ENERGY, MINERALS AND NATUR RESOURCES DEPARTMENT Santa Fe, New Mexico 87505

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UII CUIISCI VALIULI DIVISIULI 1220 South St. Francis Dr.

1 UNIVI C-100 Revised June 10, 2003

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### **APPLICATION FOR AUTHORIZATION TO INJECT**

| I.     | PURPOSE:       Secondary Recovery       Pressure Maintenance       X       Disposal       Storage         Application qualifies for administrative approval?       Yes       X       No   |
|--------|---|
| II. ·  | OPERATOR: Mewbourne Oil Company   |
|        | ADDRESS: 3901 S. Broadway Tyler, TX 75701   |
|        | CONTACT PARTY: Bryan; MontgomeryPHONE: (903) 561-2900   |
| 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 X_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. See attached map.   |
| 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. See attached schematic for the Fairchild 24 #1  |
| VII.   | Attach data on the proposed operation, including:   |
| Ň      | <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> <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> <li>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.).</li> </ol> |
| *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: Bryan Montgomery  |
|        | SIGNATURE:DATE: January 21, 2011  |
| -      | E-MAIL ADDRESS: bmontgomery@mewbourne.com   |
| *      | If the information required under Sections' BEFORE THE OIL CONSERVATION DIVISION y submitted, it need not be resubmitted.<br>Please show the date and circumstances of Santa Fe, New Mexico   |
|        | Case No 14606 Exhibit No 3<br>Submitted by  |
| DIST   | MEWBOURNE OIL COMPANY         Office           VIBUTION: Original and one copy to Sant         MewBOURNE OIL COMPANY         Office   |

Hearing Date March 3, 2011

### 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.

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.

## **INJECTION WELL DATA SHEET**

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Side 1

### OPERATOR: Mewbourne Oil Company

## WELL NAME & NUMBER: Fairchild 13 #1 SWD

WELL LOCATION: 660 FSL & 660 FWL FOOTAGE LOCATION

### <u>WELLBORE SCHEMATIC (See Attached)</u>

| M<br>UNIT LETTER           | 13<br>SECTION                  | 19S<br>TOWNSHIP               | 25E<br>RANGE        |  |  |  |  |  |
|----------------------------|--------------------------------|-------------------------------|---------------------|--|--|--|--|--|
|                            | <u>WELL CONST</u><br>Surface C | <u>TRUCTION DATA</u><br>asing |                     |  |  |  |  |  |
| Hole Size: 14 3/4 in       |                                | Casing Size:9 5/8             | in set at 1173 feet |  |  |  |  |  |
| Cemented with: 1050 sx.    |                                | or                            | ft <sup>3</sup>     |  |  |  |  |  |
| Top of Cement: surface     |                                | Method Determin               | ed: circulated      |  |  |  |  |  |
|                            | Intermediate                   | e Casing                      |                     |  |  |  |  |  |
| Hole Size:                 |                                | Casing Size:                  |                     |  |  |  |  |  |
| Cemented with:             | SX.                            | <i>or</i> ft                  |                     |  |  |  |  |  |
| Top of Cement:             | <u> </u>                       | Method Determined:            |                     |  |  |  |  |  |
|                            | Production                     | Casing                        |                     |  |  |  |  |  |
| Hole Size: 8 3/4 in        |                                | Casing Size: 7 in             |                     |  |  |  |  |  |
| Cemented with: 820 sx.     |                                | or                            | ft <sup>3</sup>     |  |  |  |  |  |
| Top of Cement: surface     |                                | Method Determin               | ed: circulated      |  |  |  |  |  |
| Total Depth: Drill to 8200 | feet                           | and set casing at î           | 7800 feet           |  |  |  |  |  |
|                            | Injection In                   | nterval                       |                     |  |  |  |  |  |
| 7800 feet                  |                                | To 8200 feet                  |                     |  |  |  |  |  |

Open Hole

### **INJECTION WELL DATA SHEET**

Tubing Size: 27/8 in

Lining Material: TK99 plastic

Type of Packer: Arrowset 1X Nickel Plated (10,000#)

Packer Setting Depth: 7700 feet

Other Type of Tubing/Casing Seal (if applicable): None

### Additional Data

1. Is this a new well drilled for injection? No

If no, for what purpose was the well originally drilled? Canyon (Upper Penn) test.

Determined non-commercial and plugged in February, 1998 without any formation tests.

- 2. Name of the Injection Formation: Canyon (Upper Penn) Open hole
- 3. Name of Field or Pool (if applicable): North Dagger Draw Upper Penn
- 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. No perforations.
   See attached C103 plugging record from 1992.
- 5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:

Overlying producing zone - Yeso at 2640 feet

Underlying producing zone - Strawn at 8210 feet

### **Proposed Wellbore Diagram**

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Operator: Mewbourne Oil Company

Well Name: Fairchild "13" #1 SWD



| <ul> <li>Submit 3 Copies</li> </ul> |  |
|-------------------------------------|--|
| to Appropriate                      |  |
| District Office                     |  |

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State of New Mexico Energy, Minerals and Natural Resources Department



| DISTRICT I<br>2 O Box 1980 Hobbs NM 88240                                      | OIL CONSERVATIO  | ON DIVISION                           |                          | ·                            |  |  |  |
|--|--|---------------------------------------|--------------------------|------------------------------|--|--|--|
| 1.0. 00, 1000, 10003, 111, 00240   | 2040 Pacheco St.   |                                       | 30-015-29720             |                              |  |  |  |
| DISTRICT II  | Santa Fe, NM 8   | /505                                  | dindicate Type of Le     | 269                          |  |  |  |
| F.O. Drawer DD, Artesia, NM 60210  |  |                                       |                          |                              |  |  |  |
| DISTRICT III<br>1000 Rio Brazos Rd., Aztec, NM 87410                           |  |                                       | State Oil & Gas Lea      | se No.                       |  |  |  |
|  | SES AND REPORTS ON WEL                                     | 19                                    |                          |                              |  |  |  |
| (DO NOT USE THIS FORM FOR PROF<br>DIFFERENT RESERV<br>(FORM C-1                | OR. USE "APPLICATION FOR PEF<br>(01), FOR SUCH PROPOSALS.) | OR PLUG BACK TO A                     | -Lease Name or Uni       | Agreement Name               |  |  |  |
| Type of Well:  |  | · · · · · · · · · · · · · · · · · · · | 1                        |                              |  |  |  |
|  | OTHER  | 1                                     | Fairchild "13"           |                              |  |  |  |
| 2Name of Operator<br>Nearburg Producing Company                                |  |                                       | ∎Well No.<br>1           |                              |  |  |  |
| Address of Operator  |  |                                       | Pool name or Wildo       | at                           |  |  |  |
| 3300 North A Street, Building 2, Suite   | 3 120, Midland, Texas 79705                                | ····                                  | Dagger Draw; L           | Ipper Penn, North            |  |  |  |
| Avveil Location  | South  | 660                                   | Point Paris Th           | West                         |  |  |  |
| Unit Letter <u>Wi</u> · <u>OOO</u> F   | eet From The   | Line and000                           | Feet from the            | Line                         |  |  |  |
| Section 13   | Township 19S F   | Range 25E                             | NMPM                     | Eddy County                  |  |  |  |
|  | DElevation (Show whether DF,                               | RKB, RT, GR, etc.)                    |                          |                              |  |  |  |
|  | 3,414' GR'   | ·····                                 |                          |                              |  |  |  |
| <sup>11</sup> Check App  | propriate Box to Indicate Na                               | ature of Notice, Rep                  | port, or Other [         | Data                         |  |  |  |
| NOTICE OF INT  | ENTION TO  | SUBS                                  | SEQUENT RE               | PORT OF                      |  |  |  |
|  |  |                                       |                          |                              |  |  |  |
|  |  | REMEDIAL WORK                         |                          |                              |  |  |  |
| TEMPORARILY ABANDON  | CHANGE PLANS   | COMMENCE DRILLING O                   | PNS.                     | PLUG AND ANBANDONMENT        |  |  |  |
| PULL OR ALTER CASING   |  | CASING TEST AND CEME                  | ENT JOB                  |                              |  |  |  |
| OTHER:   |  | OTHER:                                |                          |                              |  |  |  |
| 12Describe Proposed or Completed Operations (<br>work) SEE RULE 1103.          | Clearly state all pertinent details, and give              | pertinent dates, including es         | timated date of starting | any proposed                 |  |  |  |
| 1) Set 45 sx cement plug from 7,826  | 3'-7,700'.   |                                       |                          | Piet TD-:                    |  |  |  |
| 2) Set 45 sx cement plug from 6,826  | 3'-6,700'.   |                                       |                          | 9-4-97                       |  |  |  |
| 3) Set 140 sx cement plug from 6,09  | 33'-5,982'. PUH & WOC. 11H & ta<br>7'-2 648'               | ig cmt @ 5,925°.                      |                          |                              |  |  |  |
| 5) Set 60 sx cement plug from 1,241  | 1'-1,123'. WOC & tag cmt at 1,144                          | ľ.                                    | 4                        | 14-17                        |  |  |  |
| 6) Set 10 sx cement plug from surfa  | ce. ND BOPE. Cut off csg & cap                             | well.                                 | 14:3 -                   |                              |  |  |  |
| <ol> <li>RDMO drilling rig.</li> <li>8) P&amp;A'd well Final report</li> </ol> |  |                                       | no RECE.                 | ?                            |  |  |  |
|  |  |                                       | CD ADYED                 |                              |  |  |  |
|  |  |                                       | I'T ESIA                 | ,                            |  |  |  |
|  |  |                                       |                          |                              |  |  |  |
|  |  |                                       |                          |                              |  |  |  |
|  |  |                                       |                          |                              |  |  |  |
|  |  |                                       |                          |                              |  |  |  |
|  |  |                                       |                          |                              |  |  |  |
| I hereby certify that the information above is the                             | and complete to the best of my knowled                     | ge and belief.                        |                          |                              |  |  |  |
| SIGNATINGE - CONT  | m Tu   | LE Manager of Drilling                | and Production           | DATE 2/20/98                 |  |  |  |
| Signature  |  |                                       |                          |                              |  |  |  |
| TYPE OR PRINT NAME E. Scott Kimbrough  | <i>v</i>   |                                       |                          | TELEPHONE NO. (915) 686-8235 |  |  |  |
| (This space for State Use) Jim W   | Bumi   | 0: +: +<                              | aponisor                 | 21 1                         |  |  |  |
| APPROVED BY  | זוז  | LE                                    | 7                        | DATE 7/12/99                 |  |  |  |

|                        | Fenasee (                                       | (Shellow))5<br>(Shellow)   |  | P2 01 10 10 10<br>(P2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | Slote   | Yotes Pet, etol<br>6 . 1 81<br>27912 7631<br>U.S. KOS   | Yotes<br>E-1025<br>"St.Com."<br>Stole                     | Vates Pers<br>Rig Perses<br>J.L. Hindle Stol<br>R.E.Gloss  | 4 M. Routh & Mic.<br>01.8 mistow.col<br>8.Nicholgs, etal                           | E-15-2003   | forrow Disc<br>F Collins, etal<br>Gless  | Metropolis<br>AZL St. Com.<br>TO 9610<br>DIA 3-23 01 S | De fileda 2.40  |   | 10-7-7.015   | C K Peorce, etc<br>Mrs M C Peorce, E                                      | <u>ب</u>                 |
|------------------------|---|--|--|--|---|---|---|--|--|---|--|--|---|---|--|---|--------------------------|
| ,                      | н.ю л.<br>2                                     | 40.17 344<br>Votes Pa  | 1 24434 /<br>1 etal<br>1 etal<br>06-783<br>95  | 437 44032 3<br>Votes Pet.,<br>*1st 06 783 10<br>9  | Mensente)<br>(Mensente)<br>Map (Larcy<br>Votes Prt. S.R.  | ad,73 (Ad),40 3<br>(Necerbu<br>Votea P<br>L etal  | 46.77 14414 /<br>rg Expl.)<br>ef., E-lei67                | 44.19 444.11 J<br>Yores Pet., eta)<br>1' 10 · 2003<br>4 · 26 · 2005  | AC. S. A. M. M. I<br>Yorgs atol Yores Per<br>NOC ALMINGTON<br>Preusing w Ropperson | ALM JI 4.4<br>Yares,etal<br>HBP<br>Rio Pecos,         | Yotes Bros.,<br>180 H.B.P. etai  | Chase Oil<br>8-10-2012                                 | JOS & 2 Jines Pet<br>September 10 7:2015<br>Transport                                       | Yortes Pel. And Markets<br>Fortes Pel. And Markets<br>Coctus II-21-2012 A Coctus<br>A.C. Curonantime Pel. 2001 200<br>A.C. Curonantime Pel. 200  | Gardiner Strate  | Yates Pet, etal<br>3-1-2012 (Same<br>UDSas<br>Chi Ener 10/44-1            | 004<br>977<br>1-14       |
| ;                      | 6/6456<br>5/10<br>5/10                          |  | 4674 Mobile *  | "Greasewood"<br>• <sup>d</sup> p 50  | L C.Horris Vz<br>below 2520'<br>Srate   | (Vates Pet,ctal & F   | Osker D/R) Stote<br>(Dfosken) Hat<br>at e ARCs Mother y i | PENAS<br>RR HIGHLETOLY   |  | ALLIOLI CALGE   | 2 OXY<br>Her<br>SXT Turnels! be zo   | Alley<br>Vergeret Korre                                | 9-20-2015<br>Chase Oil<br>4-25-2011<br>Marbab<br>Oil 1-23-2013                              | Marthods<br>2 1 14 - 2009<br>San-tali AL<br>D. LOT<br>R.44 (Pjth)- (Opting)   | d stud<br>d stud<br>stud<br>d stud<br>d stud<br>d stud<br>stud<br>stud<br>stud<br>stud<br>stud<br>stud<br>stud | 3 27 2010   |                          |
|                        | 1944-12 <sup>3</sup> , YQ                       | Mobil)<br>ites Pet. 12<br>Cl 4<br>to 2024                          | (MLYates.II<br>↓ etai)<br>↓<br>● <sup>7</sup> ● <sup>8</sup>   | (MODil)<br>0352858<br>Yates fet.   | ZevintesPut. gi<br>BJ   | (D E Blockmar)<br>(W B Barnhill V2)<br>Pure Res.<br>(Yetes Pet.)  | (WC W.H. Condorto)<br>(WC W.H. Condorto)<br>Contreto      | Yates (Fros, edd) (.404<br>  |  | 31197 Former Carl                                     | Yotes Pet<br>HBC SIZ<br>AIO<br>R.GIOSS.<br>Penosco Ptol  | 9-6-2011   | 2010 A Angdorian)<br>Marting<br>Marting<br>Marting<br>Marting<br>Marting<br>Pon Amer        | HUR G. HOWE ML  | HER ARL CHART  | C C. Einspann   | -                        |
| •                      | "Mob.<br>••∪                                    | )352650<br>1-Fyd<br>1.S.   | Vodine Rustino   | Habil<br>Fed. "US-"and Fed   | OL STISTICAN<br>Sreedia Hiene as<br>9 L Glassera  | Bangie Matlock, to<br>A   | A.Nicholps, etal  | 102232<br>HB7353<br>P379 * 2.400<br>Ottowo Fed." U.  | 1000 100 100 100 100 100 100 100 100 10  | A.Gloss R.E.Glos                                      | pitch Ener.<br>s R.E.Gloss<br>etal a a Wildcat   | Ninkleen 9 ( )<br>R. Glass 9 ( )                       | 10 9400 D.A.<br>14 4 14 51 G. A.<br>14 51 G. A. Thermood<br>14 14 R. Gloss<br>Nearburg      | Linnet feak Ligger<br>A.W. Hadson F. Jlass<br>B.U Dorchester  | Min B B Morrison<br>Min B L Powell   | Johnson G.Gva   | 200                      |
| •'                     | 1.05<br>Veter<br>Sove                           | 11-1-94<br>82644 8<br>5322   | 12 · 13 · 2014<br>Nulari, Callung eral<br><u>R.E. Glass</u> (3)  | C.C.Jo<br>Hild<br>197<br>Yates   | Pet etal<br>V.J   | 6-28-2011<br>i (D.Fasken)<br>Voles Perizr Z • Mo<br>Johnston & Fasken<br>Morr Disc) & Fasken<br>(1.1 Hil) APH   | Honde [.Fosken]   | P490 Pet.etal<br>(D. Fasken)<br>Patrick - API"   | Hite Art. 064408   | Champin<br>Songe Harriso<br>R Sigss<br>Yold Yet       | Byron Ener.<br>SKD<br>In, etal   |  | A Routh 14  | 12 Data (Principal Prop)  | C TA  | Dini Pirci<br>Per Poter<br>O Vertes Pet. et<br>C.L.M. 1 12 15 - 2014      |                          |
| н.<br>                 |   |  | Yotes Pet. etal<br>8-18-2014   | Yates Pot.   | 54.11 54.11<br>9210 9717<br>8 Totes   | Harshall Sonr   | Kakes Morrison<br>Valleck, etcl                           | 17967<br>J. H. Barnie Field<br>R.E. Glass<br>Yatas Pat. stal   | AACo<br>(Odvid   | **************************************                | JI (UXY)   | A Tankin<br>Thomas Vinghia<br>Mann R.Glass             | ShewM.L.C.I.S. Merc.M.I.<br>Bricholos, Williams<br>2 Gloss G.L. Rosc                        | X Neochurg  | Pitche Yater, e<br>C E Nelsm, e  | UNU,LLC Fet.d   | 4<br>65<br>6101          |
| ĺ                      | Yates Per                                       | (1)<br>(1)<br>(1)<br>(1)<br>(1)<br>(1)<br>(1)<br>(1)<br>(1)<br>(1) | A LAMIL<br>Marshall, Eralmi,<br>R.E.Gloss  | (Conoco)<br>(2 10 2) Sem 7   | 3 ALL (DALL'S COL<br>ALL<br>ALL<br>ALL<br>ALL<br>ALL<br>ALL<br>ALL<br>A   | 9 #100  | - 5 - 7<br>mil (0. Fosken, /2<br>Ken 1372                 | \$2845 •1 (<br>#2845 •1 (  | (2.54%) (017455  | ●2 ISWING<br>Votes Pet.<br>32748                      | atton 2 - 2019 Set   | SE Y<br>Rive   | en en<br>Respiration  | Andrei An  | J.L. Lionda  | 10-6-2013   | <u>cu</u>                |
| <u>'</u>               | M   | rshaile,n<br>R.E.Gia   | inston,etgl and  | ALT  | ALET (CONDECO)<br>MES VORES) SALET<br>(011 - BOY2   | 2:400 - 300<br>   | orren Fed.  | #3 5355 000<br>(1273)<br>(1273)<br>Highwryfilliorbar   | 10-Fatta Alia Alia   | *F540<br>"Serrano - Fed"L<br>Oxy Mates http           | 1 8 1 83 1 92746<br>1.5. 18820 1 40029   | Small<br>R.E.<br>R.R. Hill<br>Yatzs F                  | Tracts<br>Glass<br>hkle, etal<br>Pel: etal Mcerburg,  | J. BIAHESAN EST. G. A. AIA<br>Men- CMIEn.<br>SCAS Men- CMIEn.<br>SCAS 2015  | GL.Rase GeaL<br>et al Rase mal W.<br>Mew-<br>Marrae McFarland  | P Ingersoll Ener  | <u>.</u>                 |
|                        | Yates   | C Johnsto<br>Pet., etal<br>-13-2 —                                 | ani siyos<br>Staring and an  | Yates Potero<br>Pet, statestaz<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Cornero<br>Co | Aute Bagger Bray  | 10 3410 L-1697<br>105 L-1697<br>115 S<br>APA-<br>N/2 HBC<br>Yafes [Caqving                                      |   | TVA ( PHIL COSAL C   | Varies Put Parts   | HB# 1200  | Featherstone<br>11-6-2014  | Neorburg<br>Fourchild<br>T08200                        | Trs. 109550   |   | 2 4 2011 Some K  | Marbeb<br>11 6 - 2011   |                          |
| Fto F                  | 10000 - 1                                       | م <sup>ا6</sup> ه.۶<br>۲۱۳۶<br>این الک                             | All and the second   | Cenese Hor Key   | Marinul Como Han  | ST. GUD SHT JIMA<br>ST. GUZ FLE FT. JIMA<br>ST. GUZ FLE FT. JIMA<br>Amere 10 - 71 IPUZA<br>ST. GUZ FLE FT. JIMA | In Provide States   | (Was) Neg(burg<br>(Was) Neg(burg<br>(Handa)<br>(Handa)   | Yates Pet.   |   | Abundance<br>Yates Pet. V24<br>D.B. Fant, D<br>C.C. Grigton(S)   | Than<br>Than<br>Yates Pet., et al                      | s Jones<br>Mann, etal<br>Vares Pet, etal  | Pitch Ener eral   | Moore  | 17<br>  |                          |
| 11<br>100              |   | 4. 8   | Hondo  | 4 (I AD Pet, eka<br>Water<br>Pr Hai<br>UTE   | Votes Pet. etdl   | E-10167 24mm  | Lang an LG.864  | . (2004)<br>. (2004)<br>. (2004)   | to to the second   | TIA ( 5-3H<br>PIDSLYDTOS POT<br>BOUT DOEPCON<br>TOTAL | r colling zold<br>III-co zold<br>Hearburg<br>Hearburg<br>Hearburg  | 4 - 25 - 201<br>Mowbourne<br>12 - 9 - 7012             | 8 - 13 2014<br>Newbourne<br>HS-Xurs   | 1000/100000 (000/10000000000000000000000  | e Pet.   | Mtn Slates<br>Sania Fe La II<br>M 10 9500<br>Dall-11 71                   | 2)<br>70                 |
| 100                    | Fet etail<br>9.111 eta<br>KG System<br>6003     | Lehenen<br>Verter  | Anderson   | Linistan<br>175w<br>Marshal<br>Karta<br>R.t  | I Sarbara-SE<br>IE www.ron.eta pc7<br>E.GASS.eta  | ST  | Are 19  | 25 Arichen   | W.M. Boyd, etal<br>C.C. Grimlan (S)  | ΨΨ,   | ATHE J Fent.eta<br>(1) C. Grimlen (C)<br>Announce  | Boyd Snyder  | J. * octey,eld<br>Js n Fenning<br>rgEupi (I.E. Yales  | Santa fe Land Imp. Co<br>IbdL / Shackelford<br>Marbob 1 1 1 2012  | Shackelfare  | Fe Land Imp. Co<br>Hobanero<br>4:14:2013                                  | -                        |
|                        |   | Peru Tal<br>Pran<br>Pran<br>H.E. Veres<br>Etali                    | 2 (6 5-EG<br>0557142 0716<br>U. 5. HBC 144   | 3.86 5 El<br>0.8254 # P3<br>Yotes Pat. 4<br>0557142 7  | G di usser an<br>ondo s. S. Wres<br>Osto  | Spinifing<br>Spinifing<br>VV. bries   | Roos Add Tang   | Reisection Smith   |  | Bonnie Matlack<br>Carl Rass<br>(Rearburg)             | Cynthio for neman  | E 4 pl. Mewbou   | (Mewbourne,<br>10: 9. 2013 /  | Anne Lese Hullman,<br>Jean Fandian<br>Vates Peteral De Yates P  | etal Winnie Hugh   | e (Sm Trs.)<br>Marbab<br>z 4:2011<br>(Sm.Trs.)<br>Yates Parts<br>2 4 7013 |                          |
| не<br> 31<br>— —       | t for a   | Autowica   | F350 Ross frod<br>F350 U.S.<br>U.S.<br>Corl E.<br>Reas(S   | **************************************   | 16 10-F6 444<br>101 20 444<br>20 414<br>20 414<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20  | Tutes Part<br>Tutes Part<br>Vinger S.P.<br>Vinger S.P.  | 2 (marking<br>Carlaning<br>Osoye<br>2 Yates Pet.          | Vares Reiner   | Antivelli CC.  | S.P Johnson, III, etc<br>S.P. Yoles<br>Nearburg Prod. | Milia Milia Milia C  | Curthia Pice S.I.                                      |   | Star Stenning Linn  | USATO SPUCATE  |   | 7 :<br>                  |
| -00<br>Pzzz<br>190     | Davider<br>Davider<br>Davider<br>Sarster<br>III | Votes<br>Act, chai .   | Period II<br>DD. Stand Peter 940<br>Constant Prost<br>Appriate State<br>Peter State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>State<br>St | 54:044 14  | EG U-EG Strond  | Yolge Pet.<br>PZEEFIMIT:  | AIL STAR  | And the second s | Licarburg +-21   | BI.BTAC.<br>"Porino"<br>Carl Ross etal                | (12.14.2012) (341.012)<br>(347.012) (347.012)<br>(547.012) (347.012) (347.012)<br>(547.012) (347.012) (347.012)<br>(547.012) (34 | (Amoco) Noorrbu<br>(Amoco) 8-22-20<br>70 5580,         | Merbourne (<br>54 6-29-2014 )<br>(Sm. Tra) - 1<br>(Morbob                                   | 1.9:2072 44. Hewbourde (SW4) 5V a 1/00  | Pet. ekui<br>2013<br>2013<br>1.1 unang ka<br>1.1 una   | Lung Corp   |                          |
| TIA                    | *****<br>7765<br>11411                          | Horvey Yor   | And a state of the   | Patrijf<br>Panhandle<br>C.E. Ross  | Att<br>F20 240<br>Rby, f10<br>(S1/275) CPoses<br>Astronomy Cores<br>Astronomy Cores | R Coorts Ind<br>R Coorts Ind<br>Marburg Cort E. Rob<br>Vigtor Burt (Arron)                                      |   | Ross Reh. TIA<br>Necow Ross Reh  | Minnie Robert<br>('aptand Pobert<br>(. Nearburg Expl                               | Cori Rossetal   | 12:14-2012<br>168.00 Ac.<br>YNHO.Scottetai   | Bonnie M<br>Cort F<br>Qito                             | nrs) (1939)<br>allock.etal<br>Ross  | Leevendegriff Jehn Fo   | sik eral , S. John-  | Ling Charles  | 31<br><u>1411</u><br>7   |
| (00)                   | Honixs<br>Honixs<br>Carth                       | les) (<br>9179<br>Yatas Pel.,4<br>, HBC N/2                        | etal e S Votes   | I w Bawan  | S.P. YEARS  | Nearburgs Piotes  | Yotes Pet.  | Neground T   | 187<br>14 187<br>14 187  | hear burg ( 1)  | 2  | Dourne<br>11-4 :2014<br>(Sm. Trs) ()<br>Сог. Мигс      | Se Trs.)  | 1.201022<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.2010<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.20102<br>1.2  | 252012<br>25m.T  | Bor Cone  | ,<br>,                   |
| •                      | ن <sup>4</sup> 500                              | ogger Or   | ow rass Ed Port  | Ast for the start  | 29 Englished Binger   | HI Ross (P)   | Mar Siali E. Winston<br>MWUISIE. 42M                      | "South Boyd"<br>NearburgExpl.  | 141 Pet., etcl   | W.O.<br>Scottetal                                     | 26 4 (1 1 1)   | Poss<br>PH deves \$9<br>etal<br>Marshell Marsh         | 400 00 /Mershell, 1<br>100 00 / 1.54 1013 )<br>100 00 / 1.54 1013 )<br>100 00 / 1.54 1013 ) | Contraction of the second seco  | //   | 1255 29 887 HIA.  | ,0 <sup>c</sup>          |
| 7-2 W<br>9<br>707 "    | S Pronns  | 07 Pet. efel<br>ene + 101<br>105                                   |  | 2 Yotes Pa<br>pati<br>P528 (Monsorts<br>2-10167<br>Y ates Pet  | ** 3 5<br>91 Pli* P596<br>"]"Boyd"X*State"  | * cose 347  | FINO HAS OF   | PLEATIN TIN<br>CESCHINGENTON<br>Nearburg 12  | 10504364<br>Nearburg<br>Nowk-Feel  | VB-60   | 9  | 2 - 1 - 2017 44-2 - 20<br>HTSH                         | 13-13-1013<br>  | → 1 100 000 8 1 2010<br>→ 1 100 00 8 1 2010<br>→ 1 100 00 7485<br>→ | GER BA   | R<br>Str  | 74.7<br>1019             |
| ites                   | /9 S Co<br>244                                  |  | P Expl. Many Rd.   | Aspolit Fed. 74<br>Aspolit Fed. 74<br>U.S P31<br>Nearburg Expl.<br>Vates Pel. etai   | 0 51 01   | Texas Int. Pe   | Cotherine William<br>Helen Melton                         | YATES PE   | TETAL (OP)   | Slore<br>9 <sup>AH</sup> Me                           | E D. Moore Jr.<br>Nele Hernbeck  | U.5.   | Marbab  | and sur Yate  | e Pet., Vyata Pat  | State OST Coheren   | د<br>معرب<br>کور         |
| 5-00<br>F343<br>5.Pef. | 'र्मग≱<br>दाउड इ                                |  | 1: 1/1 (000 6)   | U.S Jage Se  | Votre fel 19 397  | ATIA  |   | Unit Pd. 'Po   | RAW Und Pet.   | Marbeb  | 50 00 Marbab   | V 4012<br>1,75513<br>Morthub                           | 120599<br>(Morbob<br>6-1-707  | Selface. Honey 9 . 10<br>may ran 940 years 11 . 1<br>erg ran 940 years 11 . 1<br>YotesPet. etal   |  |   |                          |
| ASS.                   | ғия 4<br>•• родд<br>Gn:7k — т                   | (1020)<br>11 0 mm - 1<br>  | TO 8000  | Y. 3301  | Mansanto Tosaso<br>Albertot. Sovannah<br>Tosza State<br>Nearburg  | E-6096  | slave 127896  | Aloke (P/B)<br>1.2 Mail<br>Merr Orker  | (Penn Disc)  | ВНL   | Hany em High Fed.<br>35 +  | 6'   | 36  | Northerong  | Pion etal  | 3221 4000 -   | anana<br>Anana           |
| і<br>т/л<br>701        | Vote 199  | المتع<br>محمد الم  | Active Postar  | Albert Foster  | 96820<br>2150 <u>90</u>   | ₩1 12.1.200<br>₩1 136046<br>93197 5300  | 3 J A+ Huber<br>J S- + #7<br>H 15791<br>(Mark Prod.       | Nearburg Prod  |  | "Gulf-Fed"<br>West'n<br>Lokewood                      | "Tombstane fed."   | Gulf   |   | 10165 Fet, 20<br>12 · 27 · 2012   | Adoutrou   |   | impbeli<br>Yoy<br>1 1 59 |
| 132<br>- 51            |   | (1.S.  | 400 163533   | Salis Spore  | 3.4 Mit U. S.   | Doromi-Fed."  | 1 Holstun<br>TD 9550<br>U.S. D(A7.20.74                   | Yeso Disc<br>P 76  | U J. Lakewood  | Bi saiti [  | ИТ. ВИЦ . ОВИ  | Jhugari<br>Tosise<br>UHLOIA4-ES TS                     | 1 VO 707 °<br>Sidte 1,20500   | f, Yates<br>Darethy Sent  | Bros. Inc. C.R.Pear<br>Ind   | man, Moulray B  | n KAI<br>roa h<br>IIII   |

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### Wellbore Diagram

### Operator: Nearburg Producing Company

Well Name: Fairchild 24 #1



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### Fairchild 13 #1 SWD C-108 Additional Details

VII. 1. Proposed average rate of 5000 bwpd and maximum rate of 10,000 bwpd.

2. Closed system.

3. Proposed average injection pressure is unknown and the maximum injection pressure is 1560 psig (0.2 psi/ft).

4. Injection fluid will be from the Mewbourne Oil Company operated Yeso producing wells in the area. See attached water analysis for both the Yeso and Canyon produced water in this area and the water mixing reports of those waters.

5. See attached analysis.

VIII. 1. The proposed injection interval is in the Canyon (Upper Penn) formation which is a porous dolomite about 240' thick at depths 7843' – 8083'.

2. The underground fresh water aquifers (unnamed) are present at shallow depths down to about 750'. There are no known fresh water intervals underlying the injecting formation.

- IX. The proposed stimulation is an ope-hole acid treatment of 5000 gallons of 20% HCL.
- X. All logs were filed with the OCD in 1997 when the Fairchild 13 #1 was drilled.
- XI. See attached.
- **XII.** Mewbourne Oil Company has examined geologic and engineering data and has found that there is no evidence of faulting between the proposed disposal zone and any underground sources of drinking water.

XIII. Proof of Notice

- 1. A certified letter, and a copy of this application, to offset operators are attached. Mewbourne Oil Company owns the surface.
- 2. N/A

## Fairchild 13 # 1 SWD C-108 Application Attachments # 7-4&5

Samples of produced water were all taken 1/20/11 on the following wells

| Mewbourne Oil Co   | Wyatt Draw 18/19 LD # 1H | Yeso horizontal | (Sec           |
|--------------------|--------------------------|-----------------|----------------|
| 18/19, T19S, R26E) |                          |                 |                |
| Mewbourne Oil Co   | Wyatt Draw 24/25 LE # 1H | Yeso horizontal | (Sec           |
| 24/25, T19S, R25E) |                          | ۱.              |                |
| Nearburg Producing | B&B#4                    | Cisco/Canyon    | (Sec 22, T19S, |
| R25E)              |                          | ·               | •              |

These are the waters that would be commingled if Mewbourne Oil Company is granted permission to dispose water into Canyon zone we are requesting for the Fairchild 13 # 1 SWD well.

Samples were taken to BJ for complete composition analysis and are attached below.

Also attached are results of the compatibility study done by baker Hughes Petrolite.

The results concluded that these three waters are compatible together and could be commonly disposed of.





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# Individual Water Analyses

| [                       | Summary              | of Mixing Waters |  |
|-------------------------|----------------------|------------------|--|
| Sample Number           | 538168               | 538169           | 538170                                 |
| Company                 | MEWBOURNE OIL CO     | MEWBOURNE OIL CO | MEWBOURNE OIL CO                       |
| Lease                   | B & B C SISCO CANYON | WYATT DRAW 24/25 | WYATT DRAW 18/19                       |
| Well                    | 4                    | LE 1H            | LD 1H                                  |
| Sample Location         | WELLHEAD             | WELLHEAD         | WELLHEAD                               |
| Anions (mg/L)           |                      |                  | ······································ |
| Chloride                | 1,842                | 89,335           | 5,432                                  |
| Bicarbonate             | 976                  | 988              | 780                                    |
| Sulfate                 | 2,330                | 4,287            | 2,827                                  |
| Cations (mg/L)          |                      |                  |  |
| Sodium                  | 2.019                | 55.640           | 3,896                                  |
| Magnesium               | 59.0                 | 640              | 199                                    |
| Calcium                 | 444                  | 2.743            | 762                                    |
| Strontium               | 7.50                 | 48.0             | 11.0                                   |
| Barium                  | 0.10                 | 0.10             | 0.10                                   |
| iron                    | 21.0                 | 3.50             | 1.50                                   |
| Potassium               | 26.0                 | 560              | 27.0                                   |
| Manganese               | 0.90                 | 0.10             | 0.06                                   |
| Anion/Cation Ratio      | 1.00                 | 1.00             | 1.00                                   |
| TDS (mg/L)              | 7,726                | 154,244          | 13,936                                 |
| Density (g/cm)          | 1.01                 | 1.10             | 1.01                                   |
| Sampling Date           | 1/19/11              | 1/19/11          | 1/19/11                                |
| Account Manager         | GENE ROGERS          | GENE ROGERS      | GENE ROGERS                            |
| Analyst                 | STACY SMITH          | STACY SMITH      | STACY SMITH                            |
| Analysis Date           | 1/21/11              | · 1/21/11        | 1/21/11                                |
| pH at time of sampling  | 7.50                 | 7.00             | 7.50                                   |
| pH used in Calculations | 7.50                 | 7.00             | 7.50                                   |

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# Water Analysis Report

### MEWBOURNE OIL CO

B & B C SISCO CANYON 4

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WELLHEAD

| Summary of Enter                                     | red Data    |                          | Sar            | mple 538       | 3168 @ 75°F             |                      |               |
|--|-------------|--------------------------|----------------|----------------|-------------------------|----------------------|---------------|
| Sampling Date  | 1/19/11     | Anions                   | mg/l           | meq/l          | Cations                 | mg/l                 | meq/l         |
| Analysis Date  | 1/21/11     | Chloride                 | 1,842          | 52.0           | Sodium                  | 2,019                | 87.8          |
| Analyst  | STACY SMITH | Bicarbonate              | 976            | 16.0           | Magnesium               | 59.0                 | 4.8           |
|  |             | Carbonate                | 0.00           | 0.00           | Calcium                 | 444                  | 22.3          |
| TDS (mg/l or g/m³)                                   | 7,726       | Sulfate                  | 2,330          | 48.5           | Strontium               | 7.50                 | 0.13          |
| Density (g/cm <sup>3</sup> or tonne/m <sup>3</sup> ) | 1.0060      | Phosphate                | N/A            | N/A            | Barium                  | 0.10                 | 0.0           |
| Anion/Cation Ratio                                   | 1.00        | Borate                   | N/A            | N/A            | Iron                    | 21.0                 | 0.7           |
|  |             | Silicate                 | N/A            | N/A            | Potassium               | 26.0                 | 0.60          |
| Carbon Dioxide                                       | 120 PPM     |                          |                |                | Aluminum                | N/A                  | N/#           |
|  |             | Hydrogen Sulfide         |                | 493 PPM        | Chromium                | N/A                  | N/#           |
|  |             |                          |                |                | Copper                  | N/A                  | N/#           |
|  |             | pH at time of sampling   | ng             | 7.50           | Lead                    | N/A                  | N/A           |
|  |             | pH at time of analysi    | s              |                | Manganese               | 0.90                 | 0.03          |
|  |             | pH used in Calculat      | tions          | 7.50           | Nickel                  | N/A                  | N/A           |
|  |             | Specific ion interaction | s calculated I | for ions in bo | Id faced type; other io | ns contribute to ior | hic strength. |

| Conditions Values Calculated at the Given Conditions - Amounts of Scale in lb/1 |                 |                     |        |                      |              |                    |        |                     |        | b/1000bt        | ol     |                  |
|---|-----------------|---------------------|--------|----------------------|--------------|--------------------|--------|---------------------|--------|-----------------|--------|------------------|
| Тетр.   | Gauge<br>Press. | e Calcite<br>CaCO 3 |        | Gypsum<br>CaSO₄•2H₂O |              | Anhydrite<br>CaSO₄ |        | Celestite<br>SrSO 4 |        | Barite<br>BaSO₄ |        | CO 2<br>Fugacity |
| ۴F  | psi             | Index               | Amount | Index                | Index Amount |                    | Amount | Index               | Amount | Index           | Amount | psi              |
| 80  | 0.00            | 1.09                | 96     | -0.20                | ,            | -0.27              |        | -0.30               | )      | 0.99            | 0.05   | 0.36             |
| 100   | 0 00            | 1.19                | 109    | -0.21                | ļ            | -0.22              | -0.22  |                     | -0.29  |                 | 0.05   | 0.50             |
| 120   | 0 00            | 1.29                | 123    | -0.22                |              | -0.14              | -0.14  |                     | ·      | 0.71            | 0.05   | 0.66             |
| 140   | 0.00            | 1.40                | 138    | -0.21                |              | -0.04              | -0.04  |                     | -0.25  |                 | 0.04   | 0.85             |

Precipitation of each scale is considered separately; total scale will be less than the sum of the amounts of the five scales.

The amount of scale indicates the severity of the problem; the index (equivalent to Stiff Davis SI) indicates how difficult it is to control the problem

The CO<sub>2</sub> fugacity is reported. Under usual conditions it is essentially the same as the CO<sub>2</sub> partial pressure.

Account Manager GENE ROGERS

**Baker** Petrolite

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HUGHES

Analysis: 47116



Scale Calculations from Baker Petrolite using Program WASEQ

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| Ŀ                   | ]                |   |                    |             |       | N           | <b>ATE/</b><br>Artesia | <b>R</b> A<br>Distric<br>575) 74 | <b>NAL }</b><br>t Labora<br>6-3140 | SIS<br>story |           |                            |                   |
|---------------------|------------------|---|--------------------|-------------|-------|-------------|------------------------|----------------------------------|------------------------------------|--------------|-----------|----------------------------|-------------------|
| BJ S                | Services         | ;<br>                                   |                    |             |       |             |                        |                                  |                                    |              |           |                            | -                 |
| Operato             | r:               | Mewbo                                   | ume Oi             | l Compa     | any   |             | Dat                    | e:                               |                                    | 012011       | 1         |                            |                   |
| Well:               |                  | B&B #4                                  | ł                  |             |       |             | Dis                    | trict:                           |                                    | Artesia      |           |                            |                   |
| Formatic            | on:              | Cisco (                                 | Canyon             |             |       |             | Rec                    | juester                          | <b>1:</b>                          |              |           |                            |                   |
| Field:              |                  |   |                    |             |       |             | Tec                    | hnicia                           | n:                                 | Dustin       |           |                            |                   |
| County:             |                  |   |                    |             |       |             | Sou                    | ırce:                            | r                                  |              |           |                            |                   |
| Depth:              |                  | Cisco C                                 | anyon              |             |       |             | PFS                    | S Test #                         | ¥:                                 |              |           |                            |                   |
|                     | -                |   |                    |             |       |             | <u>M:W</u>             | later Ar                         | alysis\                            | Custon       | ier:      | والمحادث والمحادث والمحادث | سيبين الكرينيين ا |
|                     | P                | H: 6.8                                  | 3                  |             |       |             |                        | Т                                | emp (F):                           |              | 63.8      |                            |                   |
| Specific            | Gravity          | r: 1.0 <sup>-</sup>                     | 15                 |             |       |             |                        |                                  | H2\$:                              | •            |           |                            |                   |
| CATION              | <u>NS</u>        |   |                    |             |       |             |                        |                                  | mg/l                               | ា            | ne/l      | ppm                        |                   |
| Sodium (            | (calc.)          |   |                    |             |       |             |                        |                                  | 1743                               | 7            | 5.8       | 1718                       |                   |
| Calcium             | •                |   |                    |             |       |             |                        |                                  | 385                                | i 1          | 9.2       | 379                        |                   |
| Magnesi             | um               |   |                    |             |       |             |                        |                                  | 44                                 |              | 3.6       | 43                         |                   |
| Barium              |                  |   |                    |             |       |             |                        |                                  | < 25                               |              |           |                            |                   |
| Potassiu            | m                |   |                    |             |       |             |                        |                                  | < 10                               |              |           |                            |                   |
| ron                 |                  |   |                    |             |       |             |                        |                                  | 0, -                               | 1            | 0.0       | 0                          |                   |
|                     |                  |   |                    |             |       |             |                        |                                  | Ų                                  |              | 0.0       | Ŭ                          |                   |
| ANIONS              | 3                |   |                    |             |       |             |                        |                                  |                                    |              |           |                            |                   |
| Chloride            |                  |   |                    |             |       |             |                        |                                  | 1600                               | 4            | 5.1       | 1576                       |                   |
| Sulfate             |                  |   |                    |             |       |             |                        |                                  | 1600                               | 3            | 3.3       | 1576                       | 1                 |
| Carbonat            | e                |   |                    |             |       |             |                        |                                  | < 1                                |              |           |                            |                   |
| licarbon            | ate              |   |                    |             |       |             |                        |                                  | 1232                               | 2            | 0.2       | 1214                       |                   |
| iotal Dis           | solved           | Solids(cal                              | c.)                |             |       |             |                        |                                  | 6604                               |              | 1         | 6507                       |                   |
| otal Har            | dness a          | as CaCO3                                |                    |             |       |             |                        |                                  | 1141                               | 2            | 2.8       | 1125                       |                   |
| COMME<br>Resistivit | NTS:<br>v is 1.2 | (325 gr/gal                             | 1)                 |             |       |             |                        |                                  |                                    |              |           |                            |                   |
| SCALE               | ANAL             | YSIS:                                   | • • •              |             |       |             |                        |                                  |                                    |              |           | _                          |                   |
| acus facu           | or<br>           | 474347.                                 | /12                |             |       |             | Calci                  | um Carb                          | onate Sca                          | le Probat    | niity     | Remote                     |                   |
| 1304 Facio          |                  | 01593                                   |                    |             |       | <u></u>     | Galci                  |                                  | are scale F                        | ropability   | <u>/:</u> | MOSSIDIA                   |                   |
| 6                   | v 5              | u 40                                    | 30                 | 20          | 1<br> | U<br>       |                        | 10<br>                           | 20                                 | 30<br>       | 40        | 50 6                       | 0                 |
| Ì                   | STIF             | F PLOT                                  | \ <del>``}``</del> | . 1         |       | <del></del> | Ţ                      |                                  |                                    |              |           | · ] · .                    |                   |
| Na & K              |                  |   | <u></u>            | <del></del> | · · . | <u></u>     | 4                      | _                                |                                    |              | 1 11-     |                            | ÇI                |
|                     | , '              |   | ,   ·              |             | :     | · · .       |                        |                                  |                                    |              |           |                            | Иссор             |
| Ca                  |                  |   | ;                  |             |       |             | NT:                    |                                  |                                    |              |           | ·                          |                   |
| Mg                  |                  | • · · · · · · · · · · · · · · · · · · · |                    |             |       | ·           | 4.                     |                                  |                                    |              | <u>.</u>  |                            | S04               |
|                     | F . 1            |   | l l                | ł           |       |             | - KV: '                | 8. I                             | 1                                  | · .          | 1 1       |                            | ł                 |

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# Water Analysis Report

MEWBOURNE OIL CO WYATT DRAW 18/19 LD 1H WELLHEAD

BAKER HUGHES Baker Petrolite

> BAKER HUGHES

Baker Petrolite

Account Manager GENE ROGERS

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| Summary of Enter                                     | red Data       | Sample 538170 @ 75°F     |                |                |                        |                      |              |  |  |  |  |
|--|----------------|--------------------------|----------------|----------------|------------------------|----------------------|--------------|--|--|--|--|
| Sampling Date  | 1/19/11        | Anions                   | mg/l           | meq/l          | Cations                | mg/l                 | meq/l        |  |  |  |  |
| Analysis Date  | 1/21/11        | Chloride                 | 5,432          | 153            | Sodium                 | 3,896                | · 16         |  |  |  |  |
| Analyst  | STACY SMITH    | Bicarbonate              | 780            | 12.8           | Magneslum              | 199                  | 16.          |  |  |  |  |
|  |                | Carbonate                | 0.00           | 0.00           | Calcium                | 762                  | 38.          |  |  |  |  |
| TDS (mg/l or g/m³)                                   | 13,936         | Sulfate                  | 2,827          | 58.9           | Strontium              | 11.0                 | 0.2          |  |  |  |  |
| Density (g/cm <sup>3</sup> or tonne/m <sup>3</sup> ) | 1.0110         | Phosphate                | N/A            | N/A            | Barium                 | 0.10                 | 0.0          |  |  |  |  |
| Anion/Cation Ratio                                   | 1.00           | Borate                   | N/A            | N/A            | Iron                   | 1.50                 | 0.0          |  |  |  |  |
|  |                | Silicate                 | N/A            | N/A            | Potassium              | 27.0                 | 0.6          |  |  |  |  |
| Carbon Dioxide                                       | 280 PPM        | _                        |                |                | Aluminum               | N/A                  | N//          |  |  |  |  |
|  |                | Hydrogen Sulfide         |                | 850 PPM        | Chromium               | N/A                  | N/#          |  |  |  |  |
|  |                |                          |                |                | Copper                 | N/A                  | N//          |  |  |  |  |
|  |                | pH at time of samp       | ling           | 7.50           | Lead                   | N/A                  | N/A          |  |  |  |  |
|  |                | pH at time of analy      | sis            |                | Manganese              | 0.06                 | 0.00         |  |  |  |  |
|  |                | pH used in Calcul        | ations         | 7.50           | Nickel                 | N/A                  | N/A          |  |  |  |  |
| · · · · · · · · · · · · · · · · · · ·                |                | Specific ion interaction | ons calculated | for ions in bo | d faced type; other io | ns contribute to ron | nic strength |  |  |  |  |
| Constitution of the                                  | Inon Calandata | d at the Chiese C        |                | A              | and a f O a alla l     | - 11. 1400044        | 1            |  |  |  |  |

| Cond  | itions          | Values Calculated at the Given Conditions - Amounts of Scale in Ib/1000bbl |        |                      |        |            |                    |       |               |                 |        |                             |
|-------|-----------------|--|--------|----------------------|--------|------------|--------------------|-------|---------------|-----------------|--------|-----------------------------|
| Temp. | Gauge<br>Press. | Calcite<br>CaCO <sub>3</sub>   |        | Gypsum<br>CaSO₄•2H₂O |        | Anhy<br>Ca | Anhydrite<br>CaSO₄ |       | estite<br>SO₄ | Barite<br>BaSO₄ |        | CO <sub>2</sub><br>Fugacity |
| °F    | psi             | Index  | Amount | Index                | Amount | Index      | Amount             | Index | Amount        | Index           | Amount | psi                         |
| 80    | 0.00            | 1.13   | 84     | -0.06                |        | -0.13      |                    | -0.20 |               | 0.91            | 0.05   | 0.27                        |
| 100   | 0.00            | 1.22   | 95     | -0.08                |        | -0.08      |                    | -0.20 |               | 0.75            | 0.05   | 0.37                        |
| 120   | 0.00            | 1.31   | 107    | -0.08                |        | 0.00       | 0                  | -0.18 |               | 0.62            | 0.04   | 0.50                        |
| 140   | 0.00            | 1.40   | 119    | -0.07                |        | 0.10       | 142                | -0.15 |               | 0.52            | 0.04   | 0.66                        |

Precipitation of each scale is considered separately; total scale will be less than the sum of the amounts of the five scales.

The amount of scale indicates the severity of the problem, the index (equivalent to Stiff Davis SI) indicates how difficult it is to control the problem,

The CO<sub>2</sub> fugacity is reported. Under usual conditions it is essentially the same as the CO<sub>2</sub> partial pressure.

Page 1



Scale Calculations from Baker Petrolite using Program WASEQ PRODUCT WARRANTY, DISCLAIMER AND LIMITATION OF LIABILITY ARE FOUND ON THE BACK OF THIS SHEET

Page 2

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| BJ Ser  | vices                                   |                      | WATER AN<br>Artesia District<br>(575) 746-                                | IALYS<br>Laborator<br>3140 | r <b>IS</b><br>TY           |                   |             |
|---|---|----------------------|---|----------------------------|-----------------------------|-------------------|-------------|
| Operator:<br>Well:<br>Formation:<br>Field:<br>County:<br>Depth: | Mewbourne<br>Wyatt Draw<br>Yeso<br>Yeso | Oil Company<br>14/14 | Date:<br>District:<br>Requested:<br>Technician:<br>Source:<br>PFS Test #: | 0'<br>Ai<br>D              | 12011<br>rtesia<br>ustin    |                   |             |
| L   |   |                      | M:Water Ana   | lysis\ Ci                  | ustomer:                    |                   |             |
| Specific Gra  | pH: 6.8<br>avity: 1.015                 |                      | Tei   | np (F):<br>H2S:            | 68.3                        |                   |             |
| CATIONS<br>Sodium (cal  | l¢.)                                    |                      |   | mg/l<br>683<br>978         | <b>me/l</b><br>29.7<br>48.8 | <b>ppm</b><br>673 |             |
| Magnesium<br>Barium<br>Potassium                                |   |                      |   | 262<br>< 25<br>< 10        | 21.6                        | 259               |             |
| Iron  | ,                                       |                      |   | 0                          | 0.0                         | 0                 | ·           |
| ANIONS<br>Chloride<br>Sulfate<br>Carbonate                      |   |                      |   | 2000<br>1600<br>< 1        | 56.4<br>33.3                | 1970<br>1576      |             |
| Bicarbonate   | 2                                       |                      |   | 634                        | 10.4                        | 625               |             |
| Total Dissol  | ved Solids(calc.)                       |                      |   | 6158                       |                             | 6067              |             |
| Total Hardn   | ess as CaCO3                            |                      |   | 3524                       | 70.4                        | 3472              |             |
| COMMEN<br>Resistivity is  | <u>FS:</u><br>s .65(650 gr/gal)         |                      |   |                            |                             |                   |             |
| CaCO3 Factor  | 620722.336                              |                      | Calcium Carbo   | nate Scale i               | Probability                 | Possible          |             |
| CaSO4 Factor  | 1565504                                 |                      | Calcium Sulfat  | Scale Pro                  | bability:                   | Possible          |             |
| 60  | 50 40 3                                 | 0 20 10              | 00 10   | 20 30                      | 0 40                        | 50 6              | 0           |
| Na&K  | STIFF PLOT                              |                      |   |                            |                             |                   | CI          |
| Ca Li   |   |                      |   |                            |                             |                   | нсоз<br>504 |
|   |   |                      | V   | l<br>1                     |                             |                   |             |



## Water Analysis Report

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MEWBOURNE OIL CO WYATT DRAW 24/25 LE 1H WELLHEAD



Baker Petrolite

Account Manager GENE ROGERS

| Summary of Ente                                      | red Data    |                           | Sar          | nple 538       | 8169 @ 75°F           |                        |              |
|--|-------------|---------------------------|--------------|----------------|-----------------------|------------------------|--------------|
| Sampling Date  | 1/19/11     | Anions                    | mg/l         | meq/l          | Cations               | mg/l                   | meq/l        |
| Analysis Date  | 1/21/11     | Chloride                  | 89,335       | 2,520          | Sodium                | 55,640                 | 2,420        |
| Analyst  | STACY SMITH | Bicarbonate               | 988          | 16.2           | Magnesium             | 640                    | 52.7         |
|  |             | Carbonate                 | 0.00         | 0.00           | Calcium               | 2,743                  | 137          |
| TDS (mg/l or g/m³)                                   | 154,244     | Sulfate                   | 4,287        | 89.3           | Strontium             | 48.0                   | 1.10         |
| Density (g/cm <sup>3</sup> or tonne/m <sup>3</sup> ) | 1,1030      | Phosphate                 | N/A          | N/A            | Barium                | 0.10                   | 0.00         |
| Anion/Cation Ratio                                   | 1.00        | Borate                    | N/A          | N/A            | Iron                  | 3.50                   | 0.13         |
|  |             | Silicate                  | N/A          | N/A            | Potassium             | 560                    | 14.3         |
| Carbon Dioxide                                       | 600 PPM     |                           |              |                | Aluminum              | N/A                    | N/A          |
|  |             | Hydrogen Sulfide          |              | 340 PPM        | Chromium              | N/A                    | N/A          |
|  |             |                           |              | :              | Copper                | N/A                    | N/A          |
|  | !           | pH at time of sampling    | g            | 7.00           | Lead                  | N/A                    | N/A          |
| · ·  | !           | pH at time of analysis    | -<br>        |                | Manganese             | 0.10                   | 0.00         |
|  |             | pH used in Calculati      | ons          | 7.00           | Nickel                | <u>N/A</u>             | N/A          |
|  |             | Specific ion interactions | calculated f | or ions in bol | d faced type; other i | ions contribute to ior | nic strength |
| Conditiona   |             | d at the Civer Co         | - d!4!       |                | man of Coole          | 1- 16/4000LL           | 7            |

| Cond  | itions         | V            | Values Calculated at the Given Conditions - Amounts of Scale in Ib/1000bbl |        |         |                               |        |                   |        |                |        |      |
|-------|----------------|--------------|--|--------|---------|-------------------------------|--------|-------------------|--------|----------------|--------|------|
| Temp. | Gauge<br>Press | auge Calcite |  | Gypsum |         | Anhydrite                     |        | Celestite         |        | Barite<br>BaSO |        | co,  |
|       | 77033.         | Cat          | <i>J J J</i>   | Ca304  | ·2H 2 U | $1_2 \cup Caso_4 \cup Srso_4$ |        | Bast <sub>4</sub> |        | Fugacity       |        |      |
| °F    | psi            | Index        | Amount   | Index  | Amount  | Index                         | Amount | Index             | Amount | Index          | Amount | psi  |
| 80    | 0.00           | 1.13         | 112  | 0.04   | 132     | 0.04                          | 116    | -0.00             |        | 0.43           | 0.03   | 0.76 |
| 100   | 0.00           | 1.18         | 123  | -0.03  |         | 0.04                          | 110    | -0.03             |        | 0.23           | 0.02   | 1.03 |
| 120   | 0.00           | 1.22         | 134  | -0.09  |         | 0.06                          | 170    | -0.05             |        | 0.06           | 0.01   | 1.37 |
| 140   | 0.00           | 1.26         | 145  | -0.13  |         | 0.11                          | 283    | -0.05             |        | -0.09          |        | 1.80 |

Precipitation of each scale is considered separately; total scale will be less than the sum of the amounts of the five scales.

The amount of scale indicates the severity of the problem; the index (equivalent to Stiff Davis SI) indicates how difficult it is to control the problem.

The  $CO_2$  fugacity is reported. Under usual conditions it is essentially the same as the  $CO_2$  partial pressure.



Scale Calculations from Baker Petrolite using Program WASEQ PRODUCT WARRANTY, DISCLAIMER AND LIMITATION OF LIABILITY ARE FOUND ON THE BACK OF THIS SHEET

Page 2

BJ SERVICES

| Li<br>BJ S   | ervices                     |   |                       |                                       | W)<br>Al | <b>ATE</b><br>rtesia k<br>(5                | <b>R AN</b><br>District L<br>75) 746-3              | <b>ALY</b><br>_abora<br>3140 | 'SIS<br>tory                   |                              |      |
|--|-----------------------------|---|-----------------------|---------------------------------------|----------|---|---|------------------------------|--------------------------------|------------------------------|------|
| Operator<br>Well:<br>Formatio<br>Field:<br>County:<br>Depth: | :<br>ภ:                     | Mewbourne<br>Wyatt Drav<br>Yeso<br>Yeso | e Oil Con<br>v #2 もんた | ipany                                 |          | Date<br>Distr<br>Req<br>Tech<br>Sour<br>PFS | :<br>rict:<br>uested:<br>nician:<br>rce:<br>Test #: |                              | 012011<br>Artesia<br>Dustin    |                              |      |
|  |                             |   |                       |                                       | _        | M:Wa  | ter Analy   | ysis!                        | Customer:                      | -                            |      |
| Specific (   | pH:<br>Gravity:             | 6.68<br>1.105                           |                       |                                       |          |   | Ten   | np (F):<br>H2S:              | 68                             |                              |      |
| CATION<br>Sodium (<br>Calcium                                | <u>IS</u><br>calc.)         |   |                       |                                       |          |   | 1   | <b>mg/I</b><br>28455<br>3609 | <b>me/i</b><br>5587.4<br>180.1 | <b>ppm</b><br>116249<br>3266 |      |
| Magnesiu<br>Barium<br>Potaseiuu                              | រកា                         | ~~                                      |                       | •                                     |          |   |   | 486<br>< 25<br>< 10          | 40.0                           | 440                          |      |
| Iron   |                             |   |                       |                                       |          |   |   | 0                            | 0.0                            | 0                            |      |
| ANIONS<br>Chloride<br>Sulfate<br>Carbonate                   | e                           |   |                       |                                       |          |   | 2   | 04000<br>1600<br>< 1         | 5754.6                         | 184615                       |      |
| Bicarbon:<br>Total Diss                                      | ate<br>solved Sol           | ids(calc.)                              |                       |                                       |          |   | 3   | 39345                        | 19.0                           | 307100                       |      |
| Total Hard   | dness as (                  | CaCO3                                   |                       |                                       |          |   |   | 11014                        | 220.1                          | 9967                         |      |
| COMME<br>Resistivit  | <u>NTS:</u><br>y is .1(5,00 | <u>)0 gr/gal)</u>                       |                       |                                       |          |   |   |                              |                                |                              |      |
| SCALE<br>CaCO3 Facto<br>CaSO4 Facto                          | ANALYS<br>or<br>or          | 4314920.4<br>5774400                    |                       |                                       |          | Calciu<br>Calciu                            | ım Carbor<br>ım Sulfate                             | nate Sca<br>Scale P          | le Probability<br>robability:  | Probable<br>Possible         |      |
| 6  | 0 50                        | 40 :                                    | 30 20                 | ) 1                                   | 0        | 00  | 10  | 20                           | <b>30 40</b>                   | 50                           | 80   |
| Na & K   | STIFF P                     | LOT                                     |                       | · · · · · · · · · · · · · · · · · · · |          | · · · ·                                     |   |                              |                                |                              | CI   |
| Ca   |                             |   |                       |                                       |          | 1   |   |                              |                                |                              | HCO3 |
|  | ·                           |   |                       |                                       |          | $\bigvee$                                   |   |                              |                                |                              |      |



## Mixed Water Analysis Report

Mixes at 80°F and 0 psi

|  |        | F                            | Predictio | ns of Sa             | turation | Index al           | nd Amoul | nt of Sc           | ale in lb/: | 1000ьы     |                           |      |
|--|--------|------------------------------|-----------|----------------------|----------|--------------------|----------|--------------------|-------------|------------|---------------------------|------|
| Mixes of<br>538168 and<br>538169 with<br>538170. |        | Calcite<br>CaCO <sub>3</sub> |           | Gypsum<br>CaSO₄•2H₂O |          | Anhydrite<br>CaSO₄ |          | Celestite<br>SrSO₄ |             | Bai<br>Bas | CO <sub>z∵</sub> Fugacity |      |
| 538168   | 538169 | index                        | Amount    | Index                | Amount   | Index              | Amount   | Index              | Amount      | Index      | Amount                    | psi  |
| 33%  | 34%    | 1.02                         | 92.1      | -0.17                |          | -0.21              |          | -0.17              |             | 0.60       | 0.04                      | 0.45 |

Precipitation of each scale is considered separately; total scale will be less than the sum of the amounts of the five scales.

The amount of scale indicates the severity of the problem; the index (equivalent to Stiff Davis SI) Indicates how difficult it is to control the problem. The  $CO_2$  fugacity is calculated. Under usual conditions it is essentially the same as the  $CO_2$  partial pressure.

Disclaimer of Llability: Baker Petrolite Corporation and its affiliates (BPC) disclaim all warranties or representations express or unplied, including any implied warranties of merchantability or fitness for a particular purpose or to the accuracy, correctness or completeness of such information herein or that reliance on such information will accomplish any particular result. All such information is furnished "as is" and by using such information the user is assuming all liabilities for the use or reliance on such information. BPC SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, PUNITIVE, EXEMPLARY OR CONSEQUENTIAL DAMAGES OR LOSSES FROM ANY CAUSE WHATSOEVER INCLUDING BUT NOT LIMITED TO ITS NEGLIGENCE.

| Complete Water Compositions |        |        |   |  |  |  |  |  |   |  |  |
|-----------------------------|--------|--------|---|--|--|--|--|--|---|--|--|
| 538168                      | 538169 | 538170 | T |  |  |  |  |  | Γ |  |  |
| 33.0%                       | 34.0%  | 33.0%  |   |  |  |  |  |  |   |  |  |



PRODUCT WARRANTY, DISCLAIMER AND LIMITATION OF LIABILITY ARE FOUND ON THE BACK OF THIS SHEET Graphs of Mixes of 538168 and 538169 with 538170 at 80°F and 0 psi from Baker Petrolite

### Fairchild 13 # 1 SWD C-108 Application Attachments # 11

Samples were all taken 1/21/11

Samples were all taken in three wells in the SE4 of Section 13 approximately 3300' due East of proposed SWD site.

The New Mexico Office of State Engineer showed there to be 6 fresh water wells in this 1 mile radius. One of the six was never drilled, another is without pump or unable to produce now, and another had no trespassing signs up all around the property with dogs, and no means of getting in touch with property owners. We have provided here samples from the 3 closes fresh water wells. I spoke to Richard Ezeanyim w/OCD and he told me that the samples collected from these three wells would be more than adequate to satisfy this portion of the application.



# BRANDON & CLARK, INC.

Keeping Industry Humming

SINCE 1950 Sales - Service - Repair - Installation



ART LONG LILLS

21



# New Mexico Office of the State Engineer Point of Diversion by Location

(with Owner Information)

|   |             | (acre ft per an            | inum)            |        |            |       | (quarte | ers are 1=<br>(quar <u>t</u> ers | NW 2=N<br>are sm | IE 3=<br>allest | SW 4=S<br>to large | SE)<br>est) († | NAD83 U    | TM in meters | ;)     |
|---|-------------|----------------------------|------------------|--------|------------|-------|---------|----------------------------------|------------------|-----------------|--------------------|----------------|------------|--------------|--------|
|   | WR File Nbr | Sub<br>basin Use Diversion | Owner            | County | POD Number | Grant |         | Source                           | qqq<br>64164     | Sec             | Tws F              | Rng            | • <b>X</b> | Y Dis        | stance |
|   | RA 09295    | EXP 3                      | COX JOE          | ED     | RA 09295   |       |         | Shallow                          | 434              | 13              | 195 2              | 25E 5          | 52979      | 3613115*     | 764    |
| - | RA 07864    | DOM 0                      | ) J.T. ROSS      | ED     | RA 07864   |       |         |                                  | 4                | 13              | 19S 2              | 25E 5          | 53081      | 3613417*     | 803    |
| 3 | RA 09293    | DOM 3                      | B COX JOE        | ED     | RA 09293   |       |         | Shallow                          | 344              | 13              | 19S 2              | 25E 5          | 53180      | 3613114*     | 952    |
| ч | RA 09294    | EXP 3                      | 3 COX JOE        | ED     | RA 09294   |       |         | Shallow                          | 344              | 13              | 19S 3              | 25E 5          | 53180      | 3613114*     | 952    |
| 5 | RA 10407    | DOL 0                      | ) JOAN MULLARKEY | ED     | RA 10407   |       |         | Shallow                          | 4 2              | 23              | 19S :              | 25E 5          | 51678      | 3612409*     | 1174   |
| 5 | RA 08611    | DOM 3                      | JOSEPH B HUBER   | ED     | RA 08611   |       |         | Shallow                          | 1 1 1            | 19              | 19S :              | 26E 5          | 53583      | 3612909*     | 1401   |

### Record Count: 6

### POD Search:

POD Basin: Roswell Artesian

### UTMNAD83 Radius Search (in meters):

Easting (X): 552278

Radius: 1609.4

inctus.

Sorted by: Distance

\*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.

2

Northing (Y): 3613419

# Water Analysis

2708 West County Road, Hobbs NM 88240 Phone (505) 392-5556 Fax (505) 392-7307

## Analyzed For

| Company  | We              | II Name       | Co                    | unty            | State          |
|--|-----------------|---------------|-----------------------|-----------------|----------------|
| Mewbourne                                      |                 | Lisas         | <u>ا</u>              | ea              | New Mexico     |
| Sample Source                                  | Source          |               | Sample #              |                 | 1              |
| Formation                                      |                 |               | Depth                 |                 |                |
| Specific Gravity                               | 1.000           |               | SG @ -                | 60 °F           | 1.002          |
| рH   | 7.18            |               | Su                    | lfides          | Absent         |
| Temperature (°F)                               | 70              |               | Reducing A            | gents           |                |
| Cations  |                 |               |                       |                 |                |
| Sodium (Calc)                                  |                 | in Mg/L       | 655                   | in PPM          | 654            |
| Calcium  |                 | in Mg/L       | 316                   | in PPM          | 315            |
| Magnesium                                      |                 | in Mg/L       | 48                    | in PPM          | 48             |
| Soluable Iron (FE2)                            |                 | in Mg/L       | 0.0                   | in PPM          | 0              |
| Anions   |                 |               |                       |                 |                |
| Chlorides                                      |                 | in Mg/L       | 200                   | in PPM          | 200            |
| Sulfates                                       |                 | in Mg/L       | 2,000                 | in PPM          | 1,996          |
| Bicarbonates                                   |                 | in Mg/L       | 59                    | in PPM          | .58            |
| Total Hardness (as CaCO                        |                 | in Mg/L       | 990                   | in PPM          | 988            |
| Total Dissolved Solids (Ca                     | lc)             | in Mg/L       | 3,278                 | in PPM          | 3,271          |
| Equivalent NaCl Concentra                      | ation           | in Mg/L       | 2,263                 | in PPM          | 2,258          |
| Scaling Tendencies                             |                 |               |                       |                 |                |
| *Calcium Carbonate Index                       |                 |               |                       |                 | 18,505         |
| Below 500,000                                  | Remote / 500.00 | 00 - 1,000,00 | 0 Possible / Above 1, | 000,000 Probab  | le             |
| *Calcium Sulfate (Gyp) Inde                    | ex              |               |                       |                 | 632,000        |
| Below 500.000                                  | Remote / 500,00 | 0 - 10,000.00 | 0 Possible / Above 10 | ,000,000 Probat | ale -          |
| *This Calculation is only an appr<br>treatment | oximation and i | s only valid  | before treatment of   | a well or sever | al weeks after |
|  |                 |               |                       |                 |                |

Remarks rw=5@70f

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# Water Analysis

2708 West County Road, Hobbs NM 88240 Phone (505) 392-5556 Fax (505) 392-7307

## Analyzed For

| Company  |              | Nell Name                               |                    | County              | State                     |
|--|--------------|---|--------------------|---------------------|---------------------------|
| Mewbourne  |              | Ross East                               |                    | Lea                 | New Mexico                |
| Sample Source                                    | Sour         | ce                                      | Sample #           |                     | 1                         |
| Formation  |              |   | Depth              |                     |                           |
| Specific Gravity                                 | 1.000        |   | <br>SG (           |                     | 1.002                     |
| pН   | 7.24         |   |                    | -<br>Sulfides       | Absent                    |
| Temperature (°F)                                 | 70           |   | Reducing           | Agents              |                           |
| Cations  |              |   |                    |                     |                           |
| Sodium (Calc)                                    | ,            | in Mg/L                                 | 655                | in PPM              | 654                       |
| Calcium  | т            | in Mg/L                                 | 316                | in PPM              | 315                       |
| Magnesium  |              | in Mg/L                                 | 48                 | in PPM              | 48                        |
| Soluable Iron (FE2)                              |              | in Mg/L                                 | 0.0                | ın PPM              | 0                         |
| Anions   |              | · • · • • • • • • • • • • • • • • • • • |                    |                     |                           |
| Chlorides  |              | in Mg/L                                 | 200                | in PPM              | 200                       |
| Sulfates   |              | in Mg/L                                 | 2,000              | in PPM              | 1,996                     |
| Bicarbonates                                     |              | in Mg/L                                 | 59                 | in PPM              | 58                        |
| Total Hardness (as CaCO3                         | )<br>)       | in Mg/L                                 | 990                | in PPM              | 988                       |
| Total Dissolved Solids (Cal                      | c)           | in Mg/L                                 | 3,278              | in PPM              | 3,271                     |
| Equivalent NaCl Concentra                        | tion         | in Mg/L                                 | 2,263              | in PPM              | 2,258                     |
| Scaling Tendencies                               |              |   | -                  |                     |                           |
| *Calcium Carbonate Index                         |              | · · · ·                                 | -*                 |                     | 18,505                    |
| Below 500,000 I                                  | Remote / 500 | ,000 - 1,000,00                         | 0 Possible / Above | 1,000,000 Probabl   | 9                         |
| *Calcium Sulfate (Gyp) Inde.                     | x            |   |                    |                     | 632,000                   |
| Below 500,000 F                                  | Remote / 500 | 000 - 10,000.00                         | ) Possible / Above | 10,000.000 Probab   | le                        |
| *This Calculation is only an appro<br>treatment. | ximation an  | d is only valid i                       | before treatment   | of a well or severa | l weeks aft <del>er</del> |

Remarks rw=5@70f

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# Water Analysis

Date: 22-Jan-11

2708 West County Road, Hobbs NM 88240 Phone (505) 392-5556 Fax (505) 392-7307

## Analyzed For

| Company  | v             | Vell Name       | Ċ                    | ounty              | State          |
|--|---------------|-----------------|----------------------|--------------------|----------------|
| Mewbourne  | ٩             | Ross West       |                      | Lea                | New Mexico     |
| Sample Source                                    | Sourc         | е <sup>.</sup>  | Sample #             |                    | 1.             |
| Formation  |               |                 | Depth                |                    |                |
| Specific Gravity                                 | 1.000         |                 | sc @                 | ) 60 °F            | 1.002          |
| pН   | 7.22          |                 | S                    | ulfides            | Absent         |
| Temperature (°F)                                 | 70            |                 | Reducing /           | Agents             |                |
| Cations  |               |                 |                      |                    |                |
| Sodium (Calc)                                    | -             | in Mg/L         | 670                  | in PPM             | 669            |
| Calcium  |               | in Mg/L         | 300                  | in PPM             | 299            |
| Magnesium  |               | in Mg/L         | 48                   | in PPM             | 48             |
| Soluable Iron (FE2)                              |               | in Mg/L         | 0.0                  | in PPM             | 0              |
| Anions   |               |                 | <del>.</del>         |                    |                |
| Chlorides  |               | in Mg/L         | 200                  | in PPM             | 200            |
| Sulfates   |               | in Mg/L         | 2,000                | in PPM             | 1,996          |
| Bicarbonates                                     |               | in Mg/L         | 49                   | in PPM             | 49             |
| Total Hardness (as CaCO3)                        |               | in Mg/L         | 950                  | in PPM             | 948            |
| Total Dissolved Solids (Cald                     | ;)            | in Mg/L         | 3,267                | in PPM             | 3,260          |
| Equivalent NaCl Concentral                       | tion          | in Mg/L         | 2,260                | in PPM             | 2,255          |
| Scaling Tendencies                               |               |                 |                      |                    |                |
| *Calcium Carbonate Index                         |               |                 |                      |                    | 14,640         |
| Below 500,000 /                                  | Remote / 500. | ,000 - 1,000.00 | 0 Possible / Above   | 1.000,000 Probab   | le             |
| *Calcium Sulfate (Gyp) Index                     | (             |                 |                      |                    | 600,000        |
| Below 500,000 R                                  | emote / 500,  | 000 - 10,000,00 | ) Possible / Above 1 | 0.000.000 Probal   | ble            |
| *This Calculation is only an appro<br>treatment. | ximation and  | d is only valid | before treatment o   | of a well or sever | al weeks after |

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rw=5@70f Remarks