

XI. Chemical Analysis of Fresh Water Wells

According to records from the Office of the State Engineer (Exhibit D1-8) there are 2 water wells, CP 00375 & CP 00480, within the 1 mile radius around the proposed C E LAMUNYON #77, C E LAMUNYON #74, C E LAMUNYON #75, C E LAMUNYON #71Y, C E LAMUNYON #80, and C E LAMUNYON #81. The OSE indicates there is 3 water well locations within 1 mile of C E LAMUNYON #73(CP 00375, CP 00423, & CP 00480) and 3 wells within 1 mile of the C E LAMUNYON #76 (CP 00375, CP 00480, CP 00096/00110). The CP 00480 is described as producing water from the San Andres Formation for the purpose of secondary recovery. FAE II did not attempt to get a sample. The CP 00375 & CP 00423 are considered "shallow" freshwater producers, but FAE II Operating was unable to obtain samples from them.

FAE II Operating, LLC has obtained water analyses on 2 freshwater samples. The first was from the E C HILL FEDERAL #7 (API: 30-025-10970) water supply well, also known as CP 00096/00110. This well was plugged back and perfed in the Santa Rosa Formation during 1965. This location is approximately 0.97 miles Southeast of the C E LAMUNYON #76 . The second water sample was taken about 0.4 miles Southeast of the C E LAMUNYON #76 and just to the east of a pipe yard. This sample is from a "shallow" water supply well used to water cattle. See Exhibits E1-E3.

With respect to compatibility, the source of the water to be injected will be produced water from other wells within the Project area and water transfer lines. Exhibit F contains a produced water analysis for the FAE II Operating LLC's LAMUNYON CTB. This location is about 0.27 miles Northwest from the C E LAMUNYON #80. We do not expect any water compatibility issues to arise from the proposed injection operations.

XII. Based on the available geologic and engineering data, it has been determined that there is no evidence of open faults or any other hydrologic connection between the injection zone and shallow fresh water sources.

XIII. Surface Owners are.

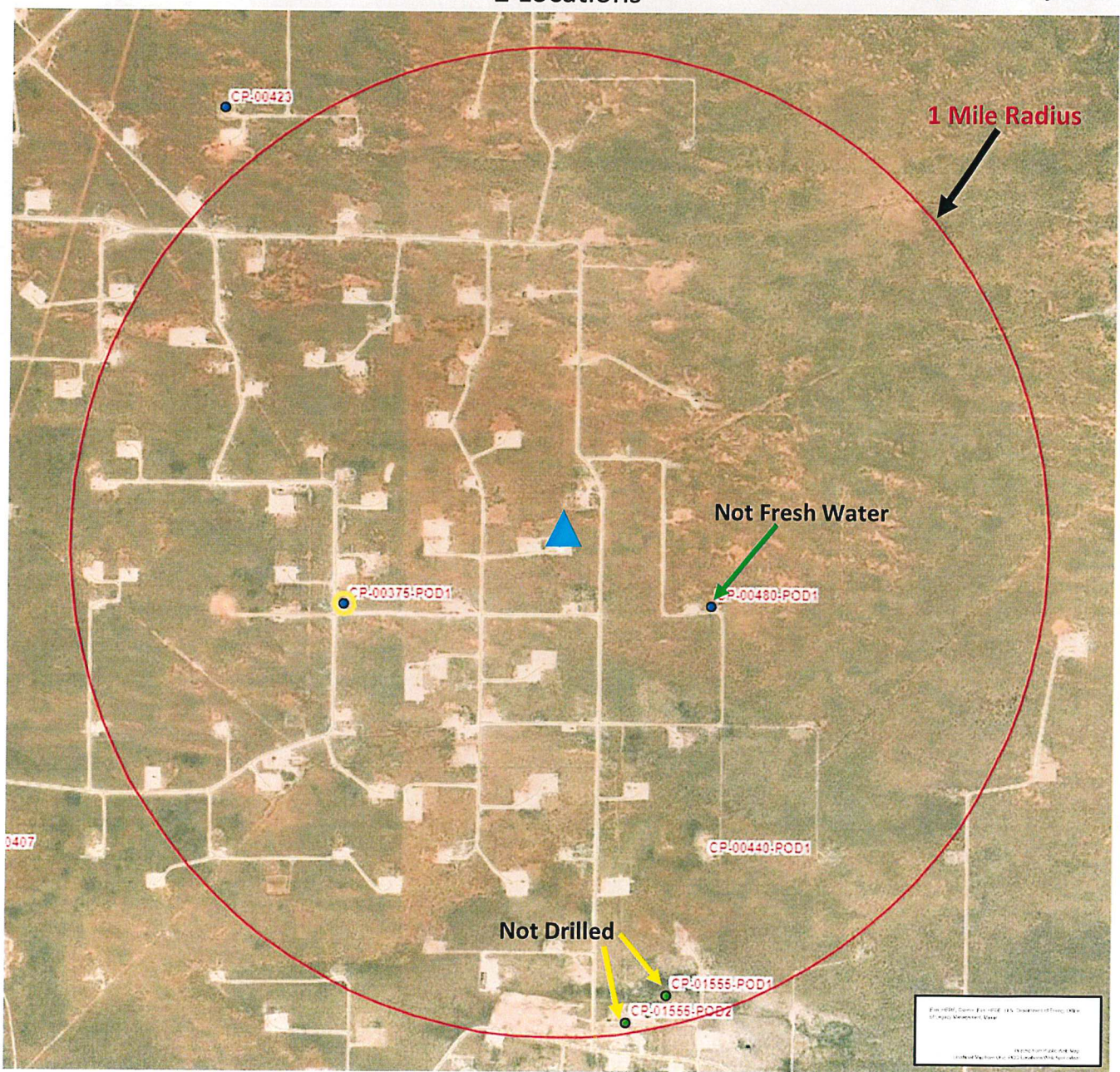
API NUMBER: 30-025-35057
Well: C E LAMUNYON #77
Location: Twn 23S Rge 37E Sec 22
Footages: 1330 FSL 1650 FWL
County: Lea

XI. Exhibit D1a

Location For Office of the State Engineer:
NAD 1983 UTM Zone 13
Easting (X): **673837.083** mtrs
Northing (Y): **3573665.982** mtrs

Water Wells Within 1 Mile Radius
** 2 Locations **

▲ C-108 Injector



API NUMBER: 30-025-35057
Well: C E LAMUNYON #77
Location: Twn 23S Rge 37E Sec 22
Footages: 1330 FSL 1650 FWL
County: Lea

XI. Exhibit D1b

Location For Office of the State Engineer:
NAD 1983 UTM Zone 13
Easting (X): **673837.083** mtrs
Northing (Y): **3573665.982** mtrs

Water Wells Within 1 Mile Radius
**** 2 Locations ****



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

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 6	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CP 00480 POD1	CP	LE		3	4	22	23S	37E		674340	3573467*	540	6281	600	5681
CP 00375 POD1	CP	LE		4	4	21	23S	37E		673133	3573448*	737	160		

Average Depth to Water: 600 feet
Minimum Depth: 600 feet
Maximum Depth: 600 feet

Record Count: 2

UTM NAD83 Radius Search (in meters):

Easting (X): 673837

Northing (Y): 3573665.982

Radius: 1609.3

*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.

1/12/22 11:05 AM

WATER COLUMN/AVERAGE DEPTH TO WATER

API NUMBER: 30-025-35059
Well: C E LAMUNYON #73
Location: Twn 23S Rge 37E Sec 22
Footages: 1510 FSL 330 FWL
County: Lea

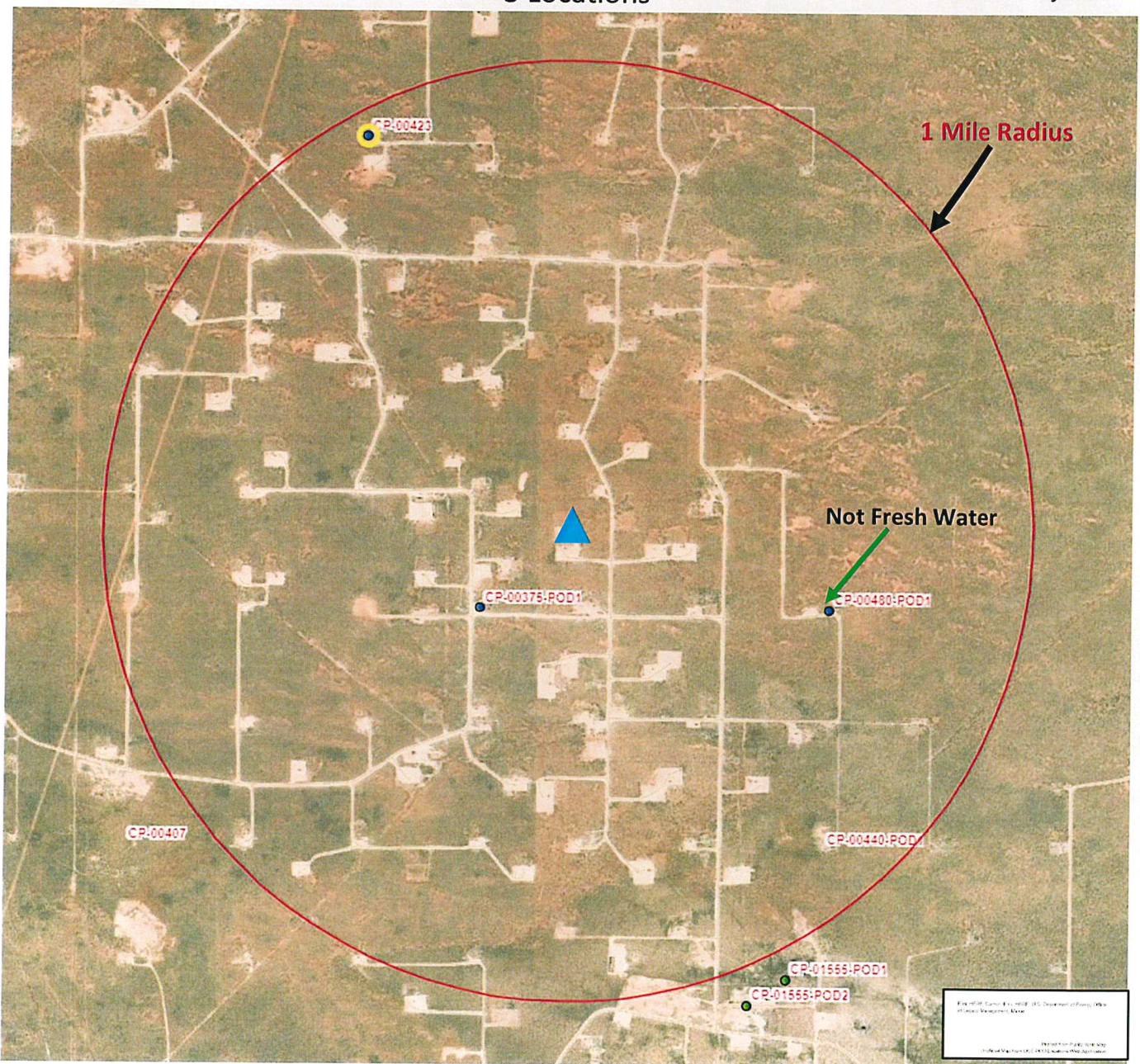
XI. Exhibit D2a

Location For Office of the State Engineer:
NAD 1983 UTM Zone 13
Easting (X): **673433.933** mtrs
Northing (Y): **3573716.743** mtrs

Water Wells Within 1 Mile Radius

**** 3 Locations ****

▲ C-108 Injector



API NUMBER: 30-025-35059
Well: C E LAMUNYON #73
Location: Twn 23S Rge 37E Sec 22
Footages: 1510 FSL 330 FWL
County: Lea

XI. Exhibit D2b

Location For Office of the State Engineer:
NAD 1983 UTM Zone 13
Easting (X): **673433.933** mtrs
Northing (Y): **3573716.743** mtrs

Water Wells Within 1 Mile Radius

**** 3 Locations ****



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

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CP.00375 POD1		CP	LE	4	4	21	23S	37E		673133	3573448*	403	160		
CP.00480 POD1		CP	LE	3	4	22	23S	37E		674340	3573467*	939	6281	600	5681
CP.00423		CP	LE	3	4	16	23S	37E		672702	3575050*	1520	175	115	60

Average Depth to Water: **357 feet**
Minimum Depth: **115 feet**
Maximum Depth: **600 feet**

Record Count: 3

UTM NAD83 Radius Search (in meters):

Easting (X): 673433.933 **Northing (Y):** 3573716.743 **Radius:** 1609.3

*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.

1/12/22 10:25 AM

WATER COLUMN/AVERAGE DEPTH TO WATER

API NUMBER: 30-025-35060
Well: C E LAMUNYON #74
Location: Twn 23S Rge 37E Sec 27
Footages: 1310 FNL 1515 FWL
County: Lea

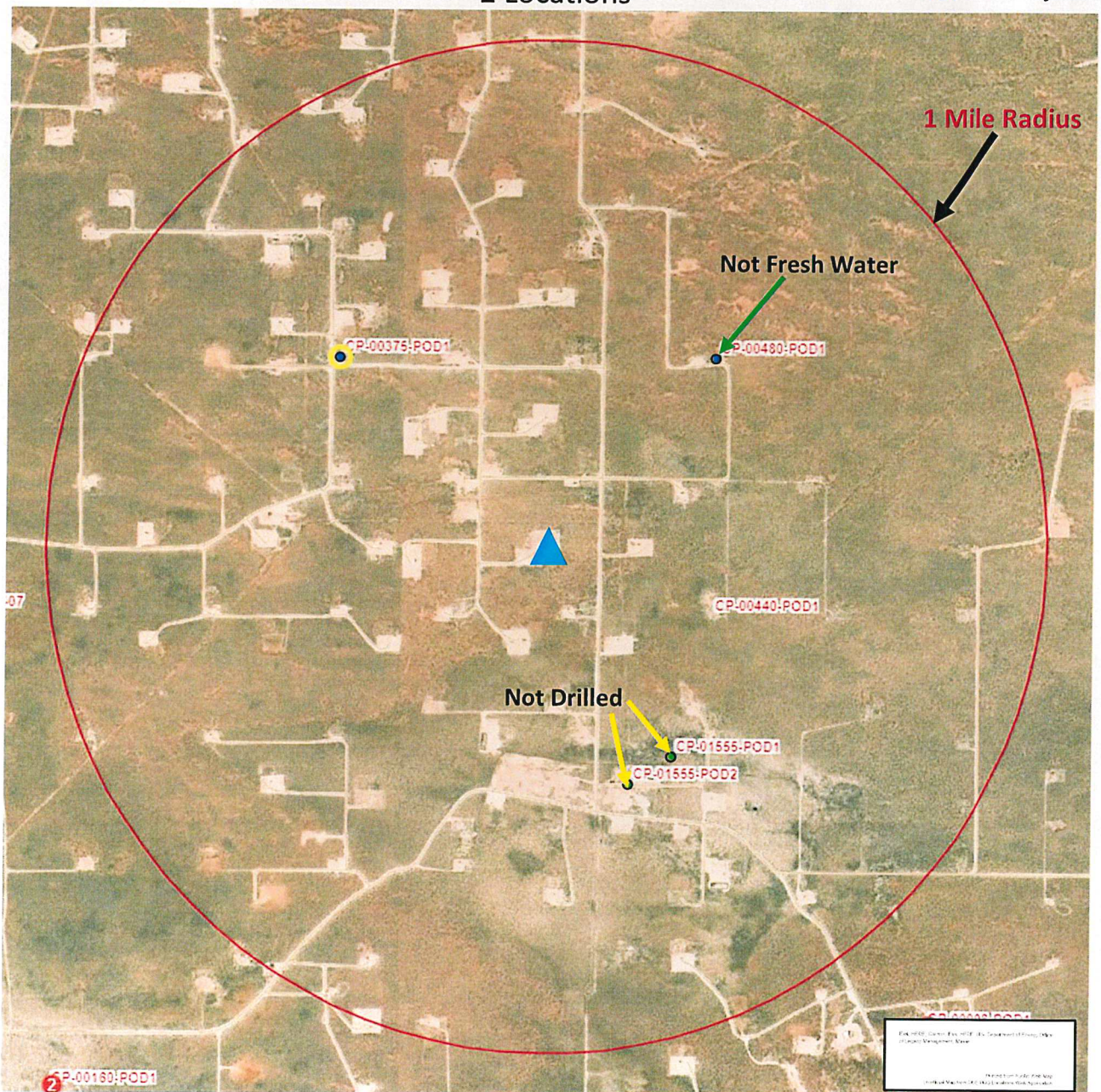
XI. Exhibit D3a

Location For Office of the State Engineer:
NAD 1983 UTM Zone 13
Easting (X): 673813.275 mtrs
Northing (Y): 3572861.506 mtrs

Water Wells Within 1 Mile Radius

**** 2 Locations ****

▲ C-108 Injector



API NUMBER: 30-025-35060
Well: C E LAMUNYON #74
Location: Twn 23S Rge 37E Sec 27
Footages: 1310 FNL 1515 FWL
County: Lea

XI. Exhibit D3b

Location For Office of the State Engineer:
NAD 1983 UTM Zone 13
Easting (X): 673813.275 mtrs
Northing (Y): 3572861.506 mtrs

Water Wells Within 1 Mile Radius

**** 2 Locations ****



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

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q	Q	Q	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CP 00480 POD1		CP	LE	3	4	22	23S	37E		674340	3573467*	802	6281	600	5681
CP 00375 POD1		CP	LE	4	4	21	23S	37E		673133	3573448*	898	160		

Average Depth to Water: 600 feet
Minimum Depth: 600 feet
Maximum Depth: 600 feet

Record Count: 2

UTM NAD83 Radius Search (in meters):

Easting (X): 673813.275

Northing (Y): 3572861.506

Radius: 1609.3

*UTM location was derived from PLSS - see Help

The data is furnished by the NM/OSE 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.

1/12/22 11:26 AM

WATER COLUMN/AVERAGE DEPTH TO WATER

API NUMBER: 30-025-35061
Well: C E LAMUNYON #75
Location: Twn 23S Rge 37E Sec 22
Footages: 10 FSL 1505 FWL
County: Lea

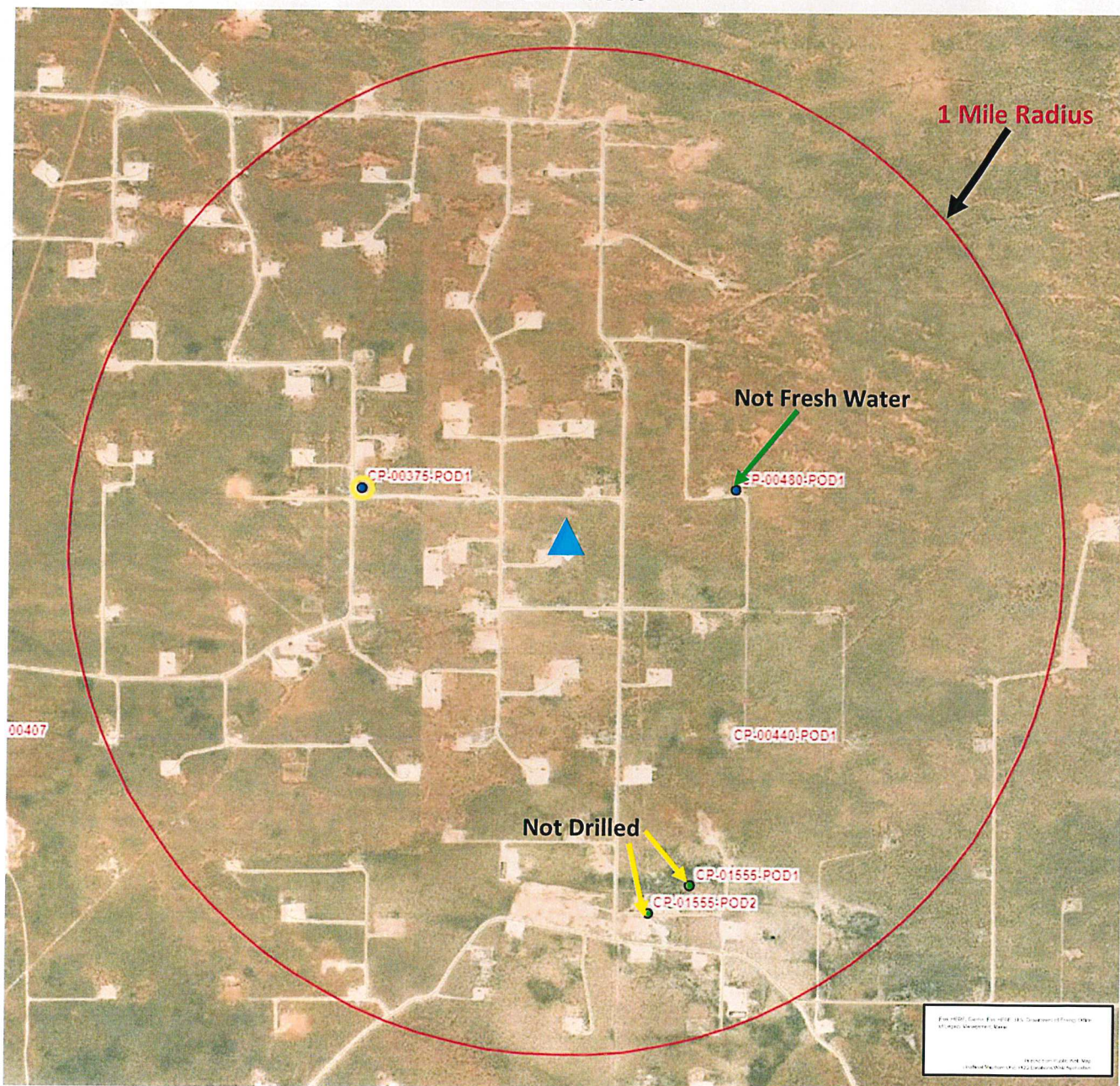
XI. Exhibit D4a

Location For Office of the State Engineer:
NAD 1983 UTM Zone 13
Easting (X): 673800.704 mtrs
Northing (Y): 3573263.867 mtrs

Water Wells Within 1 Mile Radius

**** 2 Locations ****

▲ C-108 Injector



API NUMBER: 30-025-35061
Well: C E LAMUNYON #75
Location: Twn 23S Rge 37E Sec 22
Footages: 10 FSL 1505 FWL
County: Lea

XI. Exhibit D4b

Location For Office of the State Engineer:
NAD 1983 UTM Zone 13
Easting (X): **673800.704** mtrs
Northing (Y): **3573263.867** mtrs

Water Wells Within 1 Mile Radius
**** 2 Locations ****



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

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 6	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CP 00480 POD1		CP	LE	3	4	22	23S	37E		674340	3573467*	576	6281	600	5681
CP 00375 POD1		CP	LE	4	4	21	23S	37E		673133	3573448*	692	160		

Average Depth to Water: 600 feet
Minimum Depth: 600 feet
Maximum Depth: 600 feet

Record Count: 2

UTM NAD83 Radius Search (in meters):

Easting (X): 673800.704

Northing (Y): 3573263.867

Radius: 1609.3

*UTM location was derived from PLSS - see Help

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1/12/22 11:11 AM

WATER COLUMN/AVERAGE DEPTH TO WATER

API NUMBER: 30-025-35074
Well: C E LAMUNYON #76
Location: Twn 23S Rge 37E Sec 27
Footages: 2310 FNL 2310 FWL
County: Lea

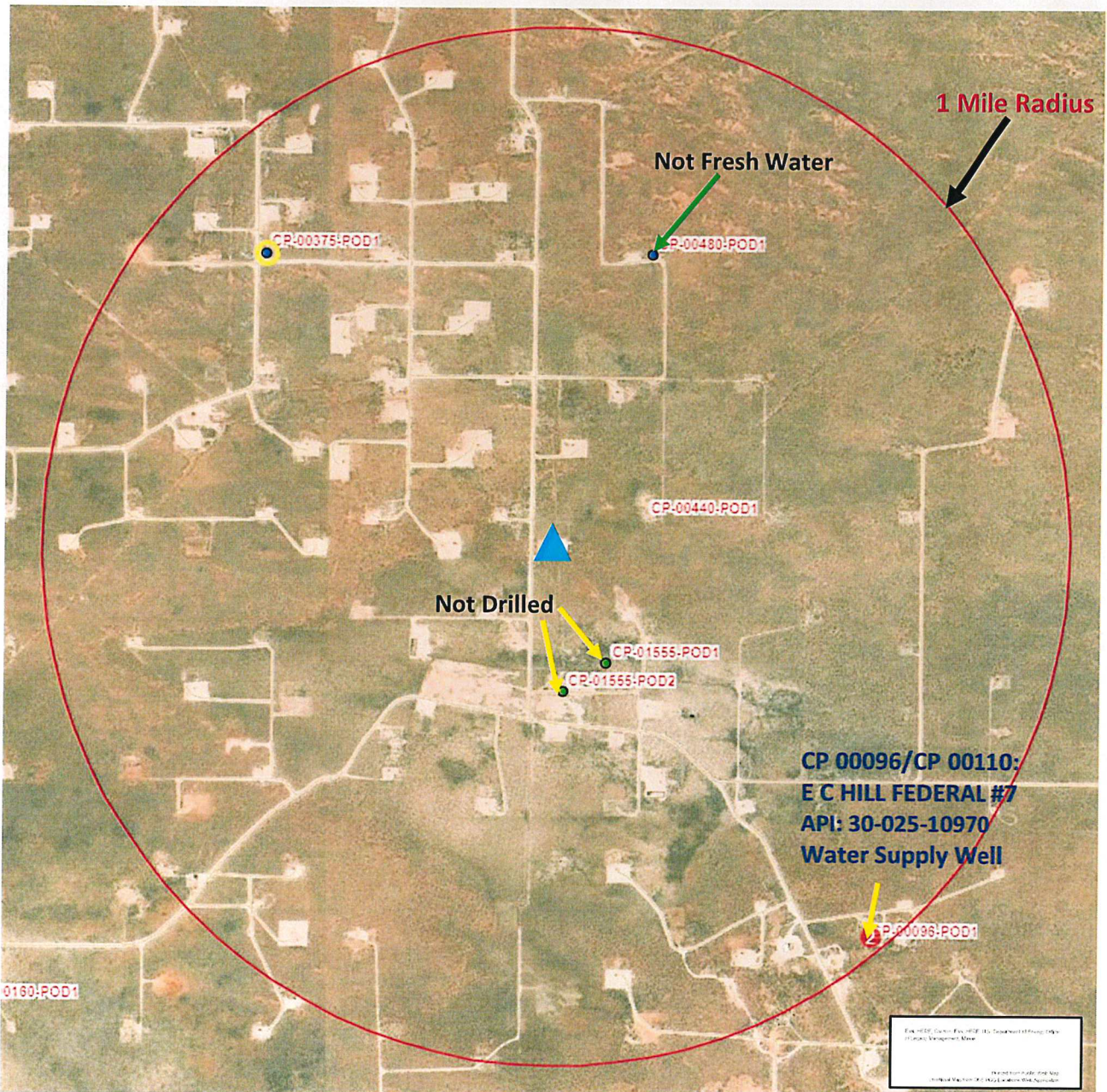
XI. Exhibit D5a

Location For Office of the State Engineer:
NAD 1983 UTM Zone 13
Easting (X): **674061.578** mtrs
Northing (Y): **3572559.682** mtrs

Water Wells Within 1 Mile Radius

**** 3 Locations ****

▲ C-108 Injector



API NUMBER: 30-025-35074
Well: C E LAMUNYON #76
Location: Twn 23S Rge 37E Sec 27
Footages: 2310 FNL 2310 FWL
County: Lea

XI. Exhibit D5b

Location For Office of the State Engineer:
NAD 1983 UTM Zone 13
Easting (X): **674061.578** mtrs
Northing (Y): **3572559.682** mtrs

Water Wells Within 1 Mile Radius

**** 3 Locations ****



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

(A CLW===== in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 6	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CP 00480 POD1		CP	LE	3	4	22	23S	37E		674340	3573467*	949	6281	600	5681
CP 00375 POD1		CP	LE	4	4	21	23S	37E		673133	3573448*	1285	160		
CP 00096 POD1		CP	LE	3	1	1	35	23S	37E	675079	3571369*	1566	13346		
CP 00110 POD1		CP	LE	3	1	1	35	23S	37E	675079	3571369*	1566	681		

Same location, AKA: E C HILL FEDERAL #7
API: 30-025-10970
Water Supply Well

Average Depth to Water: **600 feet**
Minimum Depth: **600 feet**
Maximum Depth: **600 feet**

Record Count: 4

UTM NAD83 Radius Search (in meters):

Easting (X): 674061.578

Northing (Y): 3572559.682

Radius: 1609.3

*UTM location was derived from PLSS - see Help

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1/12/22 12:36 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

API NUMBER: 30-025-35106
Well: C E LAMUNYON #71Y
Location: Twn 23S Rge 37E Sec 27
Footages: 2305 FNL 1280 FWL
County: Lea

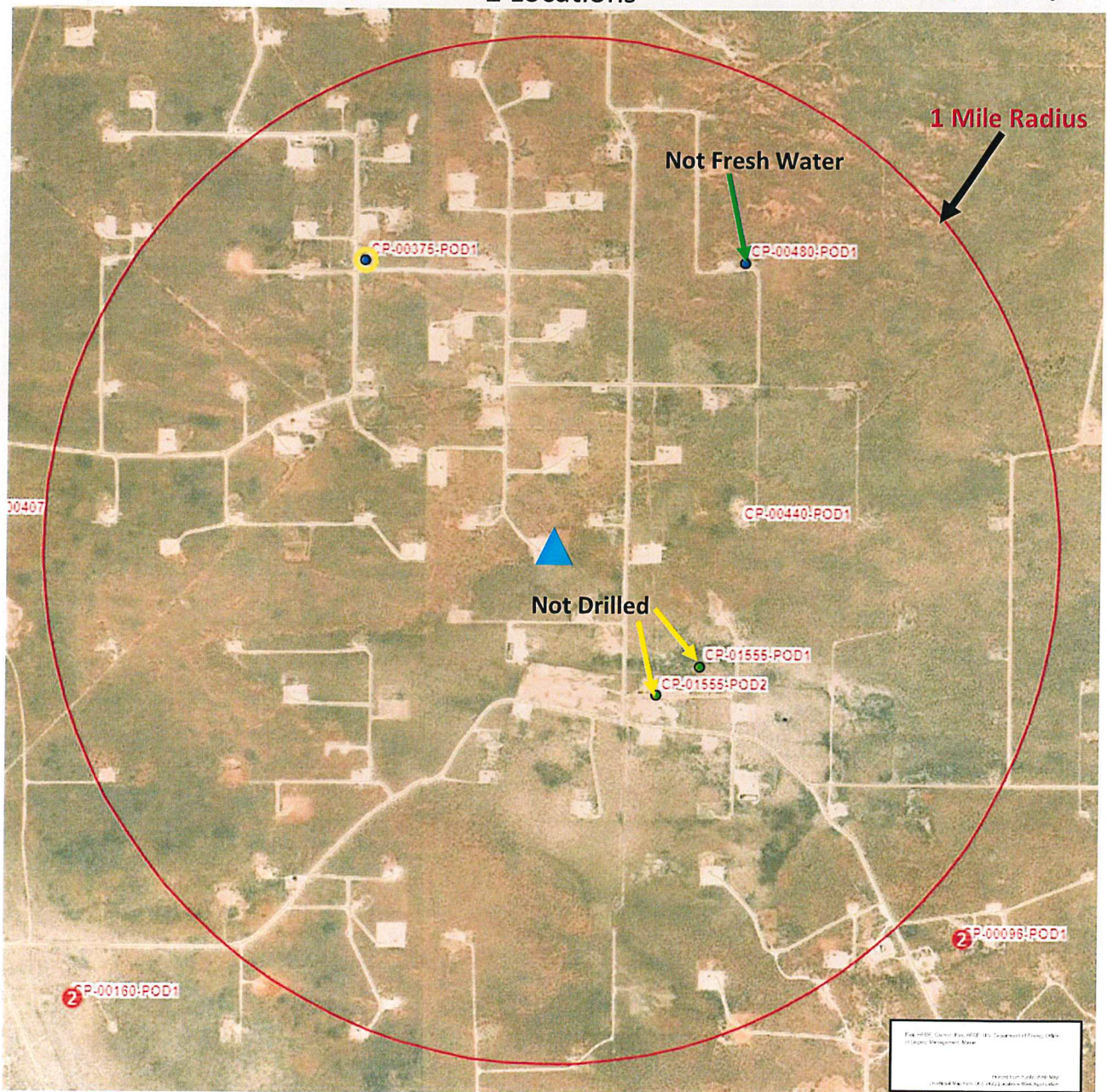
XI. Exhibit D6a

Location For Office of the State Engineer:
NAD 1983 UTM Zone 13
Easting (X): **673747.845** mtrs
Northing (Y): **3572557.628** mtrs

Water Wells Within 1 Mile Radius

**** 2 Locations ****

▲ C-108 Injector



API NUMBER: 30-025-35106
 Well: C E LAMUNYON #71Y
 Location: Twn 23S Rge 37E Sec 27
 Footages: 2305 FNL 1280 FWL
 County: Lea

XI. Exhibit D6b

Location For Office of the State Engineer:
 NAD 1983 UTM Zone 13
 Easting (X): **673747.845** mtrs
 Northing (Y): **3572557.628** mtrs

Water Wells Within 1 Mile Radius
**** 2 Locations ****



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

(A CLW#### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
 O=orphaned,
 C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
 (quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q	Q	Q	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
CP.00375 POD1	CP	LE	4	4	21	23S	37E	673133	3573448*	1082	160				
CP.00480 POD1	CP	LE	3	4	22	23S	37E	674340	3573467*	1085	6281	600	5681		

Average Depth to Water: **600 feet**
 Minimum Depth: **600 feet**
 Maximum Depth: **600 feet**

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 673747.845

Northing (Y): 3572557.628

Radius: 1609.3

*UTM location was derived from PLSS - see Help

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1/12/22 12:30 PM

WATER COLUMN/AVERAGE DEPTH TO WATER

API NUMBER: 30-025-35624
 Well: C E LAMUNYON #80
 Location: Twn 23S Rge 37E Sec 27
 Footages: 1500 FNL 150 FWL
 County: Lea

XI. Exhibit D7b

Location For Office of the State Engineer:
 NAD 1983 UTM Zone 13
 Easting (X): 673397.908 mtrs
 Northing (Y): 3572798.934 mtrs

Water Wells Within 1 Mile Radius
 ** 2 Locations **



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

(A CLW#### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
 O=orphaned,
 C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(in feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CP00375 POD1		CP	LE	4	4	21	23S	37E		673133	3573448*	701	160		
CP00480 POD1		CP	LE	3	4	22	23S	37E		674340	3573467*	1154	6281	600	5681

Average Depth to Water: 600 feet

Minimum Depth: 600 feet

Maximum Depth: 600 feet

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 673397.908

Northing (Y): 3572798.934

Radius: 1609.3

*UTM location was derived from PLSS - see Help

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1/12/22 12:00 PM

WATER COLUMN/AVERAGE DEPTH TO WATER

API NUMBER: 30-025-35932
Well: C E LAMUNYON #81
Location: Twn 23S Rge 37E Sec 27
Footages: 230 FNL 150 FWL
County: Lea

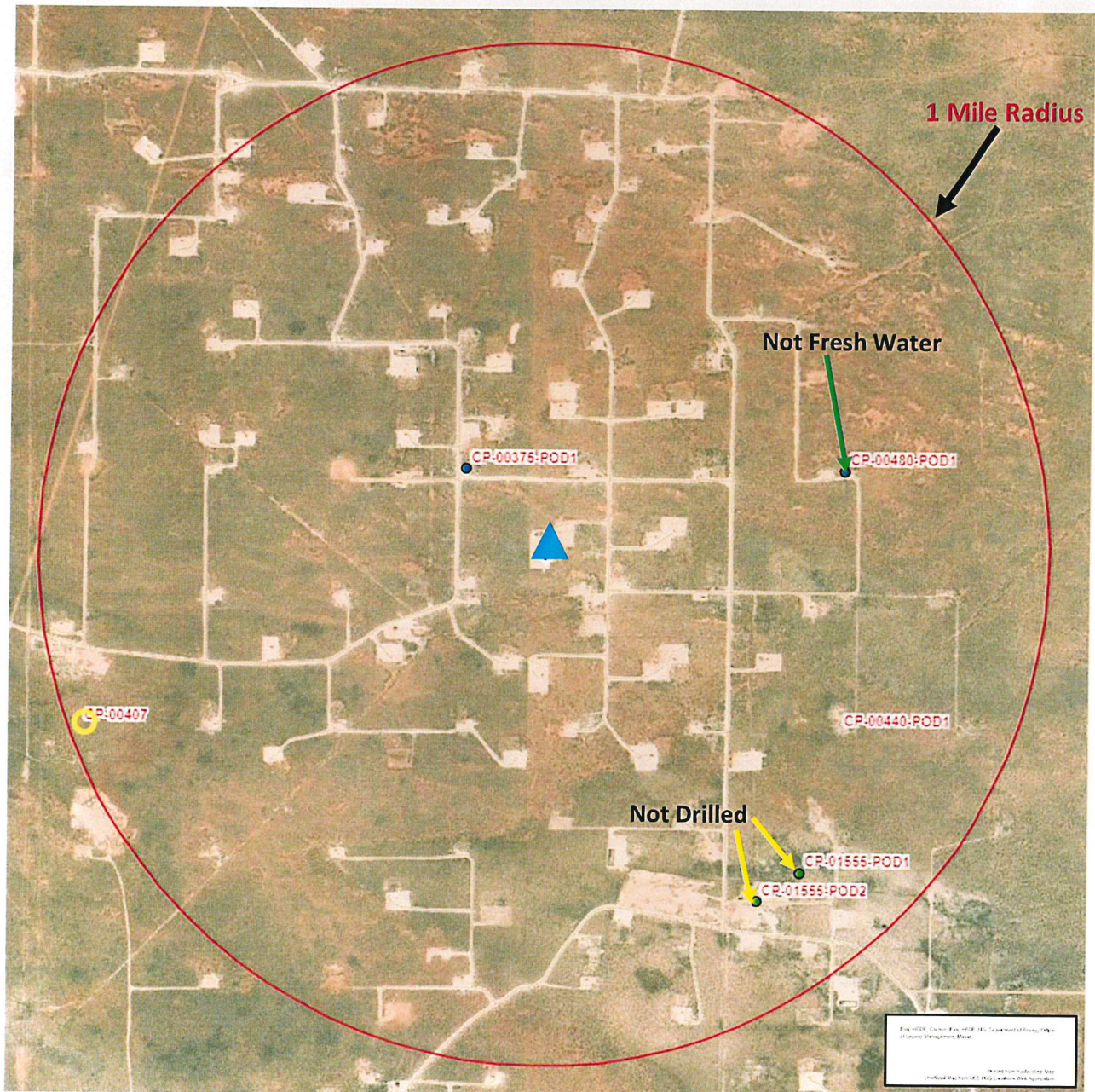
XI. Exhibit D8a

Location For Office of the State Engineer:
NAD 1983 UTM Zone 13
Easting (X): **673389.366** mtrs
Northing (Y): **3573185.837** mtrs

Water Wells Within 1 Mile Radius

**** 2 Locations ****

▲ C-108 Injector



API NUMBER: 30-025-35932
 Well: C E LAMUNYON #81
 Location: Twn 23S Rge 37E Sec 27
 Footages: 230 FNL 150 FWL
 County: Lea

XI. Exhibit D8b

Location For Office of the State Engineer:
 NAD 1983 UTM Zone 13
 Easting (X): 673389.366 mtrs
 Northing (Y): 3573185.837 mtrs

Water Wells Within 1 Mile Radius
 ** 2 Locations **



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

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
 O=orphaned,
 C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
 (quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 6	Q 4	Q 21	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CP 00375 POD1		CP	LE	4	4	21	23S	37E		673133	3573448*	366	160		
CP 00480 POD1		CP	LE	3	4	22	23S	37E		674340	3573467*	991	6281	600	5681

Average Depth to Water: 600 feet
 Minimum Depth: 600 feet
 Maximum Depth: 600 feet

Record Count: 2

UTM NAD83 Radius Search (in meters):

Easting (X): 673389.366

Northing (Y): 3573185.837

Radius: 1609.3

*UTM location was derived from PLSS - see Help

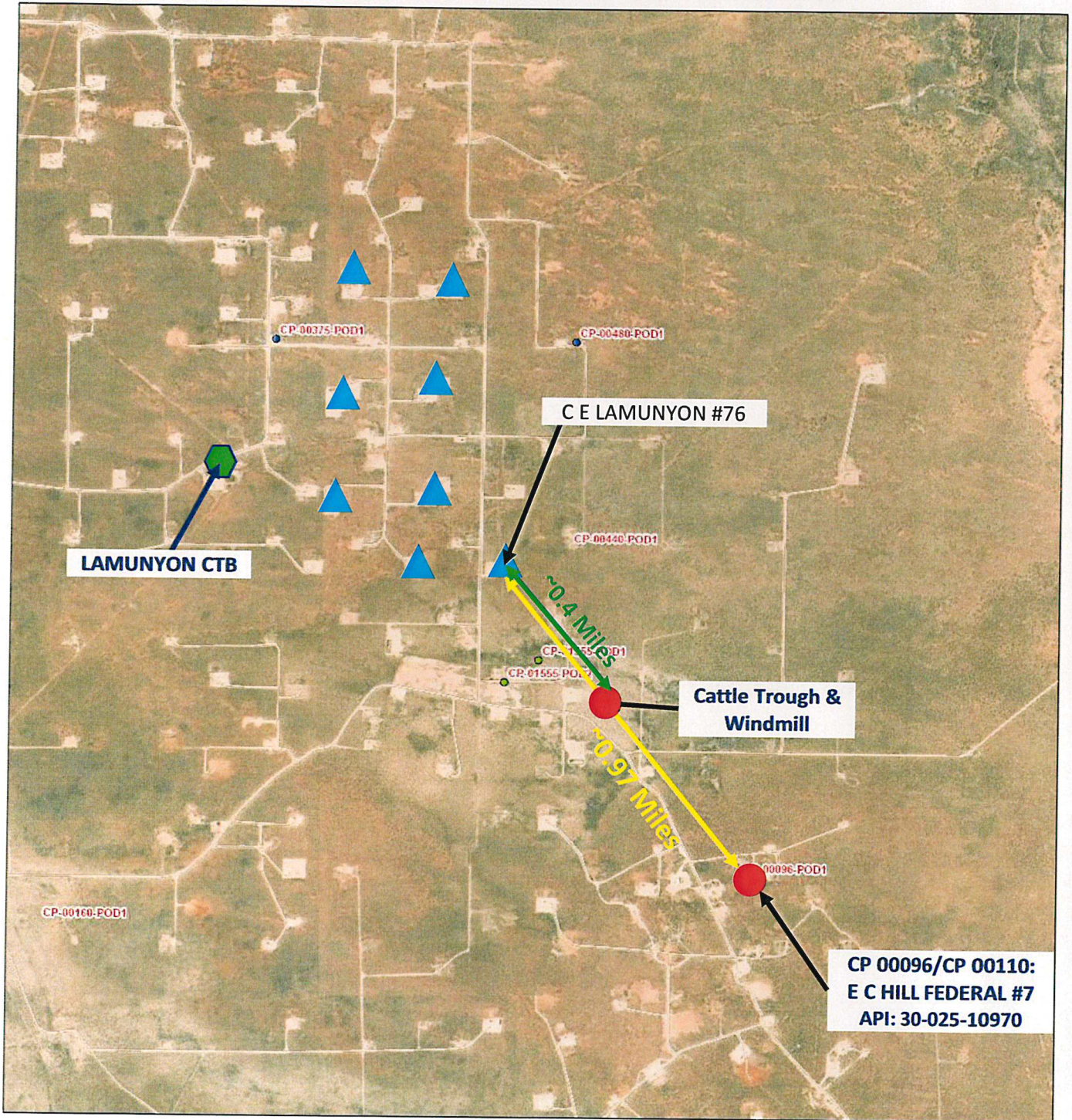
The data is furnished by the NMOSE ISC and is accepted by the recipient with the expressed understanding that the OSE ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

1/12/22 11:18 AM

WATER COLUMN/AVERAGE DEPTH TO WATER

XI. Exhibit E1

Fresh Water Wells & Sample Locations

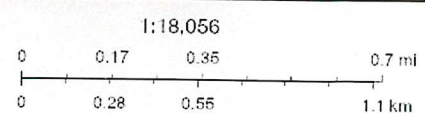


1/19/2022, 2:27:29 PM

GIS WATERS PODs

- Active
- Pending

▲ C-108 Injector



XI. Exhibit E2



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

FORTY ACRES ENERGY 11777 KATY FREEWAY STE. 305 B HOUSTON TX, 77079	Project: WATER SAMPLES Project Number: NONE GIVEN Project Manager: JAMES MARTINEZ Fax To:	Reported: 12-Jan-22 14:51
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FORTH ACRES WELL 32.26537-103.14128
 H220086-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride*	364		4.00	mg/L	1	2010711	GM	10-Jan-22	4500-C1-B	
TDS*	2450		5.00	mg/L	1	2010607	GM	12-Jan-22	160.1	

CP 00096/CP 00110:
E C HILL FEDERAL #7
API: 30-025-10970
Water Supply Well

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

XI. Exhibit E3



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Analytical Results For:

FORTY ACRES ENERGY 11777 KATY FREEWAY STE. 305 B HOUSTON TX, 77079	Project: WATER SAMPLES Project Number: NONE GIVEN Project Manager: JAMES MARTINEZ Fax To:	Reported: 12-Jan-22 14:51
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EAST OF PIPE YARD 32.27167-103.14762
H220086-02 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride*	96.0		4.00	mg/L	1	2010711	GM	10-Jan-22	4500-C1-B	
TDS*	696		5.00	mg/L	1	2010607	GM	12-Jan-22	160.1	

Cattle Trough with Windmill

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by client for analysis. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within sixty (60) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including without limitation business interruptions, loss of use or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager

XI. Exhibit F



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

FORTY ACRES ENERGY 11777 KATY FREEWAY STE. 305 B HOUSTON TX, 77079	Project: WATER SAMPLES Project Number: NONE GIVEN Project Manager: JAMES MARTINEZ Fax To:	Reported: 12-Jan-22 14:51
--	--	------------------------------

LAMUNY ON CTB 32.27994-103.16338
 H220086-04 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride*	26000		4.00	mg/L	1	2010711	GM	10-Jan-22	4500-C1-B	
TDS*	48800		5.00	mg/L	1	2010607	AC	11-Jan-22	160.1	

Lamunyon CTB Produced water analysis

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

AFFECTED PARTIES

OPERATORS

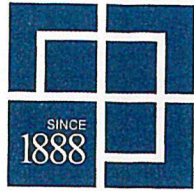
Type	ID	Name	Address
Operator	[181109]	Cameron Oil & Gas Inc.	P.O. Box 1089, Eunice, NM 88231
Operator	[16696]	OXY USA Inc	P.O. Box 4294, Houston, TX 772104294
Operator	[192463]	OXY USA WTP Limited Partnership	P.O. Box 4294, Houston, TX 772104294
Operator	[19381]	Robert H Forrest Jr Oil LLC	609 Elora Dr., Carlsbad, NM 88220
Operator	[962]	Arch Petroleum Inc	P.O. Box 10340, Midland, TX 79702
Operator	[4323]	Chevron USA Inc	6301 Deauville Blvd, Midland, TX 79706
Operator	[17891]	Pogo Producing Co	P.O. Box 10340, Midland, TX 79702
Operator	[17213]	Penroc Oil Corp	P.O. Box 2769, Hobbs, NM 88241-2769

SURFACE OWNERS

Type	ID	Name	Address
Surface Owner		D. K. Boyd	3317 Andrews Hwy., Midland, TX 79703

MINERAL OWNERS

Type	ID	Name	Address
Mineral Owner		U.S. Bureau of the Interior Bureau of Land Management Oil & Gas Division	620 E. Green St. Carlsbad, NM 88220



hinklelawfirm.com

HINKLE SHANOR LLP

ATTORNEYS AT LAW

PO BOX 2068

SANTA FE, NEW MEXICO 87504

505-982-4554 (FAX) 505-982-8623

WRITER:

Dana S. Hardy, Partner
dhardy@hinklelawfirm.com

February 8, 2022

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED

TO ALL INTERESTED PARTIES SUBJECT TO NOTICE

Re: Case No. 22593 - Application of FAE II Operating, LLC to Convert Producing Wells to Injection Wells for Waterflood Operations, Lea County, New Mexico.

To whom it may concern:

This letter is to advise you that the enclosed application was filed with the New Mexico Oil Conservation Division. The hearing will be conducted on **March 3, 2022** beginning at 8:15 a.m.

FAE II Operating, LLC ("FAE") seeks an order: (1) authorizing FAE to convert its C. E. LaMunyon Well Nos. 71Y, 73, 74, 75, 76, 77, 80, and 81 ("Wells") from producers to injectors within its C. E. LaMunyon Lease Waterflood Project ("Project") in the McKee zone of the Simpson formation located in Sections 22, 27 and 28, Township 23 South, Range 37 East, Lea County, New Mexico; and (2) authorizing FAE to convert additional wells within the Project from producers to injectors administratively. The approved Project Area consists of 320-acres of the following lands located in Township 23 South, Range 37 East in Lea County: NW/4SW/4 and S/2SW/4 of Section 22; NW/4 of Section 27; and NE/4NE/4 of Section 28. FAE proposes to convert the following wells located within the Project Area from producers to injectors within the McKee zone of the Simpson formation:

Well Name (API: 30-025-)	Location within T23S-R36E	Injection interval
C. E. LaMunyon Well No. 71Y (API 30-025-35106)	2305 FNL and 1280 FWL (Unit E) S27-T23S-R37E	9236'-9441'
C. E. LaMunyon Well No. 73 (API 30-025-35059)	1510 FSL and 330 FWL (Unit L) S22-T23S-R37E	9302'-9502'
C. E. LaMunyon Well No. 74 (API 30-025-35060)	1310 FNL and 1515 FWL (Unit C) S27-T23S-R37E	9239'-9440'
C. E. LaMunyon Well No. 75 (API 30-025-35061)	10 FSL and 1505 FWL (Unit N) S22-T23S-R37E	9255'-9460'
C. E. LaMunyon Well No. 76 (API 30-025-35074)	2310 FNL and 2310 FWL (Unit F) S27-T23S-R37E	9185'-9382'
C. E. LaMunyon Well No. 77 (API 30-025-35057)	1330 FSL and 1650 FWL (Unit K) S22-T23S-R37E	9,282'-9,486'

FAE II OPERATING, LLC
 Case No. 22593
Exhibit A-5

PO BOX 10
ROSWELL, NEW MEXICO 88202
575-622-6510
(FAX) 575-623-9332

PO BOX 2068
SANTA FE, NEW MEXICO 87504
505-982-4554
(FAX) 505-982-8623

(FAX) 505-858-8321

February 8, 2022

Page 2

Well Name (API: 30-025-)	Location within T23S-R36E	Injection interval
C. E. LaMunyon Well No. 80 (API 30-025-35624)	1500 FNL and 150 FWL (Unit E) S27-T23S-R37E	9321'-9524'
C. E. LaMunyon Well No. 81 (API 30-025-35932)	230 FNL and 150 FWL (Unit D) S27-T23S-R37E	9283'-9484'

F AE proposes to convert the Wells from producers to injectors for waterflood operations and plans to inject water through a closed system of perforations at depths of 9,185' to 9,524' within the McKee zone of the Simpson formation in the Teague-Simson Pool (Code 58900). The proposed average injection pressure through the Wells is expected to be approximately 1400 psi. The expected maximum injection pressure will be calculated relative to the depth of the highest perforation, using a factor of 0.25 psi/ft. The proposed Wells will have perforation depths between approximately 9,185' and 9,524' (or 2,296 psi and 2,381 psi maximum injection pressure, respectively). Pending results of a step rate test, the maximum injection pressure could potentially be increased to a factor of 0.6 psi/ft (or 5,511 psi at 9,185' and 5,714 psi at 9,524'). The proposed average injection rate is expected to be approximately 600 barrels of water per day. The maximum daily injection rate will be 1,500 barrels of water per day or as permitted by the Division. FAE's proposed pressure maintenance project can be conducted in a safe and responsible manner without causing waste, impairing correlative rights or endangering fresh water, public health or the environment. The Unit acreage is located approximately 20 miles south of Eunice, New Mexico.

During the COVID-19 Public Health Emergency, state buildings are closed to the public and hearings will be conducted remotely. To participate in the electronic hearing, see the instructions posted on the OCD Hearings website: <https://www.emnrd.nm.gov/ocd/hearing-info/>. You are not required to attend this hearing, but as an owner of an interest that may be affected by this application, you may appear and present testimony. Failure to appear at that time and become a party of record will preclude you from challenging the matter at a later date.

Pursuant to Division Rule 19.15.4.13.B, a party who intends to present evidence at the hearing shall file a pre-hearing statement and serve copies on other parties, or the attorneys of parties who are represented by counsel, at least four business days in advance of a scheduled hearing, but in no event later than 5:00 p.m. mountain time, on the Thursday preceding the scheduled hearing date. The statement must be filed at the Division's Santa Fe office or submitted through the OCD E-Permitting system (<https://wwwapps.emnrd.state.nm.us/ocd/ocdpermitting/>) and should include: the names of the parties and their attorneys, a concise statement of the case, the names of all witnesses the party will call to testify at the hearing, the approximate time the party will need to present its case, and identification of any procedural matters that are to be resolved prior to the hearing.

A copy of FAE's Application to Inject (Form C-108) in this matter will be provided upon request. Please do not hesitate to contact me if you have any questions about this matter.

Sincerely,

/s/ Dana S. Hardy

Dana S. Hardy

Enclosure

HINKLE SHANOR LLP

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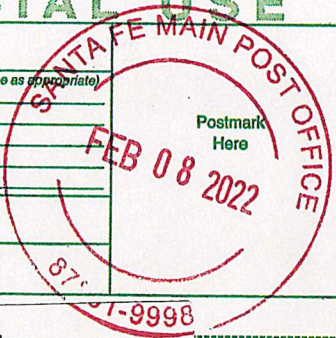
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 Midland, TX 79703

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<p>1. Article Addressed to:</p> <p>D.K. Boyd 3317 Andrews Highway Midland, TX 79703</p>	<p>3. Service Type</p> <p><input type="checkbox"/> Adult Signature <input type="checkbox"/> Priority Mail Express®</p> <p><input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail™</p> <p><input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Registered Mail Restricted Delivery</p> <p><input type="checkbox"/> Certified Mail Restricted Delivery <input checked="" type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Signature Confirmation™</p> <p><input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)</p>
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Bureau of Land Mgmt., Oil & Gas Div.
620 E. Green St.

City, State, ZIP+4® Carlsbad, NM 88220

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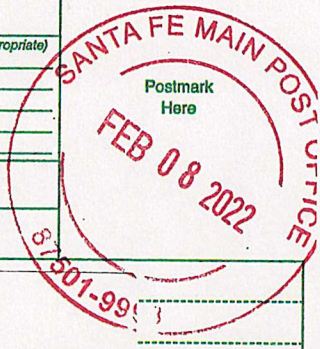
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Chevron USA Inc.
6301 Deauville Blvd.
Midland, TX 79706

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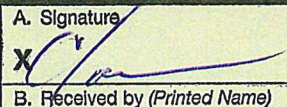
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 Robert H. Forrest, Jr. Oil LLC
 Street and A 609 Elora Dr.
 Carlsbad, NM 88220
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Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
February 11, 2022
and ending with the issue dated
February 11, 2022.



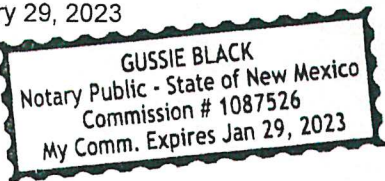
Publisher

Sworn and subscribed to before me this
11th day of February 2022.



Business Manager

My commission expires
January 29, 2023
(Seal)



This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

This is to notify all interested parties, including Cameron Oil & Gas Inc.; OXY USA Inc.; OXY USA WTP Limited Partnership, Robert H. Forrest Jr. Oil LLC; Arch Petroleum Inc.; Chevron USA Inc.; Pogo Producing Co.; Penroc Oil Corp.; D.K. Boyd; United States Bureau of the Interior, Bureau of Land Management, Oil & Gas Division; and their successors and assigns, that the New Mexico Oil Conservation Division will conduct a hearing on an application submitted by FAE II Operating, LLC (Case No. 22593). During the COVID-19 Public Health Emergency, state buildings are closed to the public and hearings will be conducted remotely. The hearing will be conducted on March 3, 2022, beginning at 8:15 a.m. To participate in the electronic hearing, see the instructions posted on the docket for the hearing date: <http://www.emnrd.state.nm.us/OCD/hearings.html>. FAE II Operating, LLC ("FAE") seeks an order: (1) authorizing FAE to convert its C. E. LaMunyon Well Nos. 71Y, 73, 74, 75, 76, 77, 80, and 81 ("Wells") from producers to injectors within its C. E. LaMunyon Lease Waterflood Project ("Project") in the McKee zone of the Simpson formation located in Sections 22, 27 and 28, Township 23 South, Range 37 East, Lea County, New Mexico; and (2) authorizing FAE to convert additional wells within the Project from producers to injectors administratively. The approved Project Area consists of 320-acres of the following lands located in Township 23 South, Range 37 East in Lea County: NW/4SW/4 and S/2SW/4 of Section 22; NW/4 of Section 27; and NE/4NE/4 of Section 28. FAE proposes to convert the following wells located within the Project Area from producers to injectors within the McKee zone of the Simpson formation:

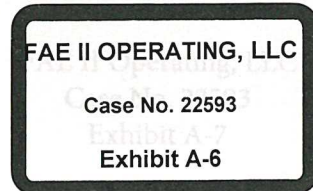
Well Name (API: 30-025-)	Location within T23S-R36E	Injection interval
C. E. LaMunyon Well No. 71Y (API 30-025-35106)	2305 FNL and 1280 FWL (Unit E) S27-T23S-R37E	9236'-9441'
C. E. LaMunyon Well No. 73 (API 30-025-35059)	1510 FSL and 330 FWL (Unit L) S22-T23S-R37E	9302'-9502'
C. E. LaMunyon Well No. 74 (API 30-025-35060)	1310 FNL and 1515 FWL (Unit C) S27-T23S-R37E	9239'-9440'
C. E. LaMunyon Well No. 75 (API 30-025-35061)	10 FSL and 1505 FWL (Unit N) S22-T23S-R37E	9255'-9460'
C. E. LaMunyon Well No. 76 (API 30-025-35074)	2310 FNL and 2310 FWL (Unit F) S27-T23S-R37E	9185'-9382'
C. E. LaMunyon Well No. 77 (API 30-025-35057)	1330 FSL and 1650 FWL (Unit K) S22-T23S-R37E	9,282'-9,486'
C. E. LaMunyon Well No. 80 (API 30-025-35624)	1500 FNL and 150 FWL (Unit E) S27-T23S-R37E	9321'-9524'
C. E. LaMunyon Well No. 81 (API 30-025-35932)	230 FNL and 150 FWL (Unit D) S27-T23S-R37E	9283'-9484'

FAE proposes to convert the Wells from producers to injectors for waterflood operations and plans to inject water through a closed system of perforations at depths of 9,185' to 9,524' within the McKee zone of the Simpson formation in the Teague-Simson Pool (Code 58900). The proposed average injection pressure through the Wells is expected to be approximately 1400 psi. The expected maximum injection pressure will be calculated relative to the depth of the highest perforation, using a factor of 0.25 psi/ft. The proposed Wells will have perforation depths between approximately 9,185' and 9,524' (or 2,296 psi and 2,381 psi maximum injection pressure, respectively). Pending results of a step rate test, the maximum injection pressure could potentially be increased to a factor of 0.6 psi/ft (or 5,511 psi at 9,185' and 5,714 psi at 9,524'). The proposed average injection rate is expected to be approximately 600 barrels of water per day. The maximum daily injection rate will be 1,500 barrels of water per day or as permitted by the Division. The Unit acreage is located approximately 20 miles south of Eunice, New Mexico.

02107475

00263685

GILBERT
HINKLE, SHANOR LLP
PO BOX 2068
SANTA FE, NM 87504



STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION

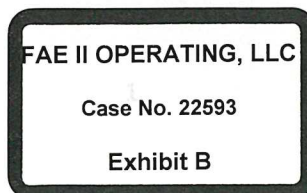
APPLICATION OF FAE II OPERATING, LLC
TO CONVERT PRODUCING WELLS TO
INJECTION WELLS FOR WATERFLOOD
OPERATIONS, LEA COUNTY, NEW MEXICO

CASE NO. 22593

SELF-AFFIRMED STATEMENT OF CHARLES HOOPER

1. I am over 18 years of age and am competent to provide this Self-Affirmed Statement. I have personal knowledge of the matters addressed herein. I am employed by FAE II Operating, LLC ("FAE") as a geologist. I am familiar with the Application in this case and with the geology matters pertaining to this Application. I have not previously testified before the New Mexico Oil Conservation Division ("Division"). A copy of my curriculum vitae is attached as **Exhibit B-1**.

2. FAE's application seeks an order: (1) authorizing FAE to convert its C. E. LaMunyon Well Nos. 71Y, 73, 74, 75, 76, 77, 80, and 81 ("Wells") from producers to injectors within its C. E. LaMunyon Lease Waterflood Project ("Project") in the McKee zone of the Simpson formation located in Sections 22, 27 and 28, Township 23 South, Range 37 East, Lea County, New Mexico; and (2) authorizing FAE to convert additional wells within the Project from producers to injectors administratively.



3. The legal locations and injection intervals of the wells (“Wells”) pertaining to this application are as follows:

Well Name (API)	Location within T23S-R36E	Injection interval
C. E. LaMunyon Well No. 71Y (API 30-025-35106)	2305 FNL and 1280 FWL (Unit E) S27-T23S-R37E	9236'-9441'
C. E. LaMunyon Well No. 73 (API 30-025-35059)	1510 FSL and 330 FWL (Unit L) S22-T23S-R37E	9302'-9502'
C. E. LaMunyon Well No. 74 (API 30-025-35060)	1310 FNL and 1515 FWL (Unit C) S27-T23S-R37E	9239'-9440'
C. E. LaMunyon Well No. 75 (API 30-025-35061)	10 FSL and 1505 FWL (Unit N) S22-T23S-R37E	9255'-9460'
C. E. LaMunyon Well No. 76 (API 30-025-35074)	2310 FNL and 2310 FWL (Unit F) S27-T23S-R37E	9185'-9382'
C. E. LaMunyon Well No. 77 (API 30-025-35057)	1330 FSL and 1650 FWL (Unit K) S22-T23S-R37E	9,282'-9,486'
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C. E. LaMunyon Well No. 81 (API 30-025-35932)	230 FNL and 150 FWL (Unit D) S27-T23S-R37E	9283'-9484'

4. The “unitized interval” was defined by Order R-3297 as the Teague-Simpson pool, which has a depth of 8,942’ MD to 9,475’ TD as shown in the C. E. LaMunyon 10 (API:30-025-10830) well log.

5. Produced water will be injected into the McKee zone of the Simpson formation found at the drilling depth interval of 8,942’ MD to 9,475’ TD as shown in the C. E. LaMunyon 10 (API:30-025-10830) well log for the purpose of increasing the ultimate recovery of oil within the interval underlying the Project area.

6. The productive zone immediately overlying the proposed injection interval is the Devonian formation with its top being at an approximate depth of 7,300’ TVD. The productive zone immediately underlying the proposed injection interval is the Ellenburger formation at an approximate depth of 9,652’ TVD.

7. **Exhibit B-2** contains a type log of the McKee zone of the Simpson formation. The proposed Project will inject produced water into the McKee Sand member of the Simpson Formation in the Teague-Simpson Pool. The injection interval consists mainly of white to tan colored and fine to coarse grained sand. The reservoir quality rocks have porosities averaging approximately 11% and permeabilities ranging from 0.1 to 400 millidarcies.

8. **Exhibit B-3** contains a structure map of the Unit. The map shows the structural contours near the top of the McKee zone of the Simpson formation. The structure is a northwest-southeast trending anticline on the Central Basin Platform.

9. **Exhibit B-4** contains a cross-section of the target injection interval within the McKee zone of the Simpson formation. The cross-section demonstrates the injection interval is consistent and continuous across the target interval underlying the Project area. The cross-section also shows all lands within the proposed unit contain porous reservoir rock. As such, all lands within the proposed unit appear capable of contributing additional secondary recovery reserves.

10. Accordingly, from geologic studies performed over this area, the unit area is well suited for secondary and tertiary recovery operations and the entire Project area should continue to contribute enhanced recovery reserves.

11. There are no faults or other geologic impediments that would impede the efficiency of the Project.

12. Based on my professional training and experience, it is my opinion that the proposed injection operations will not impair any hydrocarbon-bearing zones. It is also my opinion that injection fluids will be confined to the injection interval as a result of the stratigraphic confining layers above and below the injection zone.

13. According to records from the Office of the State Engineer found on pages 89-104 of Form C-108, there are four (4) water wells within a 1-mile radius of the Wells – CP 00480, CP 00375, CP 00423, and CP 00096/00110. The CP 00480 is described as producing water from the San Andres Formation for the purpose of secondary recovery. The CP 00375 & CP 00423 are considered “shallow” freshwater producers but FAE was unable to obtain samples from these wells.

14. Pages 105-11 of Form C-108 contains water analyses from two (2) freshwater samples within a 1-mile radius of the Wells. The first sample is taken from the E C HILL FEDERAL #7 (API: 30-025-10970) water supply well (also known as CP 00096/00110). This well was plugged back and perforated in the Santa Rosa Formation in 1965. The well location is approximately 0.97 miles Southeast of the C.E. LaMunyon #76 well. The second water sample was taken approximately 0.4 miles Southeast of the C.E. LaMunyon #76 well and to the east of a pipe yard. This sample is from a “shallow” water supply well used to water cattle.

15. With respect to compatibility, the source of the water to be injected will be produced water from other wells within the Project area and water transfer lines. Page 108 of Form C-108 contains a produced water analysis for the LaMunyon CTB approximately 0.27 miles Northwest from the C E LaMunyon #80. I do not expect any water compatibility issues to arise from the proposed injection operations.

16. I have examined the available geological and engineering data and have found no evidence of open faults or hydrological connection between the proposed McKee zone of the Simpson formation and any underground sources of drinking water.

17. The exhibits referenced above were either prepared by me or under my supervision or were compiled from company business records.

18. In my opinion, the granting of FAE's application would serve the interests of conservation, the prevention of waste, and the protection of correlative rights.

19. I understand this Self-Affirmed Statement will be used as written testimony in this case. I affirm that my testimony in paragraphs 1 through 18 above is true and correct and is made under penalty of perjury under the laws of the State of New Mexico. My testimony is made as of the date handwritten next to my signature below.



Charles Hooper

02/23/2022

Date

CHARLES J. HOOPER

FAE II OPERATING, LLC

Case No. 22593

Exhibit B-1

SENIOR GEOLOGIST

Geologist with 10 years of experience in extracting value from mature assets via highly detailed reservoir studies, reservoir simulation, waterflood design. Dual masters' degrees in business and geology provide a unique ability to incorporate technical findings with practical economics to deliver the maximum yield on assets.

WORK EXPERIENCE**Forty Acres Energy, LLC. (2019-present)**

Houston, TX

Senior Geologist

- Produce and refine large-scale reservoir studies of the New Mexico Central Basin Platform utilizing tens of thousands of wells, well logs, completions data, and well histories for potential EOR analysis and workover prospectivity.
- Generate workover opportunities for a 3-5 rig workover program by identifying bypassed and/or partially depleted pay.
- Evaluate and recommend potential waterflood/EOR projects utilizing reservoir simulation and detailed geologic studies.
- Provide and give technical review presentations for regulatory agencies, investors, and third-party reserves auditors.

Durango Resources Corp. (2012-2019)

Houston, TX

Senior Geologist & Business Development Officer (2016-present)

- Prospected a "Frostwood-style" horizontal well play and oversaw geosteering for two successful pilot wells in a mature Gulf Coast field; lateral portion of the wells were kept within a 2 ft. window of the targeted reservoir path.
- Played a primary role in identifying, evaluating, valuing, presenting, and securing a capital partner for a \$22MM conventional assets acquisition in the Delaware Basin and Central Basin Platform.
- Generated financial models for PDP valuation, field upside development valuation, and specific investor requests.
- Authored and presented investor presentations covering company highlights, financial models, reservoir characterization, upside potential, and reservoir simulation (via ReservoirGrail).
- Developed and managed a comprehensive prioritized workflow for newly acquired assets to quickly and accurately conduct large-scale reservoir studies (sourcing data, generating databases, correlating stratigraphy, mapping of individual reservoir segments, locating and quantifying current hydrocarbons in place).
- Conducted field development plans utilizing field studies and reservoir simulation to design the most economical approaches for upside exploitation, including recompletions, infill drilling, and waterflood.

Senior Geologist (2016)

- Spearheaded acquisition due diligence, including geologic interpretation audits, reservoir simulation, and upside evaluation on a pre-bid basis.
- Performed field studies in the Gulf Coast Basin and Hardeman Basin (Oklahoma) and due diligence in the Anadarko Basin, Denver Basin, East Texas, Green River Basin, Louisiana salt domes, North Texas, Permian Basin, and Powder River Basin.
- Recommend projects within the company's existing assets such as new-drills, recompletions, re-entries and waterflood/pressure maintenance programs.
- Assisted in proving projects as PDNP/PUD reserves to 3rd party reserves engineers.
- Generated waterflood EOR prospects in mature and abandoned oil fields.
- Oversaw various field operations as "company man" including wireline logging, perforations, and workovers.

Geologist (2013-2016)

- Interpreted well logs, production data, 3D seismic, and other relevant data to create regional and local geologic maps and cross-sections. Map types include fault plane, gross facies, net sand, net pay, structure, porosity, and saturation.
- Utilized reservoir simulation to identify and quantify current-oil-in-place in the company's existing assets.
- Incorporated new data to re-interpret the company's existing field/reservoir studies.

Geologist Intern (2012)

- Created an Eagle Ford asset report for a public oil company analyzing improvements in drilling and completion

techniques, production decline rates and EUR's, and gross revenue scenarios for specific time periods. The report was used as supporting documentation to recommend the sale of the asset.

- Utilized ReservoirGrail software to simulate and analyze horizontal multi-stage well depletion rates.

GrailQuest Corp. (a subsidiary of Durango Resources) (2014-2019)

Houston, TX

Geomodeling Consultant (2014-present)

- Provided consulting services using ReservoirGrail reservoir simulation software to identify, quantify, and design upside exploitation, including infill drilling, offset drilling, and/or waterflood/EOR applications.
 - Services rendered: regional and local geologic studies, review of geologic and engineering interpretations, reservoir simulation to present conditions, reservoir simulation to design and quantify future field development, real-time waterflood progress feedback, financial modeling, unit participation formulation, and assistance with 3rd party reserves documentation.
- Conducted and updated market analysis for ReservoirGrail, including strengths, weaknesses, competitors, competitive advantages, marketing tactics, promotional ideas, and pricing regimes.
- Assisted in software sales and new user training of ReservoirGrail.
- Conceptualized software enhancements and identified software maintenance needs.

DrillingInfo (2011)

Austin, TX

Energy Strategy Partners Junior Analyst

- Performed geoscience research and data analysis in unconventional plays for play-specific reports.
- Provided troubleshooting, data input, and research for a developmental geologic basin modeling software program which used domestic basins as an analog for international basins.
- Served as Administrator for operator updates and highlights in unconventional plays.

EDUCATION

University of Houston, College of Natural Sciences and Mathematics

Master of Science in Geology, GPA: 3.4, May 2015

University of Houston, C. T. Bauer College of Business

Master of Business Administration, GPA: 3.7, May 2015

University of Texas at Austin, Jackson School of Geosciences

Bachelor of Science in Geology, GPA: 3.0, December 2010

RELEVANT EXPERIENCE

AAPG Imperial Barrel Award (IBA) Competition (2015)

- Annual prospective basin evaluation competition for teams of geoscience graduate students.
- Dataset included a 3D seismic survey and various well logs in the Patchawarra Trough, Cooper Basin, Australia.
- Led the team in well log correlation, petroleum system analysis, prospect risking, prospect mapping and volumetrics, and recommended course of action.
- Contributed to the team in analysis of paleogeography, tectonic history, burial history, seismic interpretation, seismic attribute mapping, well log modeling, dry hole analysis, and analog field and basin comparisons.
- Team recommended 2 prospects in "sweet spots" and steps for further evaluation of a basin-centered gas play.

SKILLS

Software

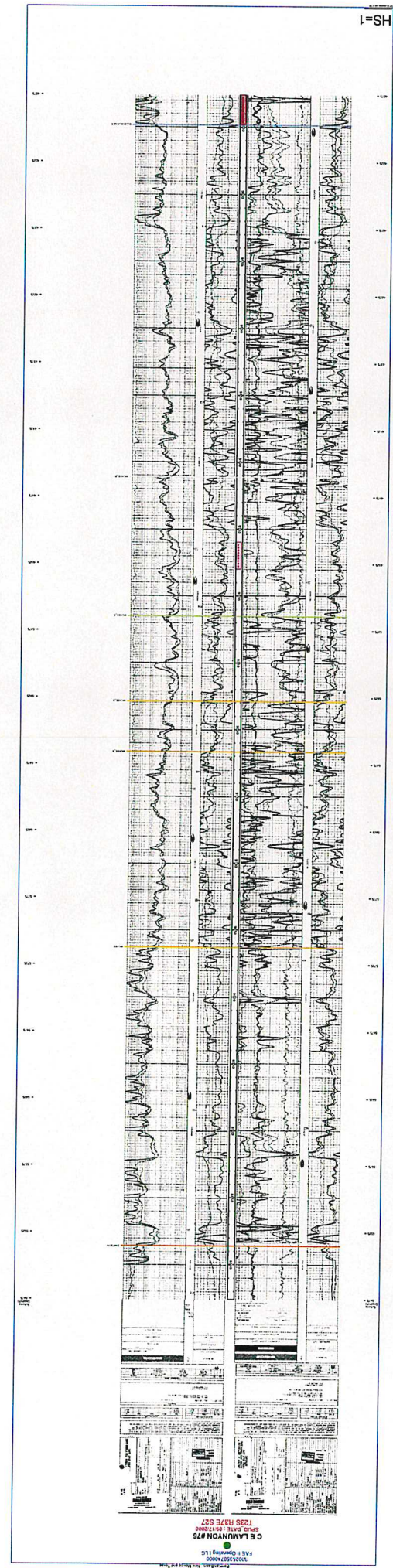
- IHS Petra
- GrailQuest ReservoirGrail
- IHS Kingdom
- Schlumberger Petrel
- Esri ArcGIS
- Golden Software Didger & Surfer
- Paint.net (graphic design)
- Microsoft Office (Access, Excel, PowerPoint, Word)

Geoscience

- Reservoir simulation
- Seismic interpretation
- Well log interpretation
- Geologic mapping
- Sedimentology and stratigraphy
- Structural interpretation
- Petroleum systems analysis

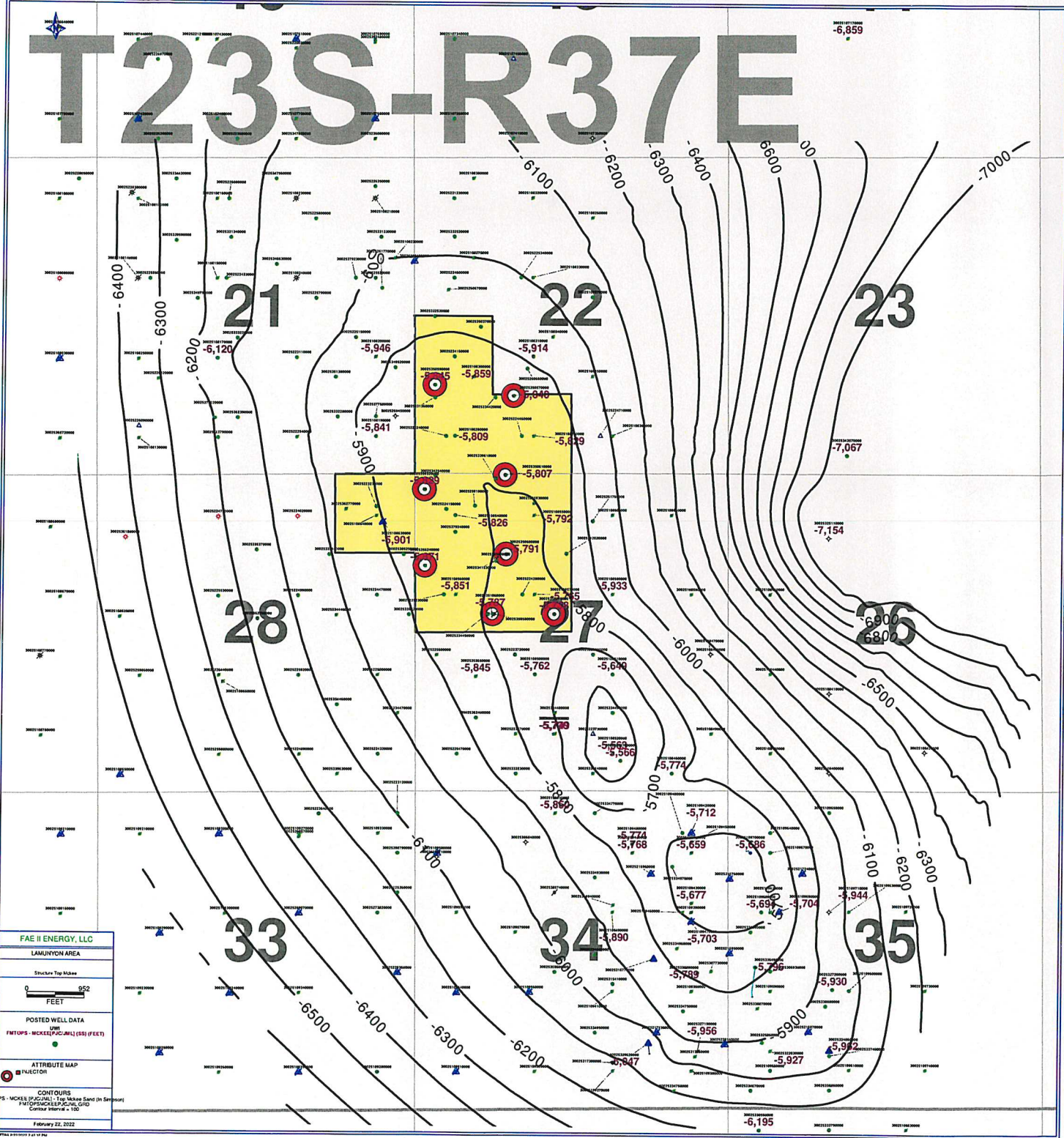
ADDITIONAL

- American Association of Petroleum Geologists (AAPG), Member, 2009-present
- Houston Geological Society, Member, 2010-present
- Society of Exploration Geophysicists, Member, 2010-present
- Coastal Conservation Association, Member, 2004-present
- Eagle Scout, Boy Scouts of America
- Phi Gamma Delta Fraternity, Philanthropy Chair, 2009



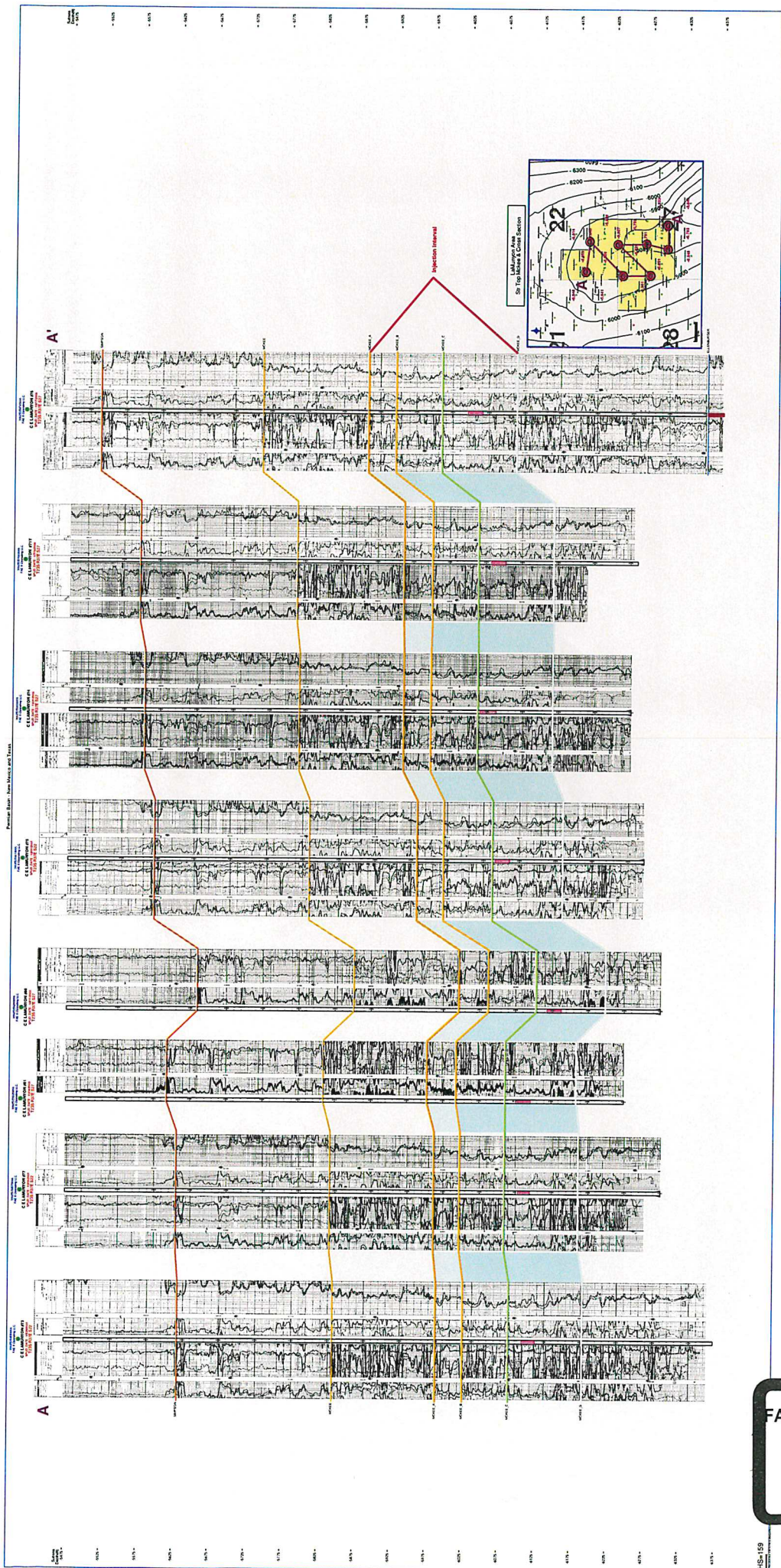
FAE II OPERATING, LLC
 Case No. 22593
 Exhibit B-2

T23S-R37E



FAE II ENERGY, LLC	
LAMUNTON AREA	
Structure Top Meters	
0	502
FEET	
POSTED WELL DATA	
FWP	
FWTOPS - MCKEE (PUCANL) (SS) (FEET)	
ATTRIBUTE MAP	
PALECTOR	
CONTOURS	
FWTOPS - MCKEE (PUCANL) - Top Mckee Sand (in Section)	
FWTOPS - MCKEE (PUCANL) - Top Mckee Sand (in Section)	
Contour Interval = 100	
February 22, 2022	

FAE II OPERATING, LLC
 Case No. 22593
 Exhibit B-3



FAE II OPERATING, LLC
 Case No. 22593
 Exhibit B-4

STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION

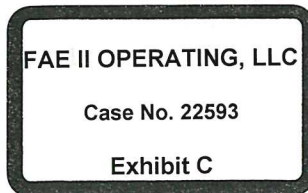
APPLICATION OF FAE II OPERATING, LLC
TO CONVERT PRODUCING WELLS TO
INJECTION WELLS FOR WATERFLOOD
OPERATIONS, LEA COUNTY, NEW MEXICO

CASE NO. 22593

SELF-AFFIRMED STATEMENT OF VANESSA NEAL

1. I am over 18 years of age and am competent to provide this Self-Affirmed Statement. I have personal knowledge of the matters addressed herein. I am the Vice President of Engineering for FAE II Operating, LLC ("FAE"). I am familiar with the Application filed by FAE in this case and with the engineering matters pertaining to this Application. I have not previously testified before the New Mexico Oil Conservation Division ("Division"). A copy of my curriculum vitae is attached as **Exhibit C-1**.

2. FAE's application seeks an order: (1) authorizing FAE to convert its C. E. LaMunyon Well Nos. 71Y, 73, 74, 75, 76, 77, 80, and 81 ("Wells") from producers to injectors within its C. E. LaMunyon Lease Waterflood Project ("Project") in the McKee zone of the Simpson formation located in Sections 22, 27 and 28, Township 23 South, Range 37 East, Lea County, New Mexico; and (2) authorizing FAE to convert additional wells within the Project from producers to injectors administratively.



3. The legal locations and injection intervals of the wells (“Wells”) pertaining to this application are as follows:

Well Name (API)	Location within T23S-R36E	Injection interval
C. E. LaMunyon Well No. 71Y (API 30-025-35106)	2305 FNL and 1280 FWL (Unit E) S27-T23S-R37E	9236'-9441'
C. E. LaMunyon Well No. 73 (API 30-025-35059)	1510 FSL and 330 FWL (Unit L) S22-T23S-R37E	9302'-9502'
C. E. LaMunyon Well No. 74 (API 30-025-35060)	1310 FNL and 1515 FWL (Unit C) S27-T23S-R37E	9239'-9440'
C. E. LaMunyon Well No. 75 (API 30-025-35061)	10 FSL and 1505 FWL (Unit N) S22-T23S-R37E	9255'-9460'
C. E. LaMunyon Well No. 76 (API 30-025-35074)	2310 FNL and 2310 FWL (Unit F) S27-T23S-R37E	9185'-9382'
C. E. LaMunyon Well No. 77 (API 30-025-35057)	1330 FSL and 1650 FWL (Unit K) S22-T23S-R37E	9,282'-9,486'
C. E. LaMunyon Well No. 80 (API 30-025-35624)	1500 FNL and 150 FWL (Unit E) S27-T23S-R37E	9321'-9524'
C. E. LaMunyon Well No. 81 (API 30-025-35932)	230 FNL and 150 FWL (Unit D) S27-T23S-R37E	9283'-9484'

4. The “unitized interval” was defined by Order R-3297 as the Teague-Simpson pool, which has a depth of 8,942’ MD to 9,475’ TD as shown in the C. E. LaMunyon 10 (API:30-025-10830) well log.

5. Produced water will be injected into the McKee zone of the Simpson formation found at the drilling depth interval of 8,942’ MD to 9,475’ TD as shown in the C. E. LaMunyon 10 (API:30-025-10830) well log for the purpose of increasing the ultimate recovery of oil within the interval underlying the Project area.

6. Specifications and wellbore schematics for the Wells are provided at pages 6-29 of Form C-108. The Wells will be adequately equipped for injection, and the construction of the Wells will protect fresh water and other hydrocarbon-bearing zones.

7. Logging and test data for the wells are provided at pages 86-87 of Form C-108.

8. The proposed average injection pressure through the Wells is expected to be approximately 1400 psi. The expected maximum injection pressure will be calculated relative to the depth of the highest perforation, using a factor of 0.25 psi/ft. The proposed Wells will have perforation depths between approximately 9,185' and 9,524' (or 2,296 psi and 2,381 psi maximum injection pressure, respectively). Pending results of a step rate test, the maximum injection pressure could potentially be increased to a factor of 0.6 psi/ft (or 5,511 psi at 9,185' and 5,714 psi at 9,524').

9. The proposed average injection rate is expected to be approximately 600 barrels of water per day. The maximum daily injection rate will be 1,500 barrels of water per day or as permitted by the Division.

10. FAE proposed to acidize the injectors with 1,000 gal 15% HCl for each set of perforations. Based on my professional training and experience, it is my professional opinion that acidizing each set of well perforations will break down well perforations and cause injection at lower pressures to maximize injection rates. The injectors will not be sand frac'd to allow for better vertical conformance.

11. **Exhibit C-2** depicts the rate at which production has declined within the Project from approximately 150 bopd after initial waterflood implementation in the late 1960s to approximately 20 bopd at present. Based on my professional training and experience, it is my opinion that production will decline even further from the current level of approximately 20 bopd in the absence of additional injection wells.

12. **Exhibit C-3** contains an Incremental Production and Economic Summary of the Project. The exhibit shows an economic comparison of continuing operations under current conditions with no additional injection support as opposed to increasing secondary recovery operations in the Wells within the Project. It is my opinion that commencing injection operations

within the Wells would result in an incremental Estimated Ultimate Recovery (EUR) increase of approximately 2.448 MMbbl of oil.

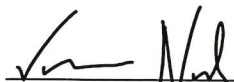
13. It is my opinion that injection operations within the Project are economically and technically feasible and that it is prudent to utilize secondary recovery operations to maximize oil recovery. It is also my opinion that the proposed conversion of the Wells from producers to injectors for waterflood operations is not premature.

14. FAE will run an MIT test prior to commencing injection and will monitor pressure during injection.

15. The exhibits referenced above were either prepared by me or under my supervision or were compiled from company business records.

16. In my opinion, the granting of FAE's application would serve the interests of conservation, the prevention of waste, and the protection of correlative rights.

17. I understand this Self-Affirmed Statement will be used as written testimony in this case. I affirm that my testimony in paragraphs 1 through 16 above is true and correct and is made under penalty of perjury under the laws of the State of New Mexico. My testimony is made as of the date handwritten next to my signature below.



Vanessa Neal

02/23/2022

Date

VANESSA GLASS NEAL

(979) 255-3476 | Houston, TX | vanessa@faenergyus.com

SENIOR RESERVOIR ENGINEER

MBA educated, PMP certified, Reservoir Engineer with over 15 years of experience adding value through field evaluation and asset management. Passionate about analysis, data integrity and improved and enhanced oil recovery (IOR/EOR). Expertise in field development, well surveillance, reservoir simulation and leading interdisciplinary high-performance teams. Focused on team success using innovation, respect and communication to support others.

WORK EXPERIENCE**FAE II Operating LLC** Houston, TX*Senior Reservoir Engineer*

2020-present

- Evaluate waterflood potential across operated acreage using multiple methods including reservoir analysis, analog waterflood studies, and reservoir modeling and simulation. Optimize planned development based on economics of utilizing existing wellbores and recovery expected from various pattern developments.
- Maintain and manage reserves database of approximately 1,000 wells. Provide decline curve analysis (DCA) and economic evaluation of active wells and proposed projects.

Sethlans Energy LLC Houston/San Antonio, TX*Founder | Senior Reservoir Engineering Consultant*

2020-2020

- Collaborated with a multi-disciplinary team of 10 professional consultants to value international assets in a \$800m - \$1.4B acquisition.
- Evaluated remaining waterflood potential in multiple fields utilizing surveillance plots. Identified over 45 drilling locations with 9.6 MMBO reserves.
- Performed decline curve analysis in PHDWin on 265 wells, forecasting reserves to economic limit.
- Advised client management of acquisition value based on team analysis of data in virtual data room.

Apache Corporation Houston/Midland/San Antonio, TX*Reservoir Engineer III – North America Unconventional Resources (NAUR)*

2018-2020

- Optimized horizontal well development by altering well spacing, wellbore orientation and completion design. Reduced development costs up to 50%, minimized offset frac hits, hit well recovery time reduced from 4 months to 2 weeks, and increased reserves up to 43% per well.
- Generated type-curves for Delaware Basin exploration in unconventional shale gas plays with high-yield condensate. Updated area type-curves for economic assessment of inventory well locations.
- Completed valuation of offsetting Delaware Basin acreage for proposed land deals. Analyzed public data of surrounding acreage to estimate initial rates, reserves, and development costs.
- Modeled horizontal wells in Harmony and CMG. Used rate-transient analysis (RTA) to determine minimum drainage areas of hydraulically fraced wells. Anchored decline curve analysis (DCA) to simulated forecasts. Evaluated economics in ARIES and ran sensitivities with planning group.
- Led asset teams to increase internal communication and cooperation. Broke down silo walls and united multi-disciplinary team in development plans and recommendations.

Reservoir Engineer II & III – Improved Recovery

2012-2018

- Recommended development scenarios totaling 82.5 MMBO incremental reserves across 49 field studies. Presented studies to asset teams and cooperated to implement recommendations.
- Modeled fields to optimize mature and develop immature waterfloods. Evaluated historical performance and proposed field (re)development scenarios in Egypt, North Sea, Permian Basin (Midland & Central Basin Platform), Anadarko Basin, and the Gulf of Mexico (GOM) Shelf.
- Studied the effects of longitudinal and transverse hydraulic fractures on a horizontal producer in an Egyptian waterflooded field. Utilized Eclipse to determine optimum location for supporting injectors.
- Mentored rotating engineers/interns in modeling software, waterflood evaluation, and field development.

- Managed Apache’s 2018 Summer Field Engineering Intern Program for 16 petroleum engineers. Piloted office engineering mentor program and made return offer recommendations.
- Supported 2014-2017 Summer Engineering Intern Programs. Utilized Excel/VBA to streamline ranking process, reducing manager selection meetings length from 6+ to 2 hours.

Reservoir Engineer I – Development Program 2010-2012

- Performed lookback on infill drilling program in Permian waterflood field to determine reason(s) for economic failure. Executed projects with 287 MBO incremental reserves.
- Planned development of Midland Basin field to maximize economic potential based on reservoir drainage and permeability trends. Gained approval to drill five locations and upgrade facilities, total EUR 400 MBO, 2.1 BCF and 350 MBNGL.
- Utilized ARIES to perform economic evaluation on workover (WO) and recompletion (RC) projects. Booked increased net reserves per SEC standards. Forecasted base line production using decline curve analysis (DCA) for annual budget planning.
- Evaluated economics of GOM Deepwater prospect on open acreage and recommended bid for upcoming lease sale. Apache won and was awarded block.

Mariner Energy, Inc. Houston, TX

Associate Production Engineer 2007-2010

- Supervised production of multiple offshore fields on the Eastern GOM Shelf. Identified severe paraffin issues and implemented routine well and pipeline maintenance programs which resulted in 200 BOPD increased production and 2,000 BWIPD increased salt-water disposal (SWD) capacity.
- Evaluated behind pipe potential within a multi-disciplinary asset team to identify RCs, WOs and LOE projects. Wrote procedures, AFEs, and proposed WOs and RCs to increase production 300 BOPD.

Baker Hughes INTEQ Broussard, LA

MWD Operator III 2006-2007

- Monitored downhole conditions using various LWD/MWD tools. Prioritized safety while in the field. Installed surface equipment. Delivered real-time directional and logging data to clients.
- Developed battery power calculator in MS Excel for MWD tool to optimize drilling time, reduce premature tripping and prevent data loss.

EDUCATION AND TRAINING

University of Houston, C.T. Bauer College of Business Houston, Tx 2016-2018

MBA, Certificates in Leadership Development, Global Management, and Human Resource Management.

Texas A&M University College Station, TX 2002-2006

Bachelor of Science in Petroleum Engineering

TECHNICAL SKILLS

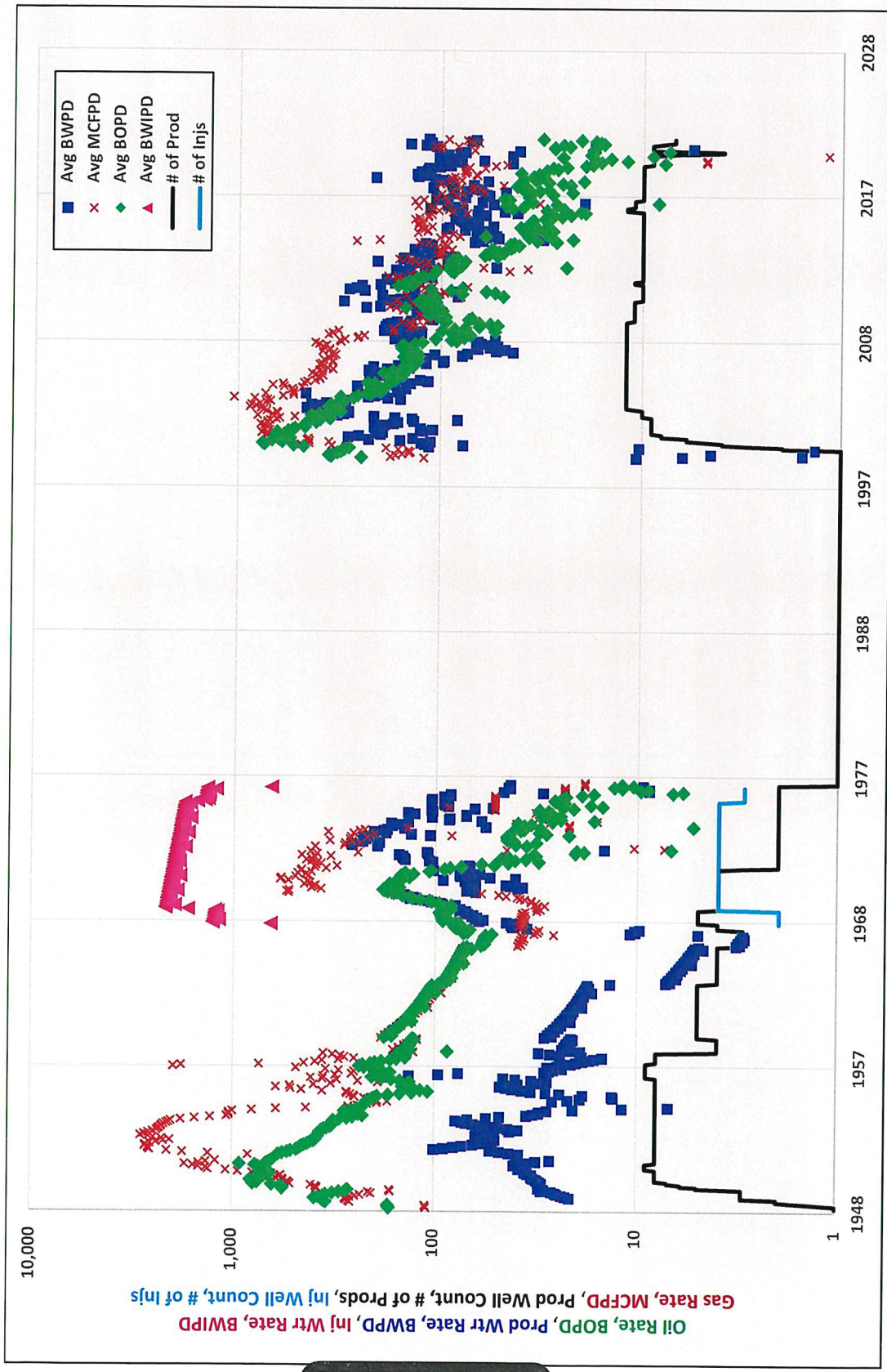
- | | |
|-----------------------------------|---|
| ▪ Harmony (Fekete) | ▪ Reservoir Grail (Waterflood Modeling) |
| ▪ Petrel RE/Eclipse | ▪ 3DSL Streamline Surveillance |
| ▪ CMG Suite | ▪ MBAL (Material Balance) |
| ▪ ARIES & PHDWin | ▪ OFM |
| ▪ MS Office Suite (including VBA) | ▪ Python |

PROFESSIONAL MEMBERSHIPS AND AWARDS

- 2021 InSite EEGS Suez University Student Chapter Magazine (vol 2): Improving Waterflood Efficiency by Understanding Pressure Boundaries and Balancing Patterns
- 2020 SPE Beirut Section Webinar: Basic Concepts on Waterflooding
- 2020 SPE The Way Ahead Published Article: The Role of Surveillance Plots in Diagnosing Waterfloods
- 2014 Presenter at Apache’s Technical Forum (ATF): The Effects of Longitudinal and Transverse Hydraulic Fractures on Horizontal Wells in a Waterflood Setting

Exhibit C-2

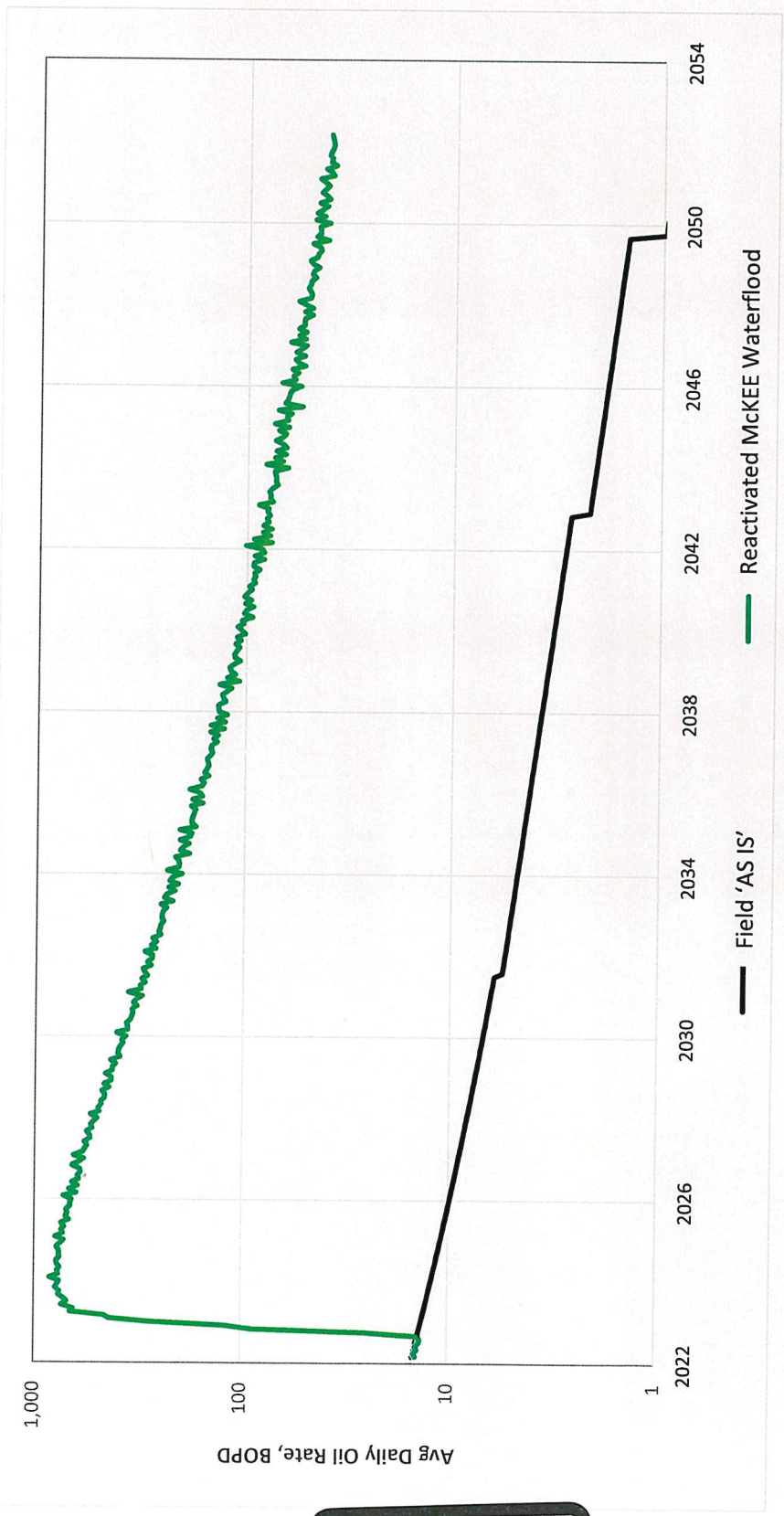
Historical Production from McKEE formation within Project Area



FAE II OPERATING, LLC
 Case No. 22593
 Exhibit C-2

Exhibit C-3

Incremental Production & Economic Comparison of Reactivated McKEE Waterflood vs Field 'AS IS'



FAE II OPERATING, LLC
 Case No. 22593
 Exhibit C-3

	NPV-10 (Including Capital)	Gross Oil Reserves
Field 'AS IS'	\$3.3 million	0.109 million bo
Reactivate McKEE Waterflood	\$63.2 million	2.557 million bo
Incremental (Delta) = Benefit of Waterflood	\$59.9 million	2.448 million bo