13,540'). The closest (non-water) wells are:

| АРІ        | OPERATOR        | UL-<br>SECTION-<br>T23S-<br>R28E | TVD         | WELL<br>NAME              | WELL<br>TYPE | STATUS               | ZONE(S)<br>DEVELOPED                             | FEET<br>FROM<br>ISAIAH<br>FEE SWD<br>1 |
|------------|-----------------|----------------------------------|-------------|---------------------------|--------------|----------------------|--|--|
| 3001535569 | BC<br>Operating | E-20                             | 12650       | Cronos<br>Fee 1           | Gas          | Active               | Morrow   | 643                                    |
| 3001525141 | Basic           | E-20                             | 6500        | Belco 1                   | SWD          | Active               | Delaware   | 861                                    |
| 3001525433 | Basic           | F-20                             | 5930        | Belco 2                   | SWD          | Active               | Delaware   | 1308                                   |
| 3001523351 | BC<br>Operating | L-20                             | 12622       | Lakey<br>Com 1            | Gas          | Active               | Atoka,<br>Bone<br>Spring,<br>Morrow, &<br>Strawn | 1666.                                  |
| 3001523215 | Legacy          | H-19                             | 12580       | Guitar<br>Estate<br>Com 1 | Gas          | Active               | Morrow   | 1870                                   |
| 3001524105 | COG             | N-17                             | 12600       | Carter 1                  | Gas          | Active               | Atoka &<br>Morrow                                | 2302                                   |
| 3001543016 | BC<br>Operating | B-19                             | 15500<br>MD | Mariner<br>Fee 1H         | Oil          | New (no<br>spud yet) | Wolfcamp   | 2916                                   |



PAGE 3

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- VII. 1. Average injection rate will be  $\approx 15,000$  bwpd. Maximum injection rate will be  $\approx 20,000$  bwpd.
  - 2. System will be open and closed. Water will be trucked to an existing Basic battery (Exhibit F) and then piped 0.3 mile southwest to the well.
  - Average injection pressure will be ≈2,500 psi Maximum injection pressure will be 2,708 psi (= 0.2 psi/foot x 13,540' (top of open hole)).
  - 4. Main source of disposal water will be water produced from Bone Spring and Wolfcamp wells. However, water produced from the Atoka, Pennsylvanian, Morrow, Delaware, etc. could also be disposed. Water analyses are in Exhibit G. There are 182 approved Bone Spring wells and 106 approved Wolfcamp wells in T. 23 S., R. 27 & 28 E. and T. 24 S., R. 27 & 28 E. The well will take other Permian Basin waters (e. g., Delaware). No compatibility problems have been reported from the closest (2.3 miles southwest) Devonian disposal well (30-015-21643). The 12,546,414 barrels that have been disposed from 2009 to date include Delaware, Bone Spring, Strawn, Atoka, and Morrow waters.
  - 5. No Devonian producer is within a ≥4 mile radius. No water analyses have been filed from the 5 Devonian SWD wells within T. 23 S., R. 28 E. and the closest 3 townships. USGS Geochemical Database v2.2 (Provisional) shows TDS of 37,200 and 47,900 in the 2 closest (Andrews TX) closest Devonian wells in its database.

VIII. The Devonian ( $\approx$ 1,060' thick) is comprised of limestone and dolomite with relatively high porosity. See attached May 2, 2016 report (Exhibit H) from Dr. Powers for more information on the geology. Closest possible underground source of drinking water above the proposed disposal interval is the Quaternary at the surface. No underground source of drinking water is below the proposed disposal interval. According to State Engineer records (Exhibit I), nine water wells are within 1-mile, deepest of which is 250'.



PAGE 4

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Estimated formation tops are:

Quaternary = 0'Salado = 400'Castille (bottom) = 2400'Delaware = 2400'Bell Canyon = 2504' Cherry Canyon = 3238' Brushy Canyon = 3905' Bone Spring = 6004'Second Bone Spring = 7704' Third Bone Spring = 8935' Wolfcamp = 9272'Cisco = 10,200'Canyon = 10,402'Strawn = 10,840' Atoka = 11,083' Morrow = 11,446'Middle Morrow = 12,082'Lower Morrow = 12,370'Barnett = 12,577' Devonian = 13,540'disposal interval = 13,540' - 14,600' TD = 14,600'

Nine water wells are within a 1-mile radius according to State Engineer records (Exhibit I). One (C 00911) of the nine was found during February 12 & 13 and May 17, 2016 field inspections, but it is inactive. No one was home at the other 8 sites. Two wells were sampled (Exhibit J). One sample point is <sup>3</sup>/<sub>4</sub> mile south of Isaiah and the other is 1.3 miles SE of Isaiah. There will be 13,140' of vertical separation and the salt interval between the bottom of the only likely underground water source (Quaternary) and the top of the Devonian.

IX. The well will be stimulated with acid.



PAGE 6

BASIC ENERGY SERVICES, LP ISAIAH FEE SWD 1 1435' FNL & 1008' FWL SEC. 20, T. 23 S., R. 28 E. EDDY COUNTY, NM

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30-015-43742

X. DLL, GR/N density, and CBL logs will be run.

XI. Based on February 12-13 and May 17, 2016 field inspections, one active water well is within a one-mile radius and it was sampled. A second well, 1.3 miles from the proposed disposal well, was also sampled.

XII. Closest Quaternary fault (Guadalupe) is  $\approx$ 53 miles southwest (Exhibit K). Based on a review (Exhibit H) by geologist Dr. Dennis Powers, Basic Energy Services, LP is not aware of any geologic or engineering data that may indicate the Devonian is in hydrologic connection with any underground sources of water. Hundreds of feet of evaporites prevent that from occurring. Deepest water well within a 2-mile radius is 260' (Exhibit I). There are 129 approved Devonian saltwater disposal wells and 11 approved Devonian water injection wells in New Mexico.

XIII. A legal ad (see Exhibit L) was published on April 26, 2016. Notice (this application) has been sent (Exhibit M) to the surface owner (Henry McDonald) and lessees or operators (BC, Chevron, COG, Legacy, Mewbourne, Oxy USA WTP) within a half-mile.

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| 1 A) = (  |  |   |                   |                       |                          |                                      | CONSERVAL  |  |  |
|---|--|---|-------------------|-----------------------|--------------------------|--------------------------------------|--|--|--|
| DISTRICT I<br>1925 N. FRENCH DR., HOBBS, NN 885<br>Pagge: (383) 393-061 Par: (375) 393-07<br>DISTRICT II<br>811 S. FIRST ST., ARTESIA, NM 6<br>Phone: (375) 748-1283 Par: (375) 748 | * Energy<br>8210 OI  | , Mine<br>L C(  | erals &<br>ONSI   | State<br>& Nat<br>ERV | of Nev<br>ural H<br>ATIC | Mexico A<br>Resources De<br>DN DIVIS | APR 2 5 2016<br>epartment<br>RECEIVED  | F<br>Revised A<br>Submit one copy t  | Form C-102<br>ugust 1, 2011<br>o appropriate   |
| DISTRICT III<br>1000 RIO BRAZOS RD., AZTEC. NI<br>Phone: (505) 334-8178 Fas: (505)  | 4 87410  | S   | anta H            | re, Ne                | ew Me                    | xico 87505                           |  | Distri   | ct Office  |
| DISTRICT IV<br>1220 S. ST. FRANCIS DR., SANTA FE,<br>Phone: (505) 476-3460 Fax: (505)   | NE 87505<br>76-3462  |   |                   |                       |                          |                                      |  | 🗆 AMEND  | ED REPORT  |
| 30-015- <sup>API Number</sup><br>イラブイ   | 2  | LL LOC<br>Po<br>g   | 001 Code<br>06101 | AND                   | AUREA                    | GE DEDICATI                          | Pool Name<br>SWD; Devoni   | <br>an   |  |
| Property Code   | <u> </u>   |   | IS                | Proj<br>SAIAH         | perty Nam<br>FEE         | e<br>SWD                             |  | Well Nun   | nber   |
| OGRID No.<br>246368   |  |   | BASIC             | Oper<br>ENEI          | rator Name<br>RGY S      | ERVICES, LP                          |  | Elevatio<br>305  | <sup>nn</sup><br>7.8'  |
| ·   |  | <b></b>   |                   | Surfa                 | ce Loca                  | ition                                |  |  |  |
| UL or lot No. Section<br>E 20   | Township E<br>23-S 2   | <sup>Range</sup><br>28-E  | Lot Idn           | Feet fr<br>14         | om the<br>35             | North/South line<br>NORTH            | Feet from the<br>1008  | East/West line<br>WEST   | County<br>EDDY   |
|   | B(   | ottom I   | Hole Loc          | ation                 | lf Diffe                 | rent From Sur                        | face   | <u> </u>   | <u> </u>   |
| UL or lot No. Section   | Township F   | Range   | Lot Idn           | Feet fr               | om the                   | North/South line                     | Feet from the  | East/West line   | County .   |
| Dedicated Acres Joint of  | fafill Consol  | idation Co  | ode Ori           | ler No.               |                          |                                      | <u> </u>   | <u></u>  |  |
| NO ALLOWABLE W  | ILL BE ASSIG   | GNED TO   | O THIS            | COMPLE                | TION U                   | NTIL ALL INTER                       | RESTS HAVE BE  | EEN CONSOLIDA  | ATED   |
| 1008' OS.L.   | NAD 27<br><u>SURFACE LOCA</u><br>Y=470721.8<br>X=567661.1<br>LAT.=32.293941<br>LONG.=104.11430 | Import       Import       N       E       Import       57' W       Import       Import <td></td> <td></td> <td></td> <td>EXHIBIT A</td> <td>Certificate N.<br/>Certificate N.<br/>Certificate N.<br/>Certificate N.<br/>Certificate N.<br/>Certificate N.<br/>Certificate N.<br/>Certificate N.<br/>Certificate N.</td> <td>OR CERTIFICA<br/>certify that the infinition<br/>and complete to the<br/>and belief, and that<br/>ther owns a working<br/>increal interest in the<br/>proposed bottom hold<br/>to drill this well at<br/>antific a contract with<br/>mining of the best of<br/>the drill this well at<br/>ant Wood<br/>@permitswe<br/>and Wood<br/>@permitswe<br/>blan<br/>CERTIFICAT<br/>certify that the well<br/>plat was plotted from<br/>reliation, and that the<br/>ct to the best of m.<br/>RIL 18, 2016<br/>Date of Survey<br/>eal of Professional<br/>N. HARCROW<br/>289 DRAWN</td> <td>ION       prmetion       prestion       best of       this       interest       this       this       this       interest       int or e       e entered       24-16       te       St.com       TION       theories       st.com       TION       to cetion       m field       ne or       e same is       r belief.</td> |                   |                       |                          | EXHIBIT A                            | Certificate N.<br>Certificate N.<br>Certificate N.<br>Certificate N.<br>Certificate N.<br>Certificate N.<br>Certificate N.<br>Certificate N.<br>Certificate N. | OR CERTIFICA<br>certify that the infinition<br>and complete to the<br>and belief, and that<br>ther owns a working<br>increal interest in the<br>proposed bottom hold<br>to drill this well at<br>antific a contract with<br>mining of the best of<br>the drill this well at<br>ant Wood<br>@permitswe<br>and Wood<br>@permitswe<br>blan<br>CERTIFICAT<br>certify that the well<br>plat was plotted from<br>reliation, and that the<br>ct to the best of m.<br>RIL 18, 2016<br>Date of Survey<br>eal of Professional<br>N. HARCROW<br>289 DRAWN | ION       prmetion       prestion       best of       this       interest       this       this       this       interest       int or e       e entered       24-16       te       St.com       TION       theories       st.com       TION       to cetion       m field       ne or       e same is       r belief. |

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PO Box 2428 805 N. Richardson Roswell, NM 88202 Telephone (575) 625-0599 Fax (575) 625-0687

# REPORT

PROSPECT: Isaiah Fee SWD 1

#### Producing Well Information for 1/2 Mile Radius Township 23 South, Range 28 East, N.M.P.M.

This plat is not to scale, well locations are estimated. For more precise placement, see the attached written report.

Yellow = proration units for producing wells

Blue = proration units for active APD's, but the well has not been drilled

+ Salt Water Disposal





#### <u>REPORT</u>

#### PROSPECT: Isaiah Fee SWD 1

#### Producing Well Information for Delaware Formation

**RECORD DATE: 4/5/2016 REPORT DATE: 4/6/2016** 

**LANDMAN: Sarah Spears** 

#### 1. T23S-R38E Section 18: SE/4SE/4

A) <u>Carter Gas Com #001</u> API: 30-015-22779 320.0 ac proration = S2 <u>Location:</u> SHL: 1,980' FSL & 1,980' FEL <u>Spud Date:</u> 7/28/1979 <u>Depth:</u> MD: 12,664' PB: 11,965' <u>Producing:</u> Atoka (11,176'-11,203') Operator: Chevron U.S.A., Inc. P.O. Box 2100 Houston, TX 77252

#### 2. T23S-R38E Section 17: S/2SW/4, SWSE

A) <u>Carter #001</u> API: 30-015-24105 320.0 ac proration = S2 <u>Location:</u> SHL: 660' FSL & 1,980' FWL <u>Spud Date:</u> 1/20/1992 <u>Depth:</u> MD: 12,600' PB: 11,475' <u>Producing:</u> Atoka (11,368'-11,381')

Operator: COG Operating, LLC One Concho Center 600 W. Illinois Ave Midland, TX 79701

B) <u>Carter Farms A Fee Com #003H</u> API: 30-015-41758 Horizontal 160.0 proration <u>Location:</u> SHL: 330' FNL & 1,680' FWL BHL: 330' FSL & 1,680' FWL <u>Spud Date:</u> 5/24/2014 <u>Depth:</u> MD: 13,638' PB: 13,516' <u>Producing:</u> 3<sup>rd</sup> Bone Spring (9,745' - 13,516')

#### Operator: OXY USA WTP Limited Partnership PO Box 50250 Midland, TX 79710

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3. T23S-R38E Section 20: W2, W2NE

- A) <u>Belco #001</u> API: 30-015-25141 Salt Water Disposal = SWNW <u>Location:</u> 660' FWL & 2,200' FNL
- B) <u>Belco #002</u> API: 30-015-25433 Salt Water Disposal = SENW <u>Location:</u> 2,310' FNL & 1,980' FWL
- C) <u>Isaiah Fee SWD #001</u> New Not Drilled API: 30-015-43472 Salt Water Disposal = SWNW <u>Proposed Location</u> 1,435' FNL & 1,008' FWL <u>Estimated Spud Date:</u> Upon approval <u>Proposed Depth:</u> Montoya 14,600'
- D) <u>Cronos Fee #001</u> API: 30-015-35569 320.0 ac proration = W2 <u>Location:</u> SHL: 1,950' FNL & 660' FWL <u>Spud Date:</u> 6/13/2007 <u>Depth:</u> MD: 12,650' PB: 11,815' <u>Producing:</u> Cisco (10,660'-10,783')
- E) <u>Lakey Com #001</u> API: 30-015-23551 320.0 ac proration = W2 <u>Location:</u> SHL: 2,280' FSL & 660' FWL <u>Spud Date:</u> 11/13/1989 <u>Depth:</u> MD: 12,600' PB: 12,265' <u>Producing:</u> Bone Springs (5,900' - 6,411')

- <u>Operator:</u> Basic Energy Services, LP P.O. Box 10460 Midland, TX 79701
- <u>Operator:</u> Basic Energy Services, LP P.O. Box 10460 Midland, TX 79701
- <u>Operator:</u> Basic Energy Services, LP P.O. Box 10460. Midland, TX 79701

<u>Operator:</u> BC Operating, Inc. P.O. Box 50820 Midland, TX 79710

<u>Operator:</u> BC Operating, Inc. PO Box 50820 Midland, TX 79710

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F) Whitesnake 20 21 W2BC Fee #001H New Not Drilled API: 30-015-43497 Horizontal 160.0 proration = NWNE Sec 20, NENW Sec 21 Proposed Location: SHL: 354' FNL & 2,395' FEL BHL: 330' FNL & 2,310' FWL Estimated Spud Date: 1/20/2016 Proposed Depth: Wolfcamp 14,615' <u>Operator:</u> Mewbourne Oil Company PO Box 5270 Hobbs, NM 88241

#### 4. T23S-R38E Section 19: NE/4, N/2SE/4

A) <u>Mariner Fee #001H</u> New Not Drilled API: 30-015-43016 Horizontal 320.0 ac proration = E2 <u>Location:</u> SHL: 250' FNL & 1,650' FEL BHL: 330' FSL & 1,650' FEL <u>Estimated Spud Date:</u> 12/1/2015 <u>Proposed Depth:</u> Wolfcamp 15,550' Operator: BC Operating, Inc. PO Box 50820 Midland, TX 79701

#### B) Mercury Fee #001

API: 30-015-34241 320.0 ac proration = E2 Location: SHL: 1,650' FSL & 990' FEL Spud Date: 8/2/2005 Depth: MD: 12,730' PB: 12,634' Producing: Morrow (12,730' - 12,634')

#### Operator: BC Operating, Inc. P.O. Box 50820

Midland, TX 79710

C) <u>Guitar Estate Com #001</u> API: 30-015-23215 320.0 ac proration = E2 <u>Location:</u> SHL: 2,100' FNL & 710' FEL <u>Spud Date:</u> 4/2/1980 <u>Depth:</u> MD: 12,580' PB: 12,539' <u>Producing:</u> Morrow (12,410' - 12,509')

<u>Operator:</u> Legacy Reserves Operating, LP P.O. Box 10848 Midland, TX 79702

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Universal Transverse Mercator Projection, Zone 1 1983 North American Datum

EXHIBITE

www.nmstatelands.org





# Martin Water Laboratories, Inc.

Analysts & Consultants since 1953 Bacterial & Chemical Analysis

| TO:                 | Jerry Woodward  | 1                               | LABORATORY NO.                    | 15-09-365                              |       |  |  |
|---------------------|---|---------------------------------|-----------------------------------|--|-------|--|--|
| ADDRESS:            | 2810 Savoy Place, Midland, TX                                   | 79705                           | SAMPLE RECEIVED:                  | 9/29/15                                |       |  |  |
| COMPANY:            | Smart Chemical  |                                 | RESULTS REPORTED:                 | 9/29/15                                |       |  |  |
| LEASE:              | (Basic Energy Services)   |                                 | AREA:                             | A: Carlsbad, NM                        |       |  |  |
| FORMATION:          |   | <u> </u>                        |                                   |  |       |  |  |
|                     |   | DESCRIPTION OF S                | AMPLES                            |  |       |  |  |
| No. 1               | Submitted water sample - taken                                  | 9/28/15 from Belo               | o State #1 SWD.                   |  |       |  |  |
| No. 2               | Submitted water sample - taken                                  | 9/28/15 from Belo               | o State #2 SWD.                   |  |       |  |  |
| No. 3               |   |                                 |                                   |  |       |  |  |
| No. 4               |   |                                 |                                   |  |       |  |  |
| Chemical and        | Physical Properties (milligrams per liter)                      | No. 1                           | No. 2                             | No. 3                                  | No. 4 |  |  |
| Specific Gravity    | y @ 60°F.   | 1.1120                          | 1.1110                            |  |       |  |  |
| pH When Sam         | pled  |                                 |                                   |  |       |  |  |
| pH When Rece        | ived  | 8.6                             | 8.6                               |  |       |  |  |
| Bicarbonate as      | HCO3  | 915                             | 1,281                             |  |       |  |  |
|                     |   |                                 | ·····                             |  |       |  |  |
| Total Hardness      | s, as CaCO3   | 23,600                          | 23,400                            |  |       |  |  |
| Calcium, as Ca      | ·   | 8,000                           | 8,000                             | <u> </u>                               |       |  |  |
| Magnesium, as       | Mg  | <u> </u>                        | 826                               | [                                      |       |  |  |
| Sodium and/or       | Potassium   | 64,318                          | <u> </u>                          |  |       |  |  |
| Sulfate, as SO4     |   | 725                             | 608                               |  |       |  |  |
| Chloride, as Ci     |   | 113,630                         | 106,529                           |  |       |  |  |
| iron, as Fe         |   | 6.9                             | 4.2                               |  |       |  |  |
| Barium, as Ba       |   | 0                               | 0                                 |  |       |  |  |
| Total Dissolved     | Solids, Calculated  | 189,483                         | 178,255                           |  |       |  |  |
|                     | · · · · · · · · · · · · · · · · · · ·                           |                                 |                                   |  |       |  |  |
|                     | ······································                          |                                 |                                   |  |       |  |  |
| Hydrogen Sulti      |   | 0.0                             | 0.0                               | <u> </u>                               |       |  |  |
| Resistivity, ohn    | hs/m @ 77*F.  | 0.060                           | 0.062                             | j                                      |       |  |  |
| Carbonate, as       | CO3   | 1,020                           | 1,080                             |  |       |  |  |
| Hydroxide, as       | он  | 0                               | 0                                 |  |       |  |  |
| Corrosiveness       |   | Moderate                        | Moderate                          | `````````````````````````````````````` |       |  |  |
| Barium Sulfate      | Scaling Tendency  | None                            | None                              |  |       |  |  |
| Calcium Carbo       | nate S.I. @ 77° F. (Stiff-Davis)*                               | 3.73                            | 3.72                              |  |       |  |  |
| Calcium Carbo       | nate S.I. @ 122* F. (Stiff-Davis)*                              | 4.41                            | 4.36                              |  |       |  |  |
| Calcium Sulfat      | e Scaling Tendency  | None                            | None                              |  |       |  |  |
| * Colclum Carbonati | e S.I A positive fig. signifies a scaling potential proportiona | te to the magnitude of the numb | er, and a negative fig. signifies | no scaling potential                   |       |  |  |

REMARKS: The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

1del Ź. / By: (Greg Ogden, B.S.

(432) 683-4521 \* 709 W. Indiana, Midland, Texas 79701 \* (fax) 682-8819 Remit to Address: P.O. Box 98, Midland, Texas 79702 

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ζEXHIBIT G

Brief Examination of Geology at and Around Proposed Location of Isaiah Fee #1 SWD, T23S, R28E, section 20, near Loving, NM

> Dennis W . Powers, Ph.D. Consulting Geologist Anthony, TX

> > May 2, 2016



This report is confidential to Basic Energy Services

### Summary

Isaiah Fee #1 will be located in the NW<sup>1</sup>/4, section 20, T23S, R28E, just northwest of Loving, NM. A mainly carbonate interval, up to ~1000 ft thick, below the Devonian Woodford Shale is the intended injection zone. Other SWD wells in the area show this interval, commonly termed "Devonian" in OCD orders, has relatively low natural gamma, high density, and several hundred feet or rock displaying relatively high log porosity. Two well logs through most or all of the Devonian to the west-northwest and east-southeast were used to estimate a depth to top of Devonian of ~13,600 ft below ground level. A well near the Isaiah Fee location was used separately to extrapolate depths; the top of Devonian may be ~60 ft shallower.

Structure contours on top of Mississippian rock around the Isaiah Fee location show no evidence of faulting. The top of Delaware Mountain Group and top of Bone Spring were examined to support permitting the nearby Belco #1 SWD, and no evidence of faulting was found.

Data for rocks below the Devonian are scarce around Isaiah Fee. Humble Federal Wiggs#1 (30-015-01137) is ~10.6 miles southwest of Isaiah Fee. The Wiggs well (TD 14,865 ft) penetrated Woodford, ~1000 ft of "Devonian," Montoya and Simpson (Groups), and upper Ellenburger Formation. The Wiggs well shows zones of high natural gamma just below Devonian and above Ellenburger, and these should provide additional isolation from Ellenburger. Elsewhere, the shales of the Simpson are interpreted as a seal over Ellenburger fields.

A short geophysical log cross-section near Isaiah Fee clearly shows thick, continuous anhydrite and halite beds of the Castile that provide excellent isolation of shallow ground water from natural upward migration of fluids injected below Castile.

# **General Information**

I was contacted by email by David Alvarado early April 2016 to conduct a geological evaluation of the area at and around the proposed location for Isaiah Fee #1 SWD well (Figure 1, base map; yellow star) in the NW¼, section 20, T23S, R28E. The principal geological formation of interest is the carbonate interval immediately below the Woodford. The location is ~1.5 mile west-northwest of Loving, NM.

#### Groundwater Isolation

A previous report (Powers, 2016) evaluated the area at and around the nearby Belco #1 well (API 30-015-25141), with emphasis on isolation of groundwater. In that report, elevation maps on the top of Delaware Mountain Group and top of Bone Spring showed no indications of faulting at either horizon. The report also included crosssection geophysical log evidence of continuous halite and anhydrite beds of the Permian Castile Formation (included in Appendix). Shallow groundwater is protected from below by the evaporites, and there is no evidence of faults to provide a natural pathway for fluids from deeper to the ground water.

#### Data Availability

Broadhead (2006) provides data on depth to top of Mississippian (Barnett Shale) in sufficient detail around T23S, R27-28E to construct an elevation map (Figure 1, TopMiss & ContoursTopMiss layers). There is no evidence to support faulting at this horizon. The top of Mississippian is the deepest horizon known with sufficient data to evaluate local faulting around the proposed SWD location.

The Oil Conservation Division (OCD) of the New Mexico Energy, Minerals, and Natural Resources Department maintains electronic records and geophysical logs for drillholes in



Figure 1. Base map (Google Earth) with township and section outlines. Yellow star near center marks approximate location of Isaiah Fee #1. TopMiss layer displays elevation data for top of Mississippian based on Broadhead (2006). ContoursTopMiss layer displays the 100 ft contours hand drawn for the elevation of top of Mississippian. SectionThruDevonian layer inclues the white dashed line for the estimates of depth to "Devonian" using data from the Mewbourne wells with logs (red circles).



the state. The information available locally is extensive as drilling has been significant in the area of the SWD for many years. Nevertheless, within T23S, R27-28E, the only geophysical logs known penetrating significantly below the Woodford were supplied to David Alvarado by Mewbourne Oil Company for their new SWDs. These are Top Gun Fed SWD #1 (30-015-31075; sec 18, T23S, R27E) and Layla 27 SWD #1 (30-015-22638; sec 27, T23S, R28E). These drillholes penetrated to 13,780 ft and 15,000 ft, respectively.

## Geophysical Log Interpretation

A principal objective here is to estimate the depth to the base of the Woodford at the Isaiah Fee #1 location. This would be the minimum depth to reach the intended Devonian injection zone. Another objective is to define underlying units and make an estimate of potential interconnections with Ellenburger.

As wells near the Isaiah location do not penetrate the Woodford, other means were necessary to estimate depths. Logs for the two Mewbourne SWDs are the substantive evidence for estimating depth and thickness of potential injection intervals below Woodford at the Isaiah Fee #1 location.

For the Top Gun well, only the Mewbournesupplied CNL-GR log is available; neither OCD nor commercial sources I subscribe to have other logs for this well. The Top Gun log begins at 12,000 ft depth (Figure 2). To provide estimates of stratigraphic horizons above 12,000 ft at the Top Gun location, geophysical logs from 30-015-20587 and 30-015-20868 were examined. These wells are nearly identical distances west and east, respectively, of the Top Gun SWD.

The well log for the Layla SWD to current depth is a cement bond log. The natural gamma portion





of that log was used (Figure 2) for correlation. Logs taken to 13,100 ft before deepening are available for shallower stratigraphic picks that are less easily defined by the cement bond log.

Geophysical logs from 30-015-35569, next to the Isaiah Fee location, provide data for strata to a depth of 12,650 ft, sufficient to define an informal stratigraphic horizon ("datum") above the Woodford. This horizon can be identified at the Top Gun and Layla SWDs to infer depths at the Isaiah Fee location. (Figure 3).

The geophysical logs from 30-015-10842 (Pardue "31" Com 1; section 31, T23S, R28E) penetrate the Woodford from 13,602-13,733 ft (ref elev KB 3130 ft). The log below that to TD (13,915 ft) is labelled "Sil." The short (~150 ft) zone below Woodford has low natural gamma and high acoustic velocity, indicating carbonate.

# Woodford and Devonian at Isaiah Fee #1

Figure 3 illustrates the reference point used to estimate tops and depths at Isaiah Fee #1.

"Datum" is a stratigraphic horizon that is expressed (and identified) in many well logs in the area (Figure 3). It is in the lower Atoka and above the Morrow limestone and clastics. The "datum" is used as a prominent marker relative to the Woodford; it was used (Figure 4) as the principal reference point at Isaiah Fee #1.

At Top Gun, no log is available shallow enough for estimating "datum." The two logs bracketing the well west and east (see previous section) have elevations for "datum" of -7689 ft and -7884 ft, respectively. They are nearly due east and west of Top Gun and equidistant; the average of -7787 ft elevation was assigned to "datum" at Top Gun (Figure 4). A straight line dip was assumed for the top of Devonian (base of Woodford Shale) between Top Gun and Layla. Because Isaiah Fee is nearly along a straight line between these two SWDs, the depths for "datum" and top of Devonian were calculated based on the proportional distance from Isaiah to each SWD. They are represented by the projected elevation of -8441 ft for "datum" and -10523 ft estimated for Devonian. The actual elevation of "datum" in the nearby well (30-015-25569) is -8379 ft, a positive (higher) elevation of 62 ft. A regional map (Haigler and Cunningham, 1972) shows an elevation of ~-10,700 for top of "undifferentiated Silurian and Devonian."

The surface elevation at the Isaiah Fee location is estimated from topography to be  $\sim$ 3078 ft amsl. The depth to top of Devonian (the injection interval) is estimated to be 13,600 ft using straight line dip calculations. Given the difference (+62 ft) between actual "datum" elevation and straight line dip calculations, the top of the injection interval may be closer to 13,540 ft deep.

The open hole injection interval at Layla is  $\sim$ 1,000 ft thick and begins  $\sim$ 40 ft below base of Woodford. The Top Gun open hole interval is unclear, as no completion report was found on the OCD site. The log depth of the well is 13,780 ft (driller depth 13,770 ft). The log header shows a 5.5-inch casing depth of 13,770 ft, but that is possibly temporary. The Top Gun drilling plan calls for a casing at 12,900 ft, which is base of Woodford, for all practical purposes. If the injection interval is 12,900-13,780 ft, the total open hole interval is 880 ft at Top Gun.

The top of the injection interval should be relatively easy to determine while drilling by monitoring cuttings and drilling character because of the sharp change from shale to carbonate.





The porosity log from Top Gun indicates the interval from  $\sim$ 400-800 (near base) below Woodford is highest in porosity. Both natural gamma logs are higher in the upper  $\sim$ 300 ft below Woodford and lower in the lower logged interval, although natural gamma increases significantly near TD of the Layla well. Overall, there is a large interval with higher porosity for injection.

### Stratigraphic Units

The stratigraphic units examined here have generally well defined equivalents in outcrops in southeastern New Mexico and west Texas. Nomenclature used in the subsurface in southeastern New Mexico and west Texas for these lower Paleozoic units varies regionally, from geologist to geologist, and through the history of subsurface exploration and development in the region. Names vary from traditional lithostratigraphic usage (e.g., Woodford Shale, Ellenburger Formation) to system (e.g., Devonian or Siluro-Devonian) that normally are used for intervals of geologic time.

The Woodford has been attributed to late --Devonian to early Mississippian age. Some authors (e.g., Canter et al., 1992) attribute it only as Devonian, as do LeMone (1992) and (Raatz, 2005) for the equivalent Percha Shale in south-central NM. These are by no means the



Figure 4. Straight line correlations between Top Gun and Layla SWDs provide an initial estimate of elevation of a common "datum" and the top of "Devonian" (base of Woodford Shale). Well 30-015-35569 near Isaiah provides a check on the straight line projection for "datum."

only age assignments for the shales that were widely deposited over an interval of time from middle-late Devonian to early Mississippian.

The carbonate interval below the Woodford and above the upper Ordovician Montoya Group (or Formation) in this area was labelled Siluro-Devonian (Roswell Geological Society, 1962) in well correlation diagrams that included the Humble Wiggs Fed 1 well (API 30-015-01137) in section 31, T24S, R27E. Part of the log from the Wiggs well is reproduced here (Figure 5). Other regional cross-sections of the time and later followed this practice or labelled part or all of the interval as Fusselman Formation (Silurian). Because of the precedent set with the Mewbourne wells, the interval is here simply termed Devonian.

# Separation of Injection Interval from Ellenburger

Previous orders by OCD (e.g., SWD-1561, 7/15/15) for similar SWD wells do "... not allow disposal into the Ellenburger formation (lower Ordovician) or lost circulation intervals directly on top and obviously connected to this formation."

Various investigators have detailed outcrop and subsurface evidence of paleokarst features



of lower Paleozoic rocks in west Texas and to a lesser degree in New Mexico. Examples include LeMone (1992; Early-Middle Silurian Fusselman Formation and Late Ordovian Cutter Formation of the Montoya Group) for outcrops in the Franklin Mountains; Entzminger and Loucks (1992; Wristen Formation in Gaines and Yoakum Counties, TX); Mazzulo and Mazzulo (1992; Fusselman Formation, west Texas); and Canter et al. (1992; Silurian Wristen Formation or northern Permian Basin).

High-porosity intervals or zones, including those with paleo-karst, may exhibit lost circulation, but that does not demonstrate connection with another unit (e.g., Ellenburger). An interval below a major unconformity, such as below the Woodford, may well show paleokarst and porosity associated with that unconformity. The existing natural gamma logs of the two display some increased natural gamma immediately below the Woodford that might be attributable to some infiltration during early deposition of Woodford shales. Nevertheless, the natural gamma for several hundred feet below this upper Devonian does not display any significant increased natural gamma that might be attributable to paleokarsting and clay or clastic infiltration.

Well-known fabrics associated with paleokarst are generally identified with core rather than logs. The main question is not whether there is increased porosity but whether there is connection with Ellenburger.

Figure 5. Lower portion of geophysical log from 30-015-01137 (Humble Oil & Refining Fed Wiggs #1) located in section 31, T24S, R27E, ~10.6 miles southwest of Isaiah Fee location. This appears to be the nearest logged well reaching Ellenburger Formation.



The log of the Layla well shows a zone of considerably increased natural gamma just above TD. Because of the limited additional depth, it is not certain if this is the top of Montoya Group. The Wiggs Federal well (30-015-01137) is interpreted to include ~1000 ft of Siluro-Devonian rocks, similar to the interval penetrated in each of the Mewbourne wells. Below that, the Montoya and Simpson each reveal higher natural gamma of magnitude roughly similar to the Woodford. In the Wiggs well, total thickness between Siluro-Devonian and Ellenburger is ~600 ft. Regional crosssections indicate this interval is likely to be about the same thickness at the Isaiah location. These intervals cumulatively would help isolate the injection interval from the Ellenburger.

In a broad review of the Ellenburger as a reservoir rock, Loucks (2003?) described the fractured karst of the Ellenburger and cited work (op. cit., p. 28) indicating the source rocks for the Ellenburger are putatively from the Simpson where Simpson is present. Loucks (op. cit., p. 29) also indicated these shales are the seals for the Ellenburger in Central Basin fields.

# Conclusions

The carbonates immediately below the Woodford Shale show a thick interval of relatively high porosity in the Top Gun geophysical log and should provide excellent injection prospects. The top of the carbonate is estimated to be  $\sim$ 13,540-13,600 ft deep at the Isaiah Fee #1 location.

Previous work demonstrated that shallow surface ground water is protected from deeper injected fluids by thick Castile evaporites of extremely low permeability. A log cross-section of Castile (Powers, 2016) near the Isaiah Fee location is attached within the Appendix.

Lower Paleozoic rocks (e.g., Ellenburger, Simpson and Montoya Groups) are well known regionally for paleokarst and some interconnections. The Simpson may be source rock for some of the Ellenburger production known mainly from far east of this location. In addition, the Simpson is considered a seal for Ellenburger fields on the Central Basin Platform. The Wiggs log (Figure 5) provides evidence of intervals of higher natural gamma (similar in magnitude to Woodford) between Ellenburger and "Devonian;" these zones, interpreted as shales or shaly, should inhibit connections to the Ellenburger.

# Notes for Figure 1

Figure 1 has multiple layers labelled in the caption and accessible in the pdf.

# References Cited

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- Canter, K.L., Wheeler, D., and Geesamen, R.C., 1992, Sequence stratigraphy and depositional facies of the Siluro-Devonian interval of the northern Permian Basin, *in* Candelaria, M.P., and Reed, C.L., eds., Paleokarst, Karst-related Diagenesis, and Reservoir Development: Examples from Ordovician-Devonian Age Strata of West Texas and the Mid-Continent: 1992 Field Trip Guidebook, Permian Basin Section-SEPM, Pub. 92-33, p. 93-109.
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- Raatz, W.D., 2005, Devonian shelf to basin facies distributions and source rock potential, southcentral and southwestern New Mexico: Open-file Report 484, New Mexico Bureau of Geology and Mineral Resources, Socorro, NM.
- Roswell Geological Society, 1962, Panel Diagram of southern and eastern New Mexico showing pre-Mississippian Paleozoic correlations: Stratigraphic Studies Committee, Roswell, NM.

Appendix Figure 2 from Powers (2016) Log Cross-section Through Belco #1 Showing Continuity of Lower Castile Anhydrite and Halite Beds

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EXHIBIT H

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Figure 2. Log cross-section through the Belco #1 (30-015-25141) showing the continuity of lower Castile halite and anhydrite beds in the area. These beds are nearly impermeable and provide confinement or isolation of DMG fluids from shallow groundwater. Top of DMG is used as a common artificial elevation. A = anhydrite, H + halite. (*Original from Powers, 2016.*)





# New Mexico Office of the State Engineer Water Column/Average Depth to Water

| (A CLW##### in the<br>POD suffix indicates the<br>POD has been replaced<br>& no longer serves a<br>water right file.) | (R=POD has<br>been replaced<br>O=orphaned,<br>C=the file is<br>closed) | d,   | (qua<br>(qua | urter<br>Irter | s a | ire 1:<br>ire si | =NW<br>malle | 2=NE 3<br>st to lar | 3=SW 4=SE<br>rgest) (N | :)<br>AD83 UTM in m | eters)   | (     | In feet) |        |
|---|--|------|--------------|----------------|-----|------------------|--------------|---------------------|------------------------|---------------------|----------|-------|----------|--------|
|   | POD<br>Sub-  |      | Q            | Q              | Q   |                  |              | , · ·               |                        |                     |          | Depth | Depth    | Water  |
| POD Number  | Code basin   | Coun | ty 64        | 16             | 4   | Sec              | Tws          | Rng                 | X                      | <u> </u>            | Distance | Well  | Water    | Column |
| <u>C 00312</u>  | 0  | ED   | 3            | 3              | 1   | 20               | 23S          | 28E                 | 583140                 | 3573106* 🈜          | 335      | 230   | 70       | 160    |
| C 00313   |  | ED   | 3            | 3              | 3   | 17               | 23S          | 28E                 | 583136                 | 3573915* 🏵          | 577      | 250   | 75       | 175    |
| <u>C 00851</u>  | С  | ED   |              |                | 3   | 17               | 23S          | 28E                 | 583438                 | 3574217* 🈜          | 847      | 200   | 50       | 150    |
| C 00911 POD2  | С  | ED   | 1            | 2              | 4   | 20               | 23S          | 28E                 | 584359                 | 3572911* 😜          | 1119     | 69    | 34       | 35     |
| C 00911 POD3  | С  | ED   | 1            | 2              | 4   | 20               | 23S          | 28E                 | 584359                 | 3572911* 😜          | 1119     | 218   | 60       | 158    |
| <u>C 01992</u>  | С  | ED   | 3            | 4              | 1   | 19               | 23S          | 28E                 | 581929                 | 3573094* 🌍          | 1438     | 232   | 45       | 187    |
| <u>C 00544</u>  | С  | ED   | 3            | 3              | 1   | 21               | 23S          | 28E                 | 584762                 | 3573120* 🏵          | 1444     | 27    |          |        |
| <u>C 02848</u>  |  | ED   | 3            | 3              | 1   | 21               | 235          | 28E                 | 584762                 | 3573120* 🏵          | 1444     | 130   |          |        |
| C 03542 POD1  | CUB  | ED   | 2            | 4              | 4   | 20               | 23S          | · 28E               | 584615                 | 3572530 🏵           | 1529     | 22    | 16       | 6      |
| C 03542 POD2  | CUB  | ED   | 2            | 4              | 4   | 20               | 23S          | 28E                 | 584620                 | 3572497 🏵           | 1551     | 30    |          |        |
| <u>C 00577</u>  | С  | ED   | 3            | 1              | 3   | 21               | 23S          | 28E                 | 584764                 | 3572714* 🏵          | 1569     | 35    | 10       | 25     |
| C 00578   | С  | ED   | 3            | 1              | 3   | 21               | 23S          | 28E                 | 584764                 | 3572714* 🏵          | 1569     | 28    | 18       | 10     |
| <u>C 00643</u> 1 mile =   | С  | ED   | 3            | 1              | 3   | 21               | 235          | 28E                 | 584764                 | 3572714* 😜          | 1569     | 76    | 10       | 66     |
| C 00650 1610 meter  | rs <sub>C</sub>  | ED   | 1            | 3              | 3   | 21               | 23S          | 28E                 | 584767                 | 3572508* 🏵          | 1669     | . 32  | 12       | 20     |
| C 02180   | С  | ED   |              |                | 3   | 18               | 23S          | 28E                 | 581831                 | 3574198* 🏵          | 1718     | 140   | 80       | 60     |
| C 03922 POD1  | С  | ED   | 3            | 2              | 3   | 18               | 235          | 28E                 | 581844                 | 3574230 🍪           | 1722     | 138   | 75       | 63     |
| <u>C 00539</u>  | С  | ED   | 3            | 3              | 3   | 21               | 23S          | 28E                 | 584767                 | 3572308* 😜          | 1781     | 28    | 6        | 22     |
| C 03779 POD1  | С  | ED   | 2            | 3              | 3   | 18               | 23S          | 28E                 | 581707                 | 3574103 🏵           | - 1788   | 110   | 70       | 40     |
| <u>C 00520</u>  | С  | ED   | 1            | 1              | 3   | 16               | 23S          | 28E                 | 584754                 | 3574538* 🏵          | 1830     | 115   | 33       | 82     |
| <u>C 00521</u>  | С  | ED   | 1            | 1              | 3   | 16               | 235          | 28E                 | 584754                 | 3574538* 🏵          | 1830     | 218   | 33       | 185    |
| C 03082   | С  | ED   | 1            | 3              | 3   | 18               | 23S          | 28E                 | 581529                 | 3574096* 🏵          | 1949     | 220   | 217      | 3      |
| <u>C 02697</u>  | С  | ED   |              | 1              | 3   | 18               | 23S          | 28E                 | 581629                 | 3574401* 🏵          | 1995     | 220   | 42       | 178    |
| C 01477   |  | ED   | 1            | 3              | 3   | 19               | 23S          | 28E                 | 581532                 | 3572484* 🏵          | 2015     | 127   | 10       | 117    |
| C 00333   |  | ED   | 3            | 1              | 2   | 18               | 23S          | 28E                 | 582325                 | 3575118* 🚱          | 2016     | 147   |          |        |
| C 00519   | С  | ED   | 2            | 1              | 1   | 28               | 23S          | 28E                 | 584970                 | 3572100* 🏵          | 2069     | 250   |          | 1      |
| C 03762 POD1  | CUB  | ED   | 4            | 4              | 2   | 17               | 23S          | 28E                 | 585314                 | 3574066 🏵           | 2091     | 40    | 31       | 9      |
| *UTM location was derived from  | m PLSS - see H   | leip |              |                |     |                  |              |                     |                        |                     |          | }     | EXH      |        |

 $\dots$ 

| (A CLW##### in the<br>POD suffix indicates the<br>POD has been replaced<br>& no longer serves a | (R=PC<br>been r<br>O=orp<br>C=the | DD has<br>eplaced<br>haned,<br>file is | i,    | (qua   | arte        | rs a     | are 1 | =NW | 2=NE 3 | =SW 4=SE | Ξ)                        |              |               |               |                |                 |
|---|-----------------------------------|--|-------|--|-------------|----------|-------|-----|--------|----------|---------------------------|--------------|---------------|---------------|----------------|-----------------|
| water right file.)  | closed                            | !)                                     |       | (quarters are smallest to largest) (NAD83 UTM in m |             |          |       |     |        | in me    | meters) (In feet)         |              |               |               |                |                 |
| POD Number  | Code                              | POD<br>Sub-<br>basin (                 | Count | C<br>17 64   | 1 Q<br>1 16 | Q<br>5 4 | Sec   | Tws | Rna    | ×        | Y                         | - 4 -<br>-   | [<br>Distance | Depth<br>Well | Depth<br>Water | Water<br>Column |
| C 03472 POD1  |                                   | С                                      | ED    | 4  | 4           | 4        | 07    | 23S | 28E    | 582894   | 3575479                   | •            | 2151          | 140           | 40             | 100             |
| <u>C 00716</u>  |                                   | С                                      | ED    |  |             |          | 21    | 235 | 28E    | 585471   | 3573012                   | •            | 2161          | 140           | 69             | 71              |
| <u>C 00108</u>  |                                   | CUB                                    | ED    | 1  | 1           | 4        | 29    | 23S | 28E    | 583974   | 3571285*                  | •            | 2184          | 152           | 10             | 142             |
| <u>C 02846 S</u>  |                                   |  | ED    | 4  | 4           | 4        | 07    | 235 | 28E    | 582926   | 3575527*                  | Ð            | 2191          | 150           | 40             | 110             |
| <u>C 01648</u>  |                                   | С                                      | ED    |  | 2           | 3        | 29    | 23S | 28E    | 583667   | 3571184*                  | Ð            | 2215          | 65            | 15             | 50              |
| <u>C 02037</u>  |                                   | С                                      | ED    |  | 2           | 3        | 29    | 23S | 28E    | 583667   | 3571184*                  | •            | 2215          | 260           |                |                 |
| C 03753 POD1  |                                   | С                                      | ED    | 3  | 3           | 1        | 18    | 235 | 28E    | 581515   | 3574658                   | 9            | 2231          | 210           | 60             | 150             |
| <u>C 00010</u>  |                                   | CUB                                    | ED    | 1  | 2           | 2        | 25    | 23S | 27E    | 581129   | <b>3</b> 5720 <b>7</b> 5* | <b>S</b>     | 2564          | 250           | 103            | 147             |
| C 00010 CLW191759   | 0                                 |  | ED    | 1  | 2           | 2        | 25    | 23S | 27E    | 581129   | 3572075*                  | <b>@</b>     | 2564          | 259           |                |                 |
| C 00010 ENLGD   |                                   | CUB                                    | ED    | 1  | 2           | 2        | 25    | 235 | 27E    | 581129   | 3572075*                  | 9            | 2564          | 259           |                |                 |
| C 03941 POD2  |                                   | CUB                                    | ED    | 3  | 4           | 2        | 13    | 23S | 27E    | 581152   | 3574745                   | <b>\$</b>    | 2581          | 32            |                |                 |
| C 03941 POD1  |                                   | CUB                                    | ED    | 3  | 4           | 2        | 13    | 23S | 27E    | 581110   | 3574757                   | <b>@</b>     | 2623          | 37            | 19             | 18              |
| <u>C 00504</u>  |                                   |  | ED    | 3  | 1           | 4        | 08    | 23S | 28E    | 583939   | 3575949*                  | 9            | 2642          | 230           | 40             | 190             |
| <u>C 00311</u>  |                                   | С                                      | ED    | 4  | 2           | 1        | 16    | 23S | 28E    | 585353   | 3575152*                  | <b>@</b>     | - 2685        | 163           | 55             | 108             |
| <u>C 02004</u>  |                                   | С                                      | ED    |  | 3           | 4        | 24    | 23S | 27E    | 580825   | 3572378*                  | 9            | 2705          | 232           | 190            | 42              |
| C 03762 POD2  |                                   | CUB                                    | ED    | 4  | 4           | 2        | 17    | 23S | 28E    | 584893   | 3575598                   | •            | 2711          | 40            | 30             | 10              |
| C 00327   |                                   | CUB                                    | ED    | 3  | 2           | 4        | 21    | 235 | 28E    | 585974   | 3572728*                  | Ð            | 2712          | 212           |                |                 |
| <u>C 01885</u>  |                                   | С                                      | ED    |  | 2           | 2        | 21    | 23S | 28E    | 586070   | 3573640*                  | <b>@</b>     | 2742          | 104           | 35             | 69              |
| C 03888 POD3  |                                   | CUB                                    | ED    | 4  | 4           | 4        | 12    | 235 | 27E    | 581348   | 3575495                   | 9            | 2909          | 35            |                |                 |
| C 03819 POD4  | 1                                 | CUB                                    | ED    | 4  | 4           | 4        | 12    | 235 | 27E    | 581306   | 3575464                   | •            | 2915          | 35            |                |                 |
| C 03888 POD2  | ,                                 | CUB                                    | ED    | 4  | 4           | 4        | 12    | 23S | 27E    | 581400   | 3575557                   | 9            | 2920          | 30            |                |                 |
| C 03819 POD1  |                                   | CUB                                    | ED    | 4  | 4           | 4        | 12    | 23S | 27E    | 581270   | 3575463                   | 9            | 2941          | 36            |                |                 |
| C 03819 POD2  | I                                 | CUB                                    | ED    | 4  | 4           | 4        | 12    | 23S | 27E    | 581270   | 3575463                   | 9            | 2941          | 34            |                |                 |
| C 03819 POD5  | I                                 | CUB                                    | ED    | 4  | 4           | 4        | 12    | 23S | 27E    | 581256   | 3575451                   | 9            | 2941          | 36            |                |                 |
| C 03888 POD5  | •                                 | CUB                                    | ED    | 4  | 4           | 4        | 12    | 23S | 27E    | 581295   | 3575494                   | <b>&amp;</b> | 2945          | 35            |                |                 |
| C 01472   |                                   | с -                                    | ED    | 2  | 3           | 2        | 28    | 23S | 28E    | 585730   | 3571652                   | •            | 2946          | 162           | 10             | 152             |
| C 00010 CLW191724   | 0                                 |  | ED    | 2  | 3           | 2        | 25    | 23S | 27E    | 580926   | 3571666*                  | •            | 2957          | 259           |                |                 |
| C 03888 POD1  | (                                 | CUB                                    | ED    | 4  | 4           | 4        | 12    | 23S | 27E    | 581295   | 3575525                   | •            | 2967          | 35            |                |                 |
| C 03819 POD3  |                                   |  | ED    | 4  | 4           | 4        | 12    | 23S | 27E    | 581256   | 3575500                   | 9            | 2976          | 35            |                |                 |
| *UTM location was derived fro   | m PLSS                            | - see Hi                               | elp   |  |             |          |       |     |        |          |                           |              |               | Ę             | EXHI           | BITI            |

\*UTM location was derived from PLSS - see Help

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| (A CL <sup>*</sup> W##### in the            | (R=POD has    | ч                                     |         |        |      |        |        |           |           |                |                   |        |              |          |
|---|---------------|---------------------------------------|---------|--------|------|--------|--------|-----------|-----------|----------------|-------------------|--------|--------------|----------|
| POD sum indicates the POD has been replaced | O=orphaned,   | u,                                    |         |        |      |        | •      |           |           |                |                   |        |              |          |
| & no longer serves a                        | C=the file is | (                                     | qua     | rter   | 's a | ire 1  | =NW    | 2=NE 3    | B=SW 4=SE | )              |                   |        |              |          |
| water right file.)                          | closed)       | (                                     | qua     | rter   | sa   | ire si | malles | st to lar | gest) (N  | AD83 UTM in me | eters)            | (      | In feet)     |          |
|   | POD           | , , , , , , , , , , , , , , , , , , , | <br>    | ·<br>~ |      | `.     |        | •         | · · ·     |                | 4 7 94 <u>1</u>   | Dainth | Denth.       | 14/14/14 |
| POD Number                                  | Code basin    | County                                | 64<br>_ | 16     | 4    | Sec    | Tws    | Rng       | X         | Y              | Distance          | Well   | Water        | Column   |
| C 03888 POD4                                | CUB           | ED                                    | 3       | 4      | 4    | 12     | 23S    | 27E       | 581139    | 3575462 🈜      | 3033              | 35     |              |          |
| <u>C 01253</u>                              |               | ED                                    | 1       | 3      | 1    | 22     | 23S    | 28E       | 586375    | 3573338* 🚱     | 3035              | 179    | 50           | 129      |
| <u>C 03053</u>                              | С             | ED                                    | 3       | 4      | 4    | 12     | 235    | 27E       | 581122    | 3575505* 🌍     | 3075              | 94     | 14           | 80       |
| <u>C 03457</u>                              | С             | ED                                    | 3       | 4      | 4    | 12     | 23S    | 27E       | 581081    | 3575530 🏵      | 3122              | 200    |              |          |
| C 03762 POD3                                | CUB           | ED                                    | 4       | 2      | 2    | 16     | 23S    | 28E       | 586203    | 3574642 🏵      | 3131              | 40     | 30           | 10       |
| <u>C 00309</u>                              | С             | ED                                    | 1       | 3      | 1    | 08     | 23S    | 28E       | 583129    | 3576544* 🈜     | 3176              | 165    | 16           | 149      |
|   |               |                                       |         |        |      |        |        |           |           | Avera          | ge Depth to       | Water: | 46           | leet     |
|   |               |                                       |         |        |      |        |        |           |           |                | Minimum           | Depth: | <b>6</b> 1   | leet     |
|   |               |                                       |         |        |      |        |        |           |           |                | Maximum           | Depth: | <b>217</b> 1 | leet     |
| Record Count: 61                            |               |                                       |         |        |      | ·      |        |           |           |                | un in in in in in |        |              |          |

UTMNAD83 Radius Search (in meters):

Easting (X): 583340

Northing (Y): 3573375

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Radius: 3220



\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



**Analytical Report** Lab Order 1605A15 Date Reported: 6/1/2016

### Hall Environmental Analysis Laboratory, Inc.

|   |         |         | _            |                             |                           |  |  |
|---|---------|---------|--------------|-----------------------------|---------------------------|--|--|
| CLIENT: Permits West<br>Project: Basic Isajah SWD |         |         | Client Sampl | e ID: Brown<br>Date: 5/17/2 | 1 Well<br>016 11:17:00 AM |  |  |
| Lab ID: 1605A15-001                               | Matrix: | AQUEOUS | Received 1   | Date: 5/23/2016 12:04:00 PM |                           |  |  |
| Analyses  | Result  | PQL Qua | l Units      | DF                          | Date Analyzed             |  |  |
| EPA METHOD 300.0: ANIONS                          |         |         |              |                             | Analyst: LGT              |  |  |
| Chloride  | 500     | 25 *    | mg/L         | 50                          | 5/24/2016 9:27:13 PM      |  |  |
| EPA METHOD 1664A                                  |         |         |              |                             | Analyst: tnc              |  |  |
| N-Hexane Extractable Material                     | ND      | 12      | mg/L         | 1                           | 5/23/2016 4:41:00 PM      |  |  |
| SM2540C MOD: TOTAL DISSOLVE                       | SOLIDS  |         |              |                             | Analyst: KS               |  |  |
| Total Dissolved Solids                            | 1960    | 20.0 *  | mg/L         | 1                           | 5/25/2016 3:53:00 PM      |  |  |

# EXHIBIT

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded

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- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Value above quantitation range Ε
- Analyte detected below quantitation limits Page 1 of 5 J
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

# **Analytical Report**

#### Hall Environmental Analysis Laboratory, Inc.

Lab Order 1605A15 Date Reported: 6/1/2016

| CLIENT: Permits West<br>Project: Basic Isaiah SWD<br>Lab ID: 1605A15-002 | Matrix:  | Client Sample ID: Loving Well<br>Collection Date: 5/17/2016 11:24:00 AM<br>Matrix: AOUEOUS Received Date: 5/23/2016 12:04:00 PM |         |     |                      |  |  |  |  |  |  |  |
|--|----------|---|---------|-----|----------------------|--|--|--|--|--|--|--|
| Analyses   | Result   | PQL Qua   | l Units | DF  | Date Analyzed        |  |  |  |  |  |  |  |
| EPA METHOD 300.0: ANIONS   |          |   |         |     | Analyst: LGT         |  |  |  |  |  |  |  |
| Chloride   | 4400     | 250 *   | mg/L    | 500 | 5/24/2016 9:39:37 PM |  |  |  |  |  |  |  |
| EPA METHOD 1664A   |          |   |         |     | Analyst: tnc         |  |  |  |  |  |  |  |
| N-Hexane Extractable Material  | ND       | 10  | mg/L    | 1   | 5/23/2016 4:41:00 PM |  |  |  |  |  |  |  |
| SM2540C MOD: TOTAL DISSOLVE  | D SOLIDS |   |         |     | Analyst: KS          |  |  |  |  |  |  |  |
| Total Dissolved Solids   | 10500    | 200 *D  | mg/L    | 1   | 5/25/2016 3:53:00 PM |  |  |  |  |  |  |  |



Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

\*

Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits Page 2 of 5 J
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

| QC   | SUMMARY I     | REPOR    | Γ           |      |
|------|---------------|----------|-------------|------|
| Hall | Environmental | Analysis | Laboratory, | Inc. |

| Client:PermitsProject:Basic Isa                                     | West<br>aiah SWD    | ·                    |                 |             |                      |                |                     |      |           |      |
|---|---------------------|----------------------|-----------------|-------------|----------------------|----------------|---------------------|------|-----------|------|
| Sample ID MB-25444  | Sampi               | Type: Mi             | BLK             | Tes         | tCode: El            | PA Method      | 1664A               |      | <u> </u>  |      |
| Client ID: <b>PBW</b><br>Prep Date: <b>5/23/2016</b>                | Batcl<br>Analysis [ | h ID: 25<br>Date: 5/ | 444<br> 23/2016 | F<br>د      | RunNo: 3<br>SeqNo: 1 | 4437<br>062009 | Units: <b>mg/</b> L |      |           |      |
| Analyte   | Result              | PQL                  | SPK value       | SPK Ref Val | %REC                 | LowLimit       | HighLimit           | %RPD | RPDLimit  | Qual |
| N-Hexane Extractable Material<br>Silica Gel Treated N-Hexane Extrac | ND<br>ND            | 10<br>10             |                 |             |                      |                |                     |      | - · · · · |      |
| Sample ID LCS-25444   | Samp1               | ype: LC              | s               | Tes         | tCode: El            | PA Method      | 1664A               |      |           |      |
| Client ID: LCSW   | Batcl               | h ID: 25             | 444             | F           | RunNo: 3             | 4437           |                     |      |           |      |
| Prep Date: 5/23/2016  | Analysis D          | )ate: 5/             | 23/2016         | S           | SeqNo: 1             | 062010         | Units: mg/L         |      |           |      |
| Analyte   | Result              | PQL                  | SPK value       | SPK Ref Val | %REC                 | LowLimit       | HighLimit           | %RPD | RPDLimit  | Qual |
| N-Hexane Extractable Material                                       | 38                  | 10                   | 40.00           | 0           | 94.0                 | 78             | 114                 |      |           |      |
| Silica Gel Treated N-Hexane Extrac                                  | 21                  | 10                   | 20.00           | 0           | 107                  | 64             | 132                 |      |           |      |

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank

- -

- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified





# **QC SUMMARY REPORT** Hall Environmental Analysis Laboratory, Inc.

WO#: 1605A15

> 01-Jun-16

| Client:<br>Project: |      | Permits West<br>Basic Isaiah SWD |              |                 |            |               |          |          |      |
|---------------------|------|----------------------------------|--------------|-----------------|------------|---------------|----------|----------|------|
| Sample ID           | МВ   | SampType                         | E MBLK       | TestCode:       | EPA Method | 300.0: Anions | <u> </u> | <u></u>  | -    |
| Client ID:          | PBW  | Batch ID:                        | : R34457     | RunNo:          | 34457      |               |          |          |      |
| Prep Date:          |      | Analysis Date:                   | 5/24/2016    | SeqNo:          | 1062706    | Units: mg/L   |          |          |      |
| Analyte             |      | Result P                         | QL SPK value | SPK Ref Val %RE | C LowLimit | HighLimit     | %RPD     | RPDLimit | Qual |
| Chloride            |      | ND (                             | 0.50         |                 | -          |               |          |          |      |
| Sample ID           | LCS  | SampType                         | LCS          | TestCode:       | EPA Method | 300.0: Anions | ;        |          |      |
| Client ID:          | LCSW | Batch ID:                        | R34457       | RunNo:          | 34457      |               |          |          |      |
| Prep Date:          |      | Analysis Date:                   | 5/24/2016    | SeqNo:          | 1062707    | Units: mg/L   |          |          |      |
| Analyte             |      | Result P                         | QL SPK value | SPK Ref Val %RE | C LowLimit | HighLimit     | %RPD     | RPDLimit | Qual |
| Chloride            |      | 4.8 0                            | 0.50 5.000   | 0 95.           | 0 90       | 110           |          |          |      |

#### Qualifiers:

-

- Value exceeds Maximum Contaminant Level. \*
- · Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Ρ Sample pH Not In Range
- RL **Reporting Detection Limit**
- W Sample container temperature is out of limit as specified

Page 4 of 5



# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#: 1605A15

01-Jun-16

#### **Client:** Permits West Basic Isaiah SWD **Project:** Sample ID MB-25475 SampType: MBLK TestCode: SM2540C MOD: Total Dissolved Solids PBW Client ID: Batch ID: 25475 RunNo: 34475 Prep Date: 5/24/2016 Analysis Date: 5/25/2016 SeqNo: 1063156 Units: mg/L Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Total Dissolved Solids ND 20.0 Sample ID LCS-25475 SampType: LCS TestCode: SM2540C MOD: Total Dissolved Solids Client ID: LCSW Batch ID: 25475 RunNo: 34475 Prep Date: 5/24/2016 Analysis Date: 5/25/2016 SeqNo: 1063157 Units: mg/L Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Total Dissolved Solids 1010 20.0 1000 0 101 80 120

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified



Page 5 of 5



#### Affidavit of Publication

State of New Mexico, County of Eddy, ss.

Rynni Henderson, being first duly sworn, on oath says:

That she is the Publisher of the Carlsbad Current-Argus, а newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

April 26

2016

That the cost of publication is \$50.15 and that payment thereof has been made and will be assessed as court

costs.

Subscribed and sworn to before me this 27 day of and start ,

2016 redondo

My commission Expires

Notary Public



April 26, 2016 Basic Energy Services LP is applying to dri the Isaiah Fee SWD as a saltwater dispos al well. The well staked at 1435 FNL 23 S., R. 28 County and is 14 600 mum disposal ra be 20,000 bwpd. In-terested parties must file objections or quests for hear with the NM Oil C South Divis vation 87505 Additional days. Additional mation can be tained by conta Wood, West, Inc., 37 Verano Loop, Santa Fe, NM 87508, Phone number Is (505) 466-8120. Brian





<sup>:</sup> June 3, 2016

Henry McDonald PO Box 597 Loving NM 88256

Basic Energy Services, LP is applying (see attached application) to drill the Isaiah Fee SWD 1 as a saltwater disposal well. As required by NM Oil Conservation Division (NMOCD) rules, I am notifying you of the following proposal. This letter is a notice only. No action is needed unless you have questions or objections.

Well: Isaiah Fee SWD 1  $\underline{TD} = 14,600'$ Proposed Disposal Zone: Devonian (13,540' - 14,600') Location: 1435' FNL & 1008' FWL Sec. 20, T. 23 S., R. 28 E., Eddy County, NM Approximate Location:  $\approx 2/3$  mile west of Loving, NM Applicant Name: Basic Energy Services, LP (575) 746-2072 Applicant's Address: P. O. Box 1375, Artesia NM 88211 Submittal Information: Application for a saltwater disposal well will be filed with the NMOCD. If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Sincerely,

Brian Wood

| 6587           | U.S. Postal Service COND DAMA CONTRACTOR STATES  |
|----------------|--|
| 1/30 0001 0768 | Certified Mail Feo<br>S<br>Extra Servicas & Feos (check box, act lee as an input to be an input to be as a |
|                | S<br>Sent To HEWRY M3 DONALD<br>Stradi and Apt, No. Dr PO Box No.<br>Sty, State, 21P+4<br>4 DVING NM   |



June 3, 2016

Chevron USA Inc. PO Box 2100 Houston TX 77252

Basic Energy Services, LP is applying (see attached application) to drill the Isaiah Fee SWD 1 as a saltwater disposal well. As required by NM Oil Conservation Division (NMOCD) rules, I am notifying you of the following proposal. This letter is a notice only. No action is needed unless you have questions or objections.

<u>Well:</u> Isaiah Fee SWD 1  $\underline{TD} = 14,600^{\circ}$ 

Proposed Disposal Zone: Devonian (13,540' - 14,600')

Location: 1435' FNL & 1008' FWL Sec. 20, T. 23 S., R. 28 E., Eddy County, NM <u>Approximate Location:</u> ≈2/3 mile west of Loving, NM <u>Applicant Name:</u> Basic Energy Services, LP (575) 746-2072

Applicant's Address: P. O. Box 1375, Artesia NM 88211

<u>Submittal Information</u>: Application for a saltwater disposal well will be filed with the NMOCD. If you have an objection, or wish to request a hearing; then it must be filed with the NMOCD within 15 days of receipt of this letter. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely



PERIMITS WEST, INC. PROVIDING PERMITS for LAND USERS 17 Wale Logi Sura 1: New Aburged 200

June 3, 2016

COG Operating, LLC 600 W. Illinois Ave. Midland TX 79701

Basic Energy Services, LP is applying (see attached application) to drill the Isaiah Fee SWD 1 as a saltwater disposal well. As required by NM Oil Conservation Division (NMOCD) rules, I am notifying you of the following proposal. This letter is a notice only. No action is needed unless you have questions or objections.

<u>Well:</u> Isaiah Fee SWD 1 <u>TD</u> = 14,600' <u>Proposed Disposal Zone:</u> Devonian (13,540' - 14,600') <u>Location:</u> 1435' FNL & 1008' FWL Sec. 20, T. 23 S., R. 28 E., Eddy County, NM <u>Approximate Location:</u> =2/3 mile west of Loving, NM <u>Applicant Name:</u> Basic Energy Services, LP (575) 746-2072 <u>Applicant's Address:</u> P. O. Box 1375, Artesia NM 88211 <u>Submittal Information:</u> Application for a saftwater disposal well will be filed with the NMOCD. If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Sincerely,

Brian Wood





June 3, 2016

Legacy Reserves PO Box 10848 Midland TX 79702

Basic Energy Services, LP is applying (see attached application) to drill the Isaiah Fee SWD 1 as a saltwater disposal well. As required by NM Oil Conservation Division (NMOCD) rules, I am notifying you of the following proposal. This letter is a notice only. No action is needed unless you have questions or objections.

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Proposed Disposal Zone: Devonian (13,540' - 14,600')

Location: 1435' FNL & 1008' FWL Sec. 20, T. 23 S., R. 28 E., Eddy County, NM Approximate Location: ≈2/3 mile west of Loving, NM

Applicant Name: Basic Energy Services, LP (575) 746-2072

Applicant's Address: P. O. Box 1375, Artesia NM 88211

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Please call me if you have any questions.

Sincerely,

Brian Wood

Postal Service "BASIC ISAIA Hoe IEED MAILS REGEID 0 \_\_\_\_ ហ L For delivery information, visit our website at www.usps.com n -0 ഫ Centiliers Wall Fee -7 ATTAL SEEVILUS & FOUR REAL ADDR. ADD THE 📋 hatan fastera (naidatra) Ē England Bestelpt (electronic) manes -Contribut Mail Frederiction Distingly JUN\_ 🗌 Aanih Signahuo Respired BAT STORES 2016 Adult Signature Restricted Delivery \$ 320-55-55(Fin Postaua [T] State of **^** Total Postage and Fees -7 ഹ ient li LECA 14071 City, State, 21P MIDLAND



PERMITS WEST

PROVIDING PERMITS FOR LAND USERS

June 3, 2016

BC Operating, Inc. PO Box 50820 Midland TX 79710

Basic Energy Services, LP is applying (see attached application) to drill the Isaiah Fee SWD 1 as a saltwater disposal well. As required by NM Oil Conservation Division (NMOCD) rules, I am notifying you of the following proposal. This letter is a notice only. No action is needed unless you have questions or objections.

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Sincerely

Brian Wood





June 3, 2016

Oxy USA WTP LP PO Box 50250 Midland TX 79710

Basic Energy Services, LP is applying (see attached application) to drill the Isaiah Fee SWD 1 as a saltwater disposal well. As required by NM Oil Conservation Division (NMOCD) rules, I am notifying you of the following proposal. This letter is a notice only. No action is needed unless you have questions or objections.

<u>Well:</u> Isaiah Fee SWD 1 <u>TD</u> = 14,600'

Proposed Disposal Zone: Devonian (13,540' - 14,600')

Location: 1435<sup>4</sup> FNL & 1008<sup>4</sup> FWL Sec. 20, T. 23 S., R. 28 E., Eddy County, NM <u>Approximate Location</u>: ≈2/3 mile west of Loving, NM

Applicant Name: Basic Energy Services, LP (575) 746-2072

Applicant's Address: P. O. Box 1375, Artesia NM 88211

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Please call me if you have any questions.

Sincerely,

Brian Wood



PERMIT'S WEST, IT PROVIDING PERMITS for LAND USERS 17 Vacuulture, Sandalis, New Mexicu 197508 (State 404 0120)

June 3, 2016

Mewbourne Oil Company PO Box 5270 Hobbs NM 88241

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Basic Energy Services, LP is applying (see attached application) to drill the Isaiah Fee SWD 1 as a saltwater disposal well. As required by NM Oil Conservation Division (NMOCD) rules, I am notifying you of the following proposal. This letter is a notice only. No action is needed unless you have questions or objections.

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Sincerely, Brian Wood



| a) a . Star   |   |   |  | NM OII  | L CONSERVAT  | TION   |  |
|---|---|---|--|---|--|--|--|
| DISTRICT I<br>1025 N. FRENCH DR., HOBBS, NW 682-<br>Phone: (975) 592-6181 Faz: (575) 393-97<br>DISTRICT II<br>811 S. FIRST ST., ARTESIA, NM 8<br>Phone: (973) 746-1283 Faz: (575) 746-<br>DISTRICT III<br>1000 RIO BRAZOS RD., AZIEC, NM<br>Phone: (505) 334-6178 Faz: (505) 3<br>DISTRICT IV | 40 Energy,<br>20 OIL<br>6720<br>1 67410<br>34-6170  | Minerals<br>CONS<br>1220 S<br>Santa                         | State of Ne<br>& Natural<br>ERVATI<br>OUTH ST. F<br>Fe, New Me | w Mexico /<br>Resources De<br>ON DIVIS<br>RANCIS DR.<br>exico 87505 | APR 252016<br>epartment<br>RECEIVED  | F<br>Revised Au<br>Submit one copy t<br>Distri<br>Datri  | 'orm C-102<br>agust 1, 2011<br>o appropriate<br>ct Office<br>ED REPORT |
| 1220 S. ST. FRANCIS DR., SANTA FE, N<br>Phone: (305) 476-3460 Fax: (505) 4  | WELI  | LOCATION  | AND ACRE   | AGE DEDICATI  | ON PLAT  |  |  |
| 30-015- 4374  | 2   | Pool Code<br>96101  |  | Ś   | Pool Name<br>SWD; Devonia  | an   |  |
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| 0GRID No.<br>246368   |   | ISAIAH FEE SWD<br>Operator Name<br>BASIC ENERGY SERVICES LP |  |   |  |  |  |
|   |   |   | Surface Loc  | ation   |  |  | }  |
| UL or lot No. Section   | Township Ran  | nge Lot Idn   | Feet from the  | North/South line  | Feet from the  | East/West line   | County   |
| E 20  | 20-5   28<br>Batt   |   | 1430   | NURIH   | 1008   | WEST   | EUUY   |
| UL or lot No. Section   | Township Ran  | ge Lot Idn  | Feet from the  | North/South line  | Feet from the  | East/West line   | County   |
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| C-108 Review Checklist: Received Add. Request: Reply Date: Suspended: [Ver 15]                                      |
|---|
| ORDER TYPE: WFX / PMX / WD Number: Order Date: Legacy Permits/Orders:   |
| Well No. 1 Well Name(s): TSLICH SLOFE   |
| API: 30-0 15-43772 Spud Date: 7BD New or Old: New or Old: (UIC Class II Primacy 03/07/1982)                         |
| Footages 1008 For Lot or Unit & Sec 20 Tsp 235 Rge 28 County to day   |
| General Location: This support Ship Debunius Pool No.: 9610   |
| BLM 100K Map: CArlsbad Operator: Energy services, LP OGRID: 2463 Contact: Bri An word; cf CN                        |
| COMPLIANCE RULE 5.9: Total Wells: D Inactive: Fincl Assur: Compl. Order? MA IS 5.9 OK? Compl. Order? Date: S-01-206 |
| WELL FILE REVIEWED DETIFIENT Status: Proposed   |
| WELL DIAGRAMS: NEW: Proposed O or RE-ENTER: Before Conv. O After Conv. O Logs in Imaging:                           |
| Planned Rehab Work to Well: <u>Myn C-13-L From 13540-7000</u>   |
| Well Construction Details Sizes (in) Setting Cement Cement Top and Determination                                    |
| Planned_or Existing_Surface 24./2 12./ Stage Tool   |
| Planed_or Existing_Interm/Prod 1721338 2400 1465 54 Fred 1/1/560  |
| Planned_or Existing_Interm/Prod 274/ 45% 4435 6000 1 600 54 FRACI/1/34  |
| Planned_or Existing _ Prod/Liner 8417 12440 5300- 8000 68-1   |
| Planned_or Existing Liner   |
| Planned or Existing OH PERE   |
| Injection or Confining  |
| Injection Lithostratigraphic Onits: Depths (ft) Units Drilled TD PBTD   |
| Confining Unit: Litho Struc Por   |
| Proposed Ini Interval TOP:  |
| Proposed Inj Interval BOTTOM:   |
| Confining Unit: Litho. Struc. Por. Min. Packer Depth 1340 (100-ft limit)  |
| Adjacent Unit: Litho. Struc. Por.   |
| AOR: Hydrologic and Geologic Information Admin. Inj. Press. 27% (0.2 psi per ft)                                    |
| POTASH: R-111-P_A Noticed? BLM Sec Ord () WIPP () Meerch Salt/Salado T: 40 B: 2. Yo KW: Cliff House fm              |
| FRESH WATER: Aquifer ULFCHMINU Max Dept   |
| NMOSE Basin: CAPUSDAS CAPITAN REEF: thru adj (NA) No. Wells within 1-Mile Radius? 9 FW Analysis                     |
| Disposal Fluid: Formation Source(s)   |
| Disposal Int: Inject Bate (Avg/May BWPD): 194/2-04 Protectable Waters? Source: System: Closed or Open               |
| HC Potential: Producing Interval? Whereast Producing? Method: Logs/DST/P&A/Other 2-Mile Badius Pool Map             |
| AOR Wells: 1/2-M Radius Map? V Well List? V Total No. Wells Penetrating Interval: Horizontals?                      |
| Penetrating Wells: No. Active Wells Num Repairs?on which well(s)? Diagrams?   |
| Penetrating Wells: No. P&A WellsNum Repairs?on which well(s)?Diagrams?Diagrams?                                     |
| NOTICE: Newspaper Date Mineral Owner Surface Owner Henry no Doneld_N. Date  |
| RULE 26.7(A): Identified Tracts?Affected Persons: BL, Chevron, OXX COGN. Date                                       |
| Order Conditions: Issues: Cincelate SurFace & Futermediate tosurFac   |
| Add Order Cond:   |
| Belto #1500; PERF 5726-5809   |
| Relieve # 2 San ' Perf! 25 540 pt 3615  |

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|---|---|--|---|
| SENDER: COMPLETE THIS SECTION   | COMPLETE THIS SECTION ON DELIVERY   | SENDER: COMPLETE THIS SECTION  | COMPLETE THIS SECTION ON DELIVERY   |
| Complete items 1, 2, and 3,   | A Signature   | Complete items 1, 2, and 3.  | Ar Signature / A  |
| Print your name and address on the reverse<br>so that we can return the card to you   | XP/Londa Jac 31 BAddressee  | Print your name and address on the reverse<br>so that we can return the card to you  | Adore Dulk Chart  |
| Attach this card to the back of the mailpiece,<br>on the first if access participant.   | ByFleceived by (Princed Marrie) C. Date of Delivery   | Attach this card to the back of the mallpiece,<br>or on the foot if one on the foot.                                       | B. Referenced by (Printed Name) C. Date of Dett   |
| or on the noncin space permits.     Article Addressed to:     Article Addressed to:     Article Addressed to:                       | D. is delivery address different flom item 17 - Yes   | cr on the nont is space permits,     Article Addressed to:     Leager Leager   | D. Is deivery address different from item 1? D Yes  |
| PO Box 597  | ti YES, enter delivery address balow: 📋 No  | PO Box 10848   | If YES, enter delivery address below: 🔲 No  |
| Loving NM 88256   |   | Midland TX 79702   | · · ·   |
|   |   |  | -   |
| •   |   | <u> </u>   |   |
|   | 3. Service Type C Pronity Mail Express®<br>C Adult Signature CJ Registered Ma8 <sup>TM</sup>  | · · · · · · · · · · · · · · · · · · ·  | 3. Service Type Priority Mail Express<br>C Adult Signature D Registered Mail <sup>114</sup>   |
|   | Adult Signature Restricted Delivery     Carting Mall®   |  | Adult Signature Restricted Delivery     Registered Mail     Restricted Delivery     Delivery     Delivery     Delivery                      |
| Basic - Isalah Fee SWD.1  | Contect on Delivery     C | Basic - Isaiah Fee SWD 1   | Collect on Delivery     Collect on Delivery |
| 7015 1730 0001 0168 65  | 67 al Restricted Delivery   | 7015 1730 0001 0168 6  | 556 Asstricted Delivery   |
| PS Form 3811, July 2015 PSN 7530-02-000-9050  | Domestic Return Resent  | PS Form 3811, July 2015 PSN 7530-02-000-9053   | Domestic Return Reci  |
| · · · · · · · · · · · · · · · · · · ·   | ······································  |  | ·   |
| SENDER: COMPLETE THIS SECTION   | COMPLETE THIS SECTION ON DELIVERY   | SENDER: COMPLETE THIS SECTION  | COMPLETE THIS SECTION ON DELIVERY   |
| Complete items 1, 2, and 3.   | A Signature   | Complete items 1, 2, and 3.  | A Signature   |
| Print your name and address on the reverse<br>so that we can return the card to you.  | X C C Addressee   | Print your name and address on the reverse<br>so that we can return the card to you.                                       | Xacku Batta DAUXIOSSI   |
| Attach this card to the back of the mailpiece,<br>or on the front if space permits.   | B, Received by (Propod Corne) C. Date of Usivery  | Attach this card to the back of the mailpiece,<br>or on the front if space permits.  | B. Refleived by Printed Name C. Date of Deliver   |
| 1. Article Addressed to:<br>BC Operating  | D. is delivery eddress different from item 1? Q Yes   | 1. Article Addressed to:<br>Mewbourne Oit Company  | D. Is delivery address different from item 17 U Yea   |
| PO Box 50820  |   | PO Box 5270  | is rep, etter pervery address bolow; DNo  |
| Midland TX 79710  |   | Hobbs NM 88241   |   |
|   |   |  |   |
|   |   |  |   |
|   | 3. Service Type  Priordy Mail Expresse Adult Storation Registered Mail**  | · · · · · · · · · · · · · · · · · · ·  | 3. Service Type Difference Priority Mail Expression   |
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| Basic - Isaiah Eeo SWD 1<br>2. Articla Munitur (Transfer from sanara labat  | E Collect on E very Merchandise   | Basic - Isaiah Fee SWD 1   | Collect on Delivery Restricted Delivery     Of Signature Confirmation*  |
| 7015 1730 0001 0168   | 532 stricted Delivery Pesticited Delivery   | 7015 1730 0001 0168 6563   | all Restricted Desvery Factorized Delvery   |
| PS Form 3811, July 2015 PSN 7530-02-000-9053  | , Domestic Return Receipt   | PS Form 3811, July 2015 PSN 7530-02-000-9053   | Domestic Return Receipt   |
| -   | <u></u>   |  | COMOLETE THIS SECTION ON DELIVERY   |
| SENDER: COMPLETE THIS SECTION   | COMPLETE THIS SECTION ON DELIVERY   | SENDER: COMPLETE THIS SECTION  | A. Skonsture  |
| Complete items 1, 2, and 3,   | A. Signature  | Complete items 1, 2; and 3.  | X Agent   |
| Finit your name and address on the reverse<br>so that we can return the card to you.  | X Addressie   | so that we can return the card to you.   | B. Beceived by (Printed Name) C. Date of Defivery   |
| Attach this card to the back of the maliplece,<br>or on the front if space permits.   | B. Received by (Printed Name)   | Attach this card to the back of the mappace,<br>or on the front if space permits.  | Ashland Maion 6/13/2016   |
| 1. Article Addressed to:<br>Chavron USA Inc   | D. Is delivery address different from item 12 U Yes   | 1. Article Addressed to.<br>Ovv USA WTP LP   | <ul> <li>If YES, enter delivery address below:          No     </li> </ul>  |
| PO Box 2100   | UTES, STOT DEVELY BOOTESS DEDUC   | P. O. Box 50250  |   |
| Houston' TX 77252   |   | Midland TX 79710   |   |
|   |   | . • •  | ·   |
|   |   |  | 3. Service Type Different Mail Express  |
| ••••••••••••••••••••••••••••••••••••••  | Service Type     Priority Mat Express     Adult Signature     Adult Signature     Registered Mat <sup>114</sup> Registered Mat <sup>114</sup>   |  | Adult Signature Restricted Delivery Adult Signature Restricted Delivery Contend Mall®   |
| 9590 9403 0887 5223 6584 18   | I Contract Mail Restricted Delivery Diagesterol Mail Hestricted<br>i-CrORhised Mail Restricted Delivery Delivery<br>□ Central Mail Restricted Delivery Clinetum Receipt for '   | 9590 9403 0887 5223 6584 32  | Certified Mail Restricted Delivery     Destination     Marchandise     Marchandise     Signatum Confirmation*                               |
| Basic - Isainh Faa SWD 1  | Collect on Delivery     Merchandise     Goliect on Delivery Restricted Delivery     Gignature Confirmation**  | Basic - Isaiah Fee SWD 1     Article Number (Transfer from service label)     Article Number (Transfer from service label) | Collect on Delivery Restricted Delivery Dissignature Confirmation   |
| 7015 1730 0001 0168 652   | S All Districted Delivery Restricted Delivery   | 110001 0100 01001 0168 637   | Domestic Return Receip  |
| PS Form 3811, July 2015 PSN 7530-02-000-9053  | Domestic Return Receipt   | PS Form 3811, July 2015 PSN 7530-02-000-9053   |   |
|   |   |  |   |
| SENDER: COMPLETE THIS SECTION   | COMPLETE THIS SECTION ON DELIVERY   |  |   |
| Complete items 1, 2, and 3.   | A Signature II Cima Panene  |  |   |
| <ul> <li>This your name and autoess on the reverse<br/>so that we can return the card to you.</li> </ul>                            | E Thrained hy Bridged Named 10 Hand & Buddretsee  |  |   |
| Autach this card to the back of the malipiece,<br>1 or on the front if space permits.   | C. C  |  |   |
| COG Operating, LLC  | D. Is delivery eddress different from item 1?  Yes If YES, enter delivery address below: TI No.   |  |   |
| 600 W. Illinois Ave.  |   |  |   |
| 101 1 X 19101   | · · ·   |  |   |
| $\setminus$   | ₩. *  |  |   |
|   | 3. Service Type   |  |   |
|   | Cl Actt Signature   |  |   |
| 9590 9403 0887 5223 6395 85<br>Basic - Jone Em SWO  | HT Certified Malto<br>Certified Mal Restricted Delivery CI Return Receipt for<br>CI Certifies Mal Restricted Delivery CI Return Receipt for   |  |   |
| 2. Article Number (Dansfer from service febral<br>2. Article Number (Dansfer from service febral<br>2011 - 1330 - 2012 - 1310 - 101 | In Content on Contents<br>In Content — Delivery Restricted Delivery II Signature Confirmation <sup>14</sup><br>LP3 – SI - J - J - J - J - J - J - J - J - J -   |  |   |
| 1012 TV30 0001 0100 020   | st Restricted Delivery 1 1 Restricted Delivery  |  |   |
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