

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION  
 - Engineering Bureau -  
 1220 South St. Francis Drive, Santa Fe, NM 87505



Parallel Petroleum  
 Swale 1526-16 St #2  
 200723

**ADMINISTRATIVE APPLICATION CHECKLIST**

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

**Application Acronyms:**

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
- [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
- [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
- [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
- [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
- [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

- [1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]
- [A] Location - Spacing Unit - Simultaneous Dedication  
 NSL  NSP  SD
- Check One Only for [B] or [C]
- [B] Commingling - Storage - Measurement  
 DHC  CTB  PLC  PC  OLS  OLM
- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
 WFX  PMX  SWD  IPI  EOR  PPR
- [D] Other: Specify \_\_\_\_\_

- [2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or  Does Not Apply
- [A]  Working, Royalty or Overriding Royalty Interest Owners
- [B]  Offset Operators, Leaseholders or Surface Owner
- [C]  Application is One Which Requires Published Legal Notice
- [D]  Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E]  For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F]  Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

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

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

*[Handwritten Signature]*

Print or Type Name

Signature

**Kellahin & Kellahin  
 Attorneys At Law**

Title

Date

8/17/07

706 Gonzales Rd.  
 Santa Fe, NM 87501

TKellahin@co.nm.gov

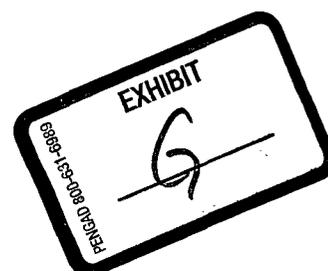
Address

# Northwest Shelf Stratigraphic Chart

| Age                          |                 | Unit Name   | HC's         | Approx. Depth                |     |
|------------------------------|-----------------|-------------|--------------|------------------------------|-----|
| Permian<br>289-248 MYA       | Ochoan          | Rustler     |              | Top Reservoir<br>~5000-5500' |     |
|                              |                 | Salado      |              |                              |     |
|                              | Guadalupian     | Tansill     |              |                              |     |
|                              |                 | Eumont      | Yates        |                              | ● ☀ |
|                              |                 |             | Seven Rivers |                              | ● ☀ |
|                              |                 |             | Queen        |                              | ● ☀ |
|                              |                 |             | Grayburg     |                              | ● ☀ |
|                              |                 | San Andres  | ●            |                              |     |
|                              |                 | Glorieta    | ●            |                              |     |
|                              | Leonardian      | Yeso        | ● ☀          |                              |     |
|                              |                 | Abo         | ● ☀          |                              |     |
| Wolfcampian                  | <b>Wolfcamp</b> | ● ☀         |              |                              |     |
| Pennsylvanian<br>289-320 MYA |                 | Cisco       |              |                              |     |
|                              |                 | Canyon      |              |                              |     |
|                              |                 | Strawn      | ● ☀          |                              |     |
|                              |                 | Atoka       | ☀            |                              |     |
|                              |                 | Morrow      | ● ☀          |                              |     |
| Mississippian<br>320-363 MYA |                 | Miss. Lime  | ● ☀          |                              |     |
|                              |                 | Woodford    |              |                              |     |
| Devonian<br>409-363 MYA      |                 | Devonian    | ☀            |                              |     |
| Silurian<br>439-409 MYA      |                 | U. Silurian |              |                              |     |
|                              |                 | Fusselman   | ●            |                              |     |
| Ordovician<br>510-439 MYA    |                 | Montoya     | ●            |                              |     |
|                              | Simpson         | McKee       | ● ☀          |                              |     |
|                              |                 | Waddell     |              |                              |     |
|                              |                 | Connell     |              |                              |     |
|                              |                 | Joins       |              |                              |     |
|                              |                 | Ellenburger | ☀            |                              |     |
| Cambrian<br>510-570 MYA      |                 |             |              |                              |     |
| Pre-Cambrian<br>>570 MYA     |                 |             |              |                              |     |

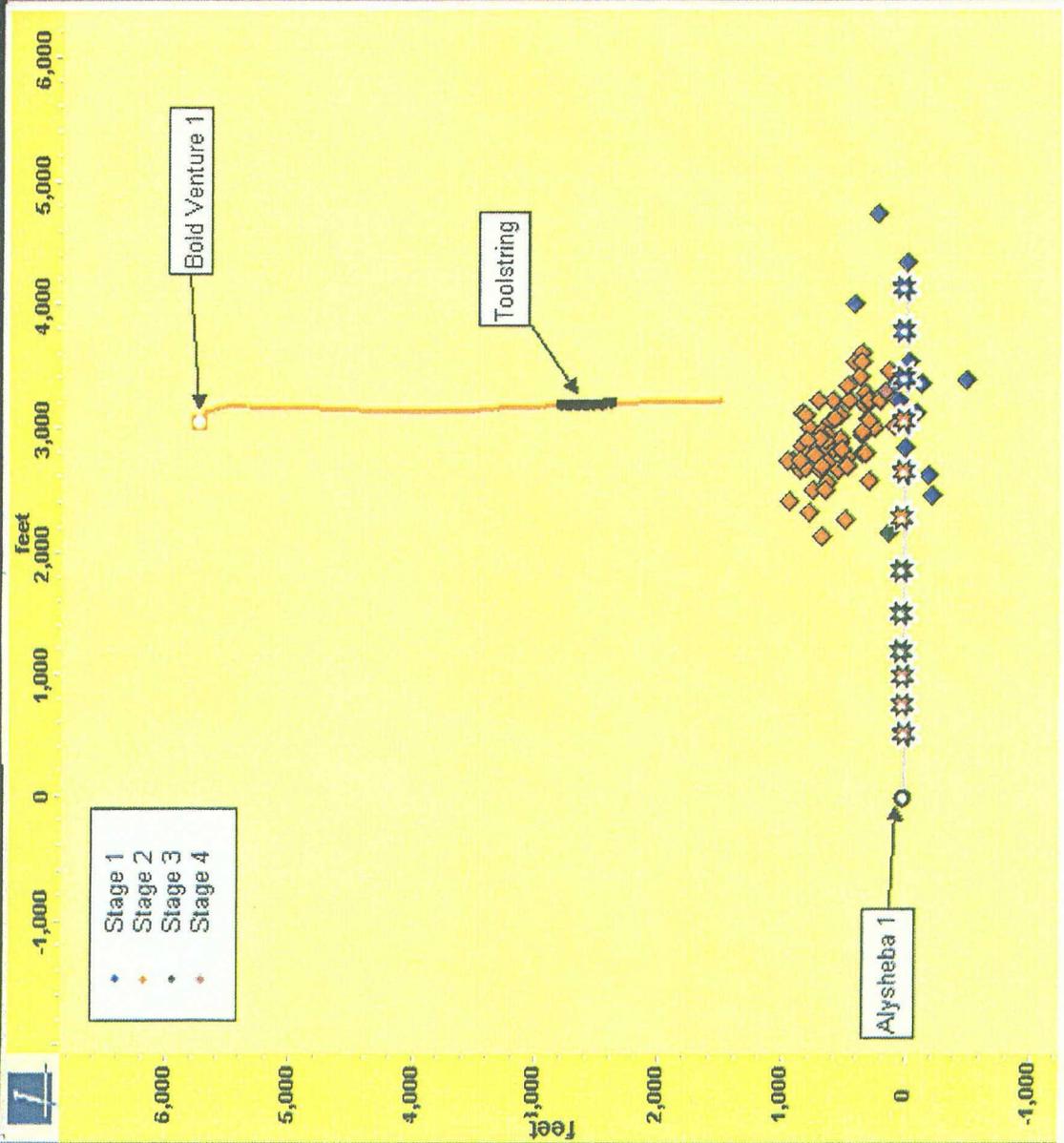
## LEGEND

-  Current Active Plays
-  Oil Producing Zones
-  Gas Producing Zones





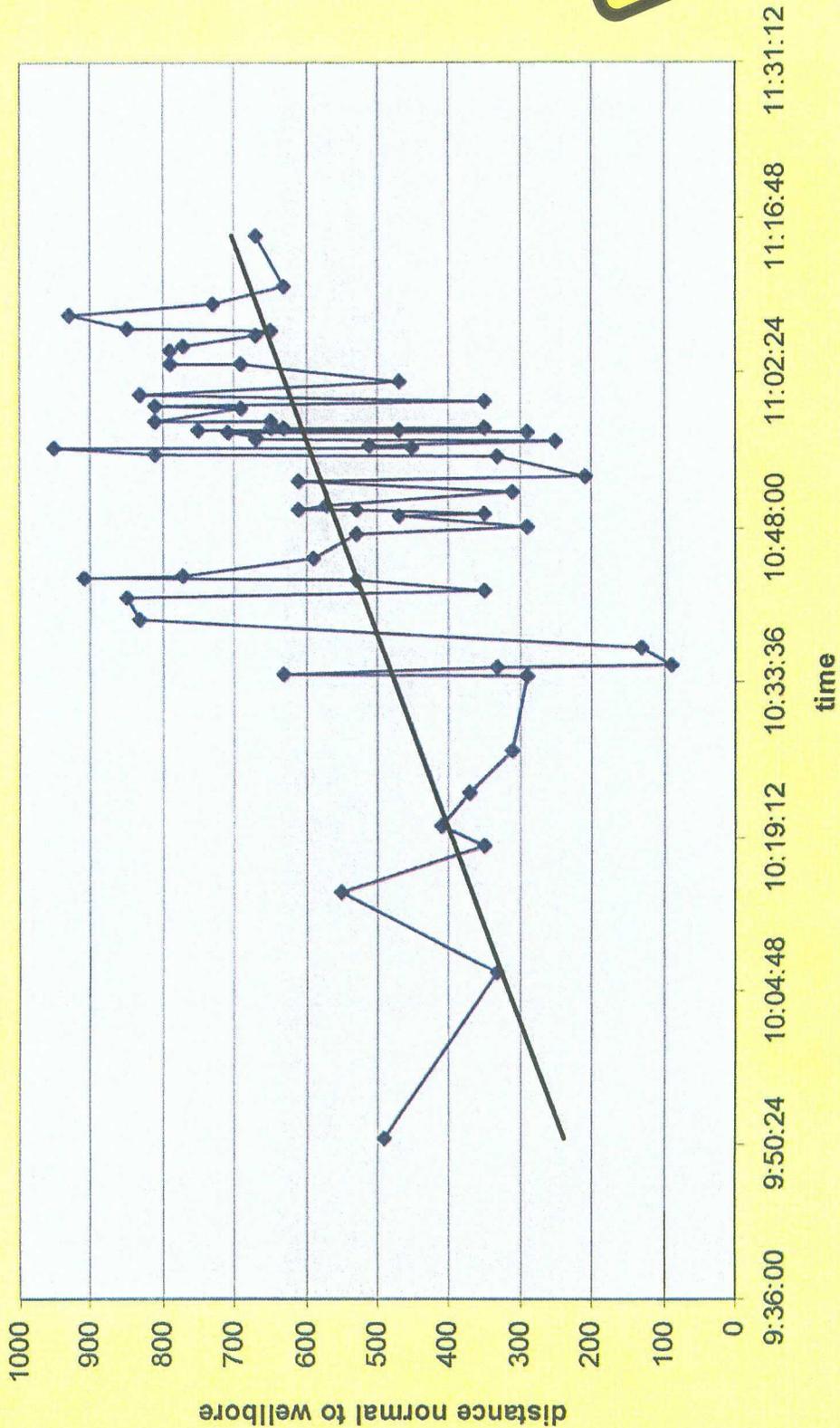
# Alysheba No. 1 – Map View



- Fracture Azimuths: Difficult to determine, possibly N-S.
- Fracture Half-Lengths: ~900' (measured North from wellbore)
- Most of the microseismic events were recorded during Stage 2. Only one event was detected during both Stages 3 and 4.
- Unclear why Stage 2 produced the majority of the events; perhaps interaction with faulting or fracture swarm near wellbore?



# Alysheba No. 1 Stage 2 - Map View



## Conclusions

- *Azimuth uncertain, but has a strong N-S component*
- *Possibility of a N35°E secondary component*
- *250 ft of height*
- *900 ft of half-length, longer than Seabiscuit, but still shorter than competitors*
- *Low degree of complexity*
- *Higher pressures may not be related to oblique initiation (all stages lack of tortuosity, presence of perf friction)*



Wildcat Measurement Service  
P.O. Box 1836  
Artesia, New Mexico 88211-1836  
TollFree #888-421-9453  
Office #505-746-3481

"Quality and Service is our First Concern"

PDS 06/25/00

Run No. 261213-02  
Date Run 12/13/2006  
Date Sampled 12/09/2006

Analysis for: PARALLEL PETROLEUM CORPORATION

GPANGL162

Well Name: FORESO 1525-16 STATE "B" #1

Field:

Producer: PARALLEL PETROLEUM CORP.

Sta. Number:

County: CHAVES

State: NM

Purpose: SPOT

Sampled By: A.J.G.

Sampling Temp: 22.0 DEG F

Atmos Temp: DEG F

Volume/day: 1925 MCF/DAY

Formation:

Pressure on Cylinder: 60.0 PSIG

Line Pressure: 73.2 PSIA

GAS COMPONENT ANALYSIS

Pressure Base: 14.7300

|                |     | Mol %    | GPM    |
|----------------|-----|----------|--------|
| Carbon Dioxide | CO2 | 4.3235   |        |
| Nitrogen       | N2  | 0.6738   |        |
| Methane        | C1  | 85.9676  |        |
| Ethane         | C2  | 5.6524   | 1.5108 |
| Propane        | C3  | 1.9299   | 0.5314 |
| Iso-Butane     | IC4 | 0.2812   | 0.0920 |
| Nor-Butane     | NC4 | 0.4872   | 0.1536 |
| Iso-Pentane    | IC5 | 0.1606   | 0.0588 |
| Nor-Pentane    | NC5 | 0.1404   | 0.0508 |
| Hexanes Plus   | C6+ | 0.3834   | 0.1673 |
| TOTAL          |     | 100.0000 | 2.5647 |

Real BTU Dry: 1078.92  
Real BTU Wet: 1060.14  
Real Calc. Specific Gravity: 0.6732  
Field Specific Gravity: 0.0000

Standard Pressure: 14.6960  
BTU Dry: 1073.62  
BTU Wet: 1054.94

Z Factor: 0.9974  
N Value: 1.2948  
Avg Mol Weight: 19.4551  
Avg CuPt/Gal: 57.1122  
26 Lb Product: 0.4332  
Methane+ GPM: 17.1358  
Ethane+ GPM: 2.5647  
Propane+ GPM: 1.0538  
Butane+ GPM: 0.5225  
Pentane+ GPM: 0.2769

REMARKS:

Approved by: DON ROEMER

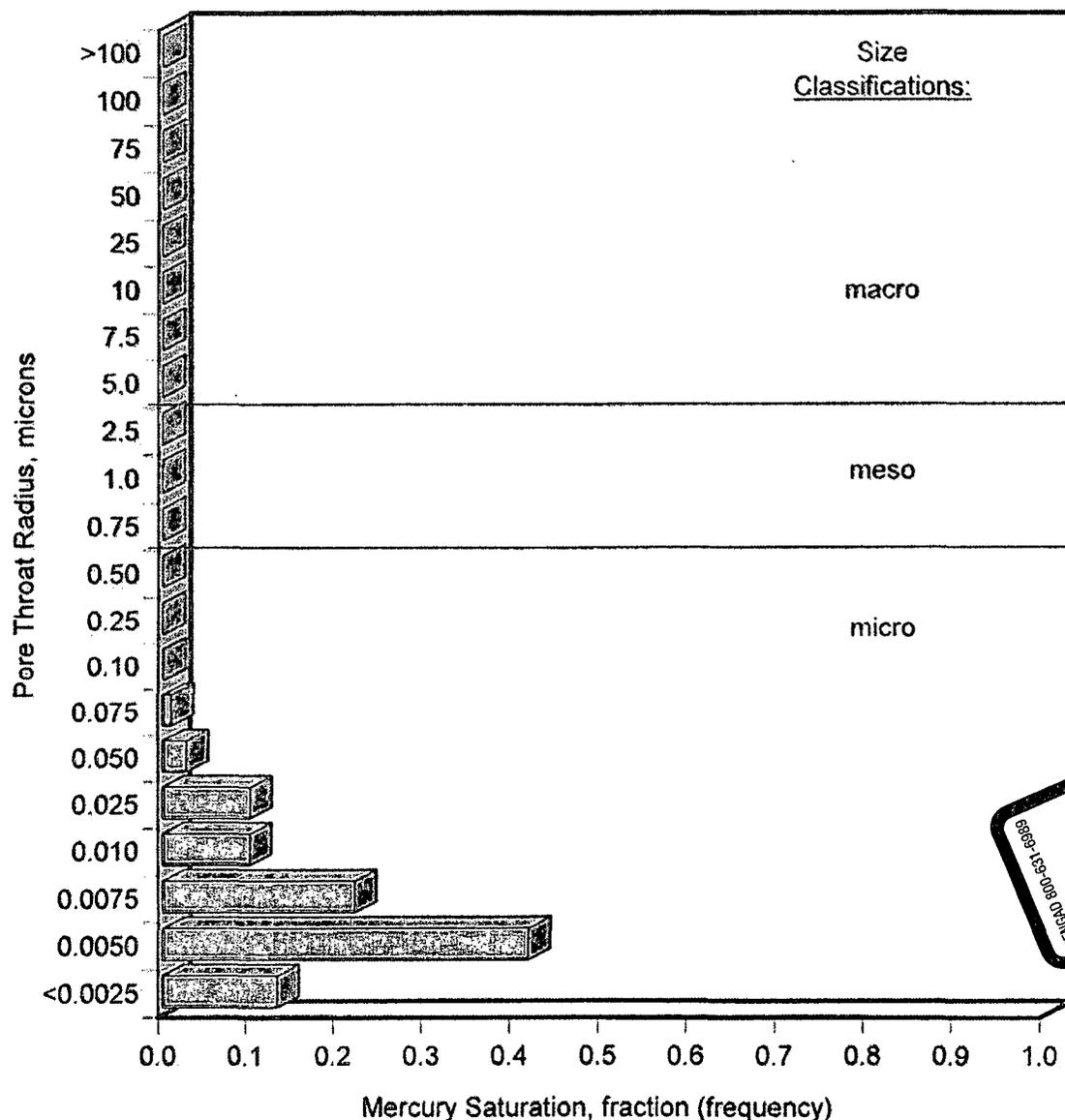
Wed Dec 13 10:13:35 2006



Company: Bold Energy  
 Well: Delilah State No. 1  
 Field: Runyan Ranch  
 Formation: Wolfcamp  
 Location: Eddy County, New Mexico  
 File: HOU-060947

| Sample:                          | 6Bm     | un-      | Host Plug |    |
|----------------------------------|---------|----------|-----------|----|
| Depth, feet:                     | 4385.60 | stressed | na        | na |
| Klinkenberg Permeability, md:    |         | 0.005    | -         | -  |
| Permeability to Air, md:         |         | 0.019    | -         | -  |
| Swanson Permeability, md:        |         | 0.00001  | -         | -  |
| Porosity, fraction:              |         | 0.013    | -         | -  |
| maximum Sb/Pc, fraction:         |         | 0.00003  |           |    |
| R35, microns:                    |         | 0.00583  |           |    |
| R50 (median pore throat radius): |         | 0.00469  |           |    |

### PORE THROAT SIZE HISTOGRAM



**KELLAHIN & KELLAHIN**  
**Attorney at Law**

**W. THOMAS KELLAHIN**  
**706 GONZALES ROAD**  
**SANTA FE, NEW MEXICO 87501**

**TELEPHONE 505-982-4285**  
**FACSIMILE 505-982-2047**  
**TKELLAHIN@COMCAST.NET**

August 17, 2007

**HAND DELIVERED**

Mr. Mark Fesmire, P.E., Director  
Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

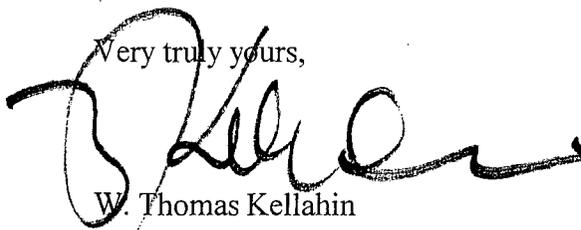
Re: Administrative Application of Parallel Petroleum Corporation  
for authorization to simultaneously dedicate  
a standard gas spacing and proration unit in the  
Wolfcamp formation to two horizontal wellbores,  
including an exception to the well density requirement  
of Division Rule 104.D, Chaves County, New Mexico  
S/2 Section 16, T15S, R25E  
Swale 1525-16 State Well No. 1 and 2

RECEIVED  
2007 AUG 17 PM 12:49

Dear Ms. Fesmire:

On behalf of Parallel Petroleum Corporation, please find enclosed our  
referenced administrative application.

Very truly yours,



W. Thomas Kellahin

cc: Parallel Petroleum Corporation  
Attn: Mike Gray

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**NEW MEXICO OIL CONSERVATION DIVISION**

- Engineering Bureau -

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

*Kellahin*

Print or Type Name

Signature

**Kellahin & Kellahin  
Attorneys At Law**

Title

Date

8/12/07

706 Gonzales Rd.  
Santa Fe, NM 87501

*TKellahin@conservation.nm.gov*

Address

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

**IN THE MATTER OF THE ADMINISTRATIVE APPLICATION  
OF PARALLEL PETROLEUM CORPORATION FOR  
AUTHORIZATION TO SIMULTANEOUSLY DEDICATED  
A STANDARD SPACING AND PRORATION UNIT IN THE  
WOLFCAMP FORMATION TO TWO HORIZONTAL WELLS  
INCLUDING AN EXEMPTION TO THE WELL DENSITY  
REQUIREMENT OF RULE 104.D,  
CHAVES COUNTY, NEW MEXICO.**

ADMINISTRATIVE APPLICATION

Parallel Petroleum Corporation ("Parallel") by its attorneys, Kellahin & Kellahin, seeks approval to simultaneously dedicate a standard gas spacing and proration unit in the Wolfcamp formation to two horizontal wellbores including an exemption to the well density requirements of Rule 104.D, Chaves County, New Mexico. Applicant seeks authorization to dedicate a standard 320-acre spacing and proration unit comprised of the S/2 of Section 16, Township 15 South, Range 25East, Chaves County, New Mexico in the Wolfcamp formation to the following two wells:

(a) The Swale 1525-16 State Well No 2 (API #3000563924) to be drilled at an unorthodox surface location 760 feet FSL and 190 feet FWL (Unit M) and then to penetrate the Wolfcamp formation within the standard producing area window at a standard subsurface location approximately 660 feet FWL and 760 feet FSL (Unit M) and then drilled horizontally in an easterly direction staying within the producing area not less than 660 feet from each of the end and side boundaries of this spacing unit and ending at a standard bottom hole location 760 feet FSL and 660 feet FEL

(b) The Swale 1525-16 State Well No. 1 (API #3000563886) that has been drilled at an unorthodox surface location 1880 feet FSL and 208 feet FWL (Unit L) and penetrated the Wolfcamp formation within the standard producing area window at a standard subsurface location approximately 660 feet FWL and 660 feet FSL (Unit L) and then was drilled horizontally in an easterly direction staying within the producing area not less than 660 feet from each of the end and side boundaries of this spacing unit and ending at a standard bottom hole location 1880 feet FSL and 660 feet FEL

In support of its application, Parallel states:

- (1) Parallel is the current operator of the Swale 1525-16 State Well No. 1 (API #3000563886) that has been drilled and completed as a horizontal well in the N/2S/2 of Section 16, T15S, R25E. **See Exhibit "A" attached**
- (2) Parallel has obtained approval of its APD to drill second horizontal well in the S/2S/2 of Section 16, T15S, R25E being the Swale 1525-16 Well No. 2 (API #3000563924). **See Exhibit "B" attached**
- (3) Division Rule 111 provides for the rules and regulations of the drilling of directional wells and by definition includes "horizontal" wells but apparently does not limited the number of horizontal wells that can be drilled within a Project Area. Instead Rule 111 refers to a project area "that is enclosed by the outer boundaries of a spacing unit or a combination of complete spacing units," and incorporates by reference Rule 104 to define a "spacing unit"
- (4) Division Rule 104.C (2) allows two wells in a 320-acre spacing unit with each well located in a different 160-tract of the 320-acre spacing unit. This rule appears not to specifically address horizontal wells.
- (5) Division Rule 104.D (3) States: "number of wells per spacing unit. Exceptions to the provisions of statewide rules or special pool orders concerning the number of wells allowed per spacing unit may be permitted by the Director only after notice and opportunity for hearing. Notice shall be given to those "affected parsons" defined by Rule 1207.A (2)."
- (6) The Division Legal Examiner, David K. Brooks, has advised the notice for this type of case, "affected parties" are: (a) all each operator of an adjoining and offsetting 320-acre drilled or undrilled spacing units (direct or diagonal offsets) (b) if undrilled, then to the working interest owners and unleased mineral owners, (c) if applicant is also the offsetting operator, then to its working interest owners, (d) if applicant is the offsetting operator and the only working interest owners, then to its lessors, (e) if the offsetting section has no spacing unit, then the applicant and presume the orientation closest to the subject spacing unit.

- (7) Parallel has provided written notice of hearing to all “affected parties, including those listed on the attached located map and index. **Exhibit “C”** and the notice letter attached as **Exhibit “D”**
- (8) Parallel’s enclosed exhibits demonstrate that because of the low permeability of the Wolfcamp formation in this area:
- a. the actual area being depleted by the first horizontal well is generally limited to the north half of this spacing unit, being the N/2S/4 of Section 16, and it not effectively recovery either the gas underlying the S/2 of Section 16 or adversely affecting the correlative rights of the offsetting interest owners.
  - b. A second horizontal well is needed by the south half of this spacing unit, being the S/2S/2 of Section 16, in order to provide a opportunity to recovery gas that might otherwise not be recovered under the S/2 of Section 16 and in doing so will not adversely affect the correlative rights of the offsetting interest owners.
- (9) Exhibit “E” is a written summary prepare by Parallel’s petroleum geologist and petroleum engineer with supporting exhibits:
- (a) paleogeography of the Permian basin---see Exhibit “F”
  - (b) NW shelf stratigraphic chart---see Exhibit G
  - (c) Cross Section & Trap Diagram---see Exhibit H
  - (d) Alysheba No. 1-Map View—see Exhibit I
  - (e) Alysheba No. Stage 2-Map View—Exhibit J
  - (f) Conclusions—Exhibit K
  - (g) Gas Analysis from Foreso 152506 State E-1 well,see Exhibit L
  - (h) Pore Throat Size Histogram—see Exhibit M
  - (i) Three well cross-section (Large display)—see Exhibit N
- (10) These exhibit are basically the same data presented to the Division’s at a meeting on February 13, 2007 attended by members of the industry and the Division Chief Engineer, Richard Ezeanyim, and Division’s attorney, David K. Brooks.
- (11) Approval of this application will not impair the correlative rights of any other interest owner in the area and will afford Parallel the opportunity to utilize two horizontal wells to produce the Wolfcamp formation gas reserves from this GPU.

(12) Approval of this application will be in the best interests of conversations, the prevention of waste and the protection of correlative rights.

WHEREFORE, Parallel Petroleum Corporation requests that this the Oil Conservation Division enter its order granting an exception to the well density requirements of Rule 104.B and authorize the simultaneous dedication of two horizontal wells within this spacing unit.

RESPECTFULLY SUBMITTED:

A handwritten signature in black ink, appearing to read 'W. Thomas Kellahin', written over the printed name.

W. THOMAS KELLAHIN  
KELLAHIN & KELLAHIN  
706 Gonzales Road  
Santa Fe, New Mexico 87501  
(505) 982-4285

DISTRICT I  
1525 N. French Dr., Hobbs, NM 88240

DISTRICT II  
1501 W. Grand Avenue, Artesia, NM 88210

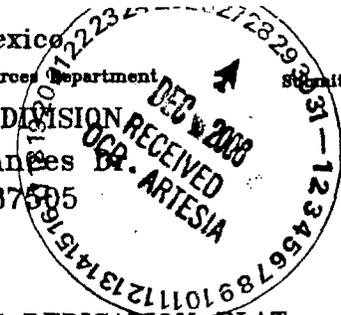
DISTRICT III  
1000 Rio Brazos Rd., Artec, NM 87410

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
1220 South St. Francis  
Santa Fe, NM 87505

Form C-102  
Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies



AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

|               |   |                                |
|---------------|---|--------------------------------|
| API Number    | Pool Code<br>97489                              | Pool Name<br>Wildcat; Wolfcamp |
| Property Code | Property Name<br>SWALE 1525-16 STATE            | Well Number<br>1               |
| OGRID No.     | Operator Name<br>PARALLEL PETROLEUM CORPORATION | Elevation<br>3501'             |

Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| L             | 16      | 15 S     | 25 E  |         | 1880'         | SOUTH            | 208'          | WEST           | CHAVES |

Bottom Hole Location If Different From Surface

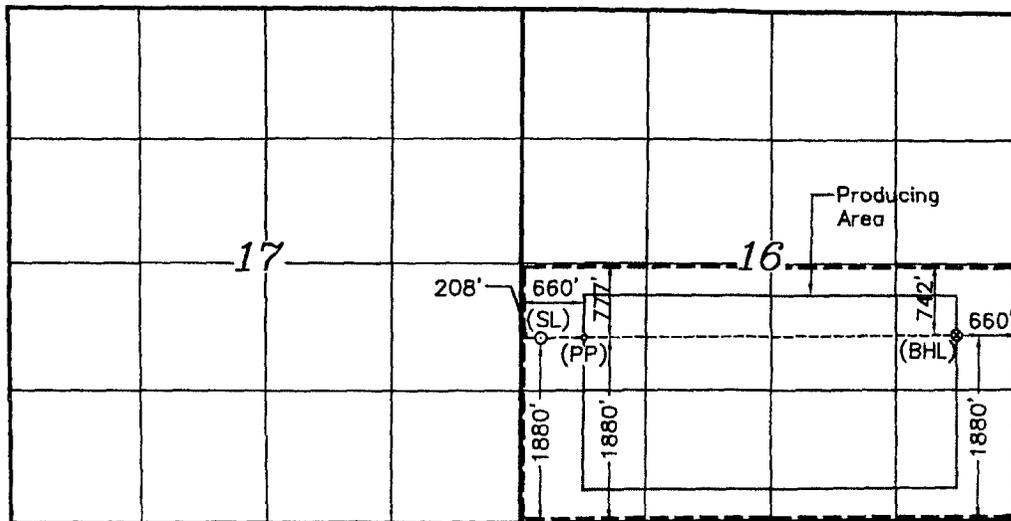
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| I             | 16      | 15 S     | 25 E  |         | 1880'         | SOUTH            | 660'          | EAST           | CHAVES |

|                        |                 |                    |           |
|------------------------|-----------------|--------------------|-----------|
| Dedicated Acres<br>320 | Joint or Infill | Consolidation Code | Order No. |
|------------------------|-----------------|--------------------|-----------|

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

NOTE:

1) Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927. Distances shown hereon are mean horizontal surface values.



Project Area

| Coordinate Table       |                  |
|------------------------|------------------|
| Description            | Plane Coordinate |
| Swale 1525-16 State #1 | X = 462,579.7    |
| Surface Location       | Y = 732,271.0    |
| Swale 1525-16 State #1 | X = 463,031.5    |
| Penetration Point      | Y = 732,276.2    |
| Swale 1525-16 State #1 | X = 466,997.4    |
| Bottom Hole Location   | Y = 732,322.7    |



OPERATOR CERTIFICATION

I hereby certify the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: *Gay E. Miller*  
Date: 12-27-06  
Printed Name: *Agent, Parallel Petroleum Company*

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.

October 12, 2006

Date of Survey  
Signature & Seal of Professional Surveyor: *KMT*

W.O. Num. 2006-1002

Certificate No. MACON McDONALD 12185

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Asteo, NM 87410

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Energy, Minerals & Natural Resources Department

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1220 South St. Frances Dr.  
Santa Fe, NM 87505

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WELL LOCATION AND ACREAGE DEDICATION PLAT

|               |   |                                |
|---------------|---|--------------------------------|
| API Number    | Pool Code<br>97489                              | Pool Name<br>Wildcat; Wolfcamp |
| Property Code | Property Name<br>SWALE 1525-16 STATE            | Well Number<br>2               |
| OGRID No.     | Operator Name<br>PARALLEL PETROLEUM CORPORATION | Elevation<br>3498'             |

Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| M             | 16      | 15 S     | 25 E  |         | 760           | SOUTH            | 190           | WEST           | CHAVES |

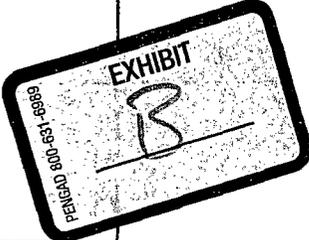
Bottom Hole Location if Different From Surface

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| P             | 16      | 15 S     | 25 E  |         | 760           | SOUTH            | 660           | EAST           | CHAVES |

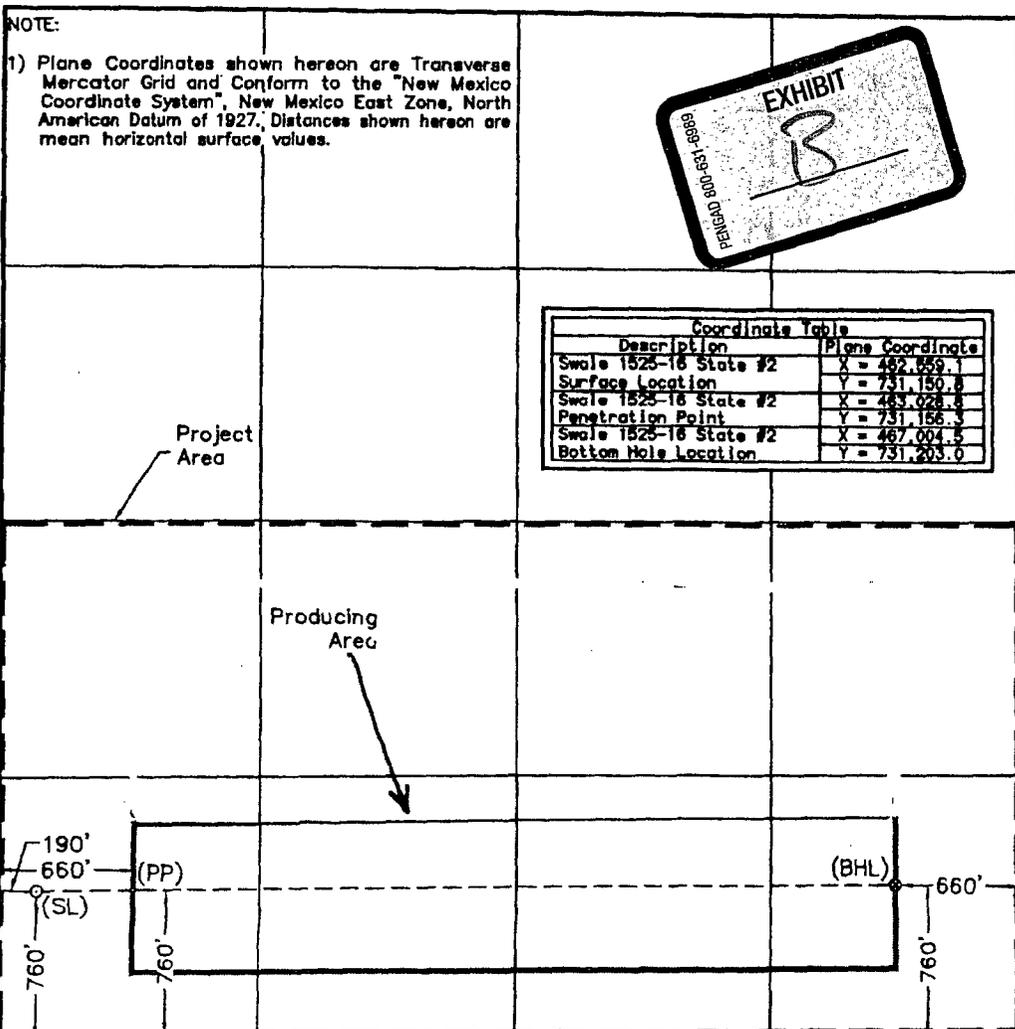
|                        |                 |                    |           |
|------------------------|-----------------|--------------------|-----------|
| Dedicated Acres<br>320 | Joint or Infill | Consolidation Code | Order No. |
|------------------------|-----------------|--------------------|-----------|

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

NOTE:  
1) Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927. Distances shown hereon are mean horizontal surface values.



| Coordinate Table       |                  |
|------------------------|------------------|
| Description            | Plane Coordinate |
| Swale 1525-16 State #2 | X = 462,659.1    |
| Surface Location       | Y = 731,150.6    |
| Swale 1525-16 State #2 | X = 463,028.6    |
| Penetration Point      | Y = 731,156.3    |
| Swale 1525-16 State #2 | X = 467,004.5    |
| Bottom Hole Location   | Y = 731,203.0    |



**OPERATOR CERTIFICATION**

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization, either owner or working interest or undivided mineral interests, the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a secondary pooling agreement or a compulsory pooling order heretofore entered by the division.

*Deane Durham* 4-9-07  
Signature Date

Deane Durham  
Printed Name

**SURVEYOR CERTIFICATION**

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.

October 12, 2006

Date of Survey KMT  
Signature & Seal of Professional Surveyor

*[Signature]*

W.O. Num. 2006-1003

Certificate No. WACON McDONALD 12185



**Parallel Petroleum Corporation's Notice List  
For Swale 1525-16 State Com Wells No. 1 and 2**

- Tract 1: N/2 of Sec 15 (Undrilled)
- (a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
  - (c) CMW Interests, Inc.
- Tract 2: S/2 of Sec 15 (Undrilled)
- (a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
- Tract 3: N/2 of Sec 16 (Undrilled)
- (a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
- Tract 4: N/2 of Sec 17 (Undrilled)
- (a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
  - (d) CMW Interests, Inc. (W/2E/2)
  - (e) Egler Exploration, Inc.(W/2E/2)
- Tract 5: S/2 of Sec 17 (Drilled)
- (a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
  - (c) CMW Interests, Inc. (W/2E/2)
  - (d) Egler Exploration, Inc. (W/2E/2)
- Tract 6: N/2 of Sec 20 (Undrilled)
- (a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
- Tract 7: N/2 of Sec 21 (Undrilled)
- a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
- Tracts 8: N/2 of Sec 22 (Undrilled)
- (a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
  - (c) CMW Interests, Inc. (E/2NE/4)
  - (d) Elger Exploration, Inc. (E/2NE/4)
  - (e) Unleased mineral interest owners:
    - a. A. Gayle Hudgens. a single woman  
P.O. Box 25561  
Dallas, TX 75225

- b. Sacramento Partners Limited Partnership  
105 South Fourth Street  
Artesia. NM 88210
  
- c. Spiral, Inc.  
P.O. Box 1933  
(address)
  
- e. Sharbro Oil Ltd. Co.  
P.O. Box 829  
Artesia, NM 88211
  
- f. Southwest Resources, Inc.  
1111 West Country Club Road  
Roswell, NM 88201
  
- g. Lobos Energy Partners, LLC  
3817 NW Expressway, Suite 950  
Oklahoma City, OK 73112
  
- h. Estate of W. E. Flint, dec.  
Dona Ana County, NM PC #5171  
Elaine B. Flint, widow and exec.  
2125 Thomas Dr.  
Las Cruces, NM 88001
  
- i. Margaret Louise Doyle & John Steven Doyle,  
3747 - 66 Campana South  
Oceanside, CA 92054
  
- j. Martin Yates III  
c/o Myco Industries, Inc. P. o. Box 840  
Artesia NM 88211

**KELLAHIN & KELLAHIN**  
**Attorney at Law**

**W. THOMAS KELLAHIN**  
**706 GONZALES ROAD**  
**SANTA FE, NEW MEXICO 87501**

**TELEPHONE 505-982-4285**  
**FACSIMILE 505-982-2047**  
**TKELLAHIN@COMCAST.NET**

August 17, 2007

**CERTIFIED MAIL-RETURN RECEIPT REQUESTED**

**NOTICE OF THE FOLLOWING NEW MEXICO OIL CONSERVATION  
DIVISION ADMINISTRATIVE CASE:**

*OFFSETTING INTEREST OWNERS:*

**Re:** Administrative Application of Parallel Petroleum Corporation  
for authorization to simultaneously dedicate  
a standard gas spacing and proration unit in the  
Wolfcamp formation to two horizontal wellbores,  
including an exemption to the well density requirements  
of Rule 104.D, Chaves County, New Mexico

Dear interest owner:

On behalf of Parallel Petroleum Corporation please find enclosed a copy of  
its referenced administrative application. This notice is based upon records that  
indicate that you have an interest in adjoining and offsetting tracts and are parties  
affected by this application

If you have no objection, then there is nothing for you to do. If you are  
willing to waiver objection, please sign this letter as indicated and return it to me.  
However, should you have any objection to the Division approving this  
application, then it will be necessary for you to file a written objection with the  
New Mexico Oil Conservation Division, 1220 South Saint Francis Drive, Santa  
Fe, New Mexico 87505 within twenty (20) days of the date of this letter. Failure  
to file a timely objection will preclude you from objecting at a later date.

Very truly yours,

  
W. Thomas Kellahin

**WAIVER OF OBJECTION:**

By: \_\_\_\_\_ with authority for  
and on behalf of \_\_\_\_\_  
Date: \_\_\_\_\_



**Wolfcamp Reservoir Development**  
**Section 16, T15S, R25E**  
**Chaves Co., New Mexico**  
**Case # 13965**

This Wolfcamp gas reservoir is interpreted as the sabkha shelf model along the Northwest carbonate platform. The Wolfcamp reservoir is contained within the restricted lagoon-platform facies belt where dolomitization and fracturing has occurred to enhance the porosity and in deep enough water so that evaporates are not prevalent to occlude porosity. Up-dip, north to northwest of the reservoir are terrestrial deposits which do include evaporates that cement the porosity and act as a seal for the Wolfcamp stratigraphic trap. Down-dip, south to southeast, of the dolomitized Wolfcamp reservoir facies belt are tight limestones that do not contain the reservoir development.

There are three alternating depositional cycles. The matrix porosity is comprised of a dolomitized fusulinid wackestone-packstone overlain by a burrowed lime mud overlain by a lagoonal shale which is the maximum flooding event. The reservoir also contains natural fractures. The principal maximum stress direction is predominantly north-south. The formation dips to the east-southeast at 1 degree. The average gross thickness of the Wolfcamp varies from 25'-50' with an average net thickness of a few feet to 25' and an average porosity less than 8%.

Planned spacing between horizontal laterals in the south-half of section 16 is 1160'.

The Swale 1525-16 State #1 has been drilled in the north-half of the south-half and actual footages for the penetration point and total depth within the Wolfcamp pay are:

Surface Location @ 1880' FSL and 208' FWL, Section 16, T15S, R25E

Penetration Point @ 5183' measured depth, 1850' FSL and 751' FWL

Bottom-Hole Location @ 8924' measured depth, 1906' FSL and 790' FEL

Perforations are from top perf at 5290' measured depth to bottom perf at 8822' measured depth.

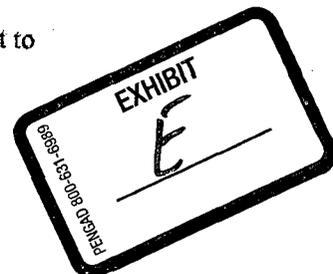
The Swale 1525-16 State #2 will be in the south-half of the south-half, and planned surface, penetration point and total depth are:

Surface Location @ 760' FSL and 190' FWL, Section 16, T15S, R25E

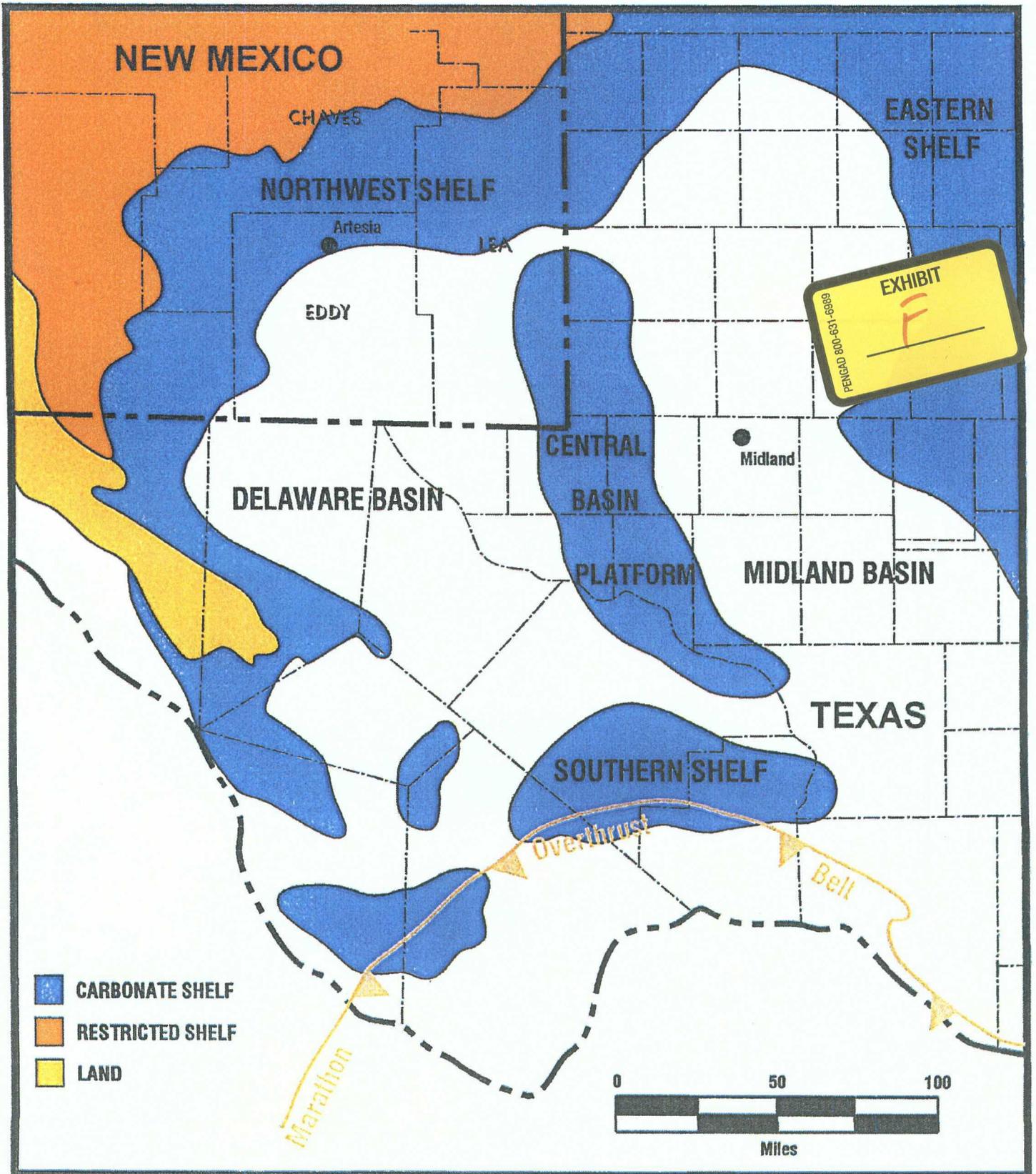
Penetration Point @ 760' FSL and 660' FWL, Bottom-Hole Location @ 760' FSL and 660' FEL

Recommended fracture half-lengths for this formation in the area are 1,100' in order to drain 160 acres. This would require 4 horizontal wells in parallel to drain a 640-acre section. This 1,100' fractured half-length yields an approximate proppant-fractured half-length of 500-600' and an effective producible half-length of 300-400'. Microseismic monitoring data from wells in the area fractured using Parallel Petroleum's preferred stimulation method show a fractured half-length of 900' and therefore the estimated producible half-length estimate is shorter than the recommended 300-400'. An optimistic estimate of 300' producible half-length of both the Swale #1 and the Swale #2 would create an unproductive interval along the length of and between the laterals of 560'.

In conclusion, given: low permeability of the dolomite (< .01 - .02 md), small net pay interval (< 20' in section 16) and low porosity of the interval (< 3% - 9% - ~ 7% in section 16), the Wolfcamp formation should be produced using 2 parallel horizontal wells per 320-acre unit to efficiently drain the unit.



# WOLFCAMPIAN (PERMIAN) PALEO GEOGRAPHY OF THE PERMIAN BASIN



# Northwest Shelf Stratigraphic Chart

| Age                          |                 | Unit Name   | HC's         | Approx. Depth                |     |
|------------------------------|-----------------|-------------|--------------|------------------------------|-----|
| Permian<br>289-248 MYA       | Ochoan          | Rustler     |              | Top Reservoir<br>~5000-5500' |     |
|                              |                 | Salado      |              |                              |     |
|                              | Guadalupian     | Tansill     |              |                              |     |
|                              |                 | Eumont      | Yates        |                              | ☉ ☀ |
|                              |                 |             | Seven Rivers |                              | ☉ ☀ |
|                              |                 |             | Queen        |                              | ☉ ☀ |
|                              |                 |             | Grayburg     |                              | ☉ ☀ |
|                              |                 | San Andres  | ☉            |                              |     |
|                              | Glorieta        | ☉           |              |                              |     |
|                              | Leonardian      | Yeso        | ☉ ☀          |                              |     |
| Abo                          |                 | ☉ ☀         |              |                              |     |
| Wolfcampian                  | <b>Wolfcamp</b> | ☉ ☀         |              |                              |     |
| Pennsylvanian<br>289-320 MYA |                 | Cisco       |              |                              |     |
|                              |                 | Canyon      |              |                              |     |
|                              |                 | Strawn      | ☉ ☀          |                              |     |
|                              |                 | Atoka       | ☀            |                              |     |
|                              |                 | Morrow      | ☉ ☀          |                              |     |
| Mississippian<br>320-363 MYA |                 | Miss. Lime  | ☉ ☀          |                              |     |
|                              |                 | Woodford    |              |                              |     |
| Devonian<br>409-363 MYA      |                 | Devonian    | ☀            |                              |     |
| Silurian<br>439-409 MYA      |                 | U. Silurian |              |                              |     |
|                              |                 | Fusselman   | ☉            |                              |     |
| Ordovician<br>510-439 MYA    | Simpson         | Montoya     | ☉            |                              |     |
|                              |                 | McKee       | ☉ ☀          |                              |     |
|                              |                 | Waddell     |              |                              |     |
|                              |                 | Connell     |              |                              |     |
|                              |                 | Joins       |              |                              |     |
|                              |                 | Ellenburger | ☀            |                              |     |
| Cambrian<br>510-570 MYA      |                 |             |              |                              |     |
| Pre-Cambrian<br>>570 MYA     |                 |             |              |                              |     |

## LEGEND



Current Active Plays



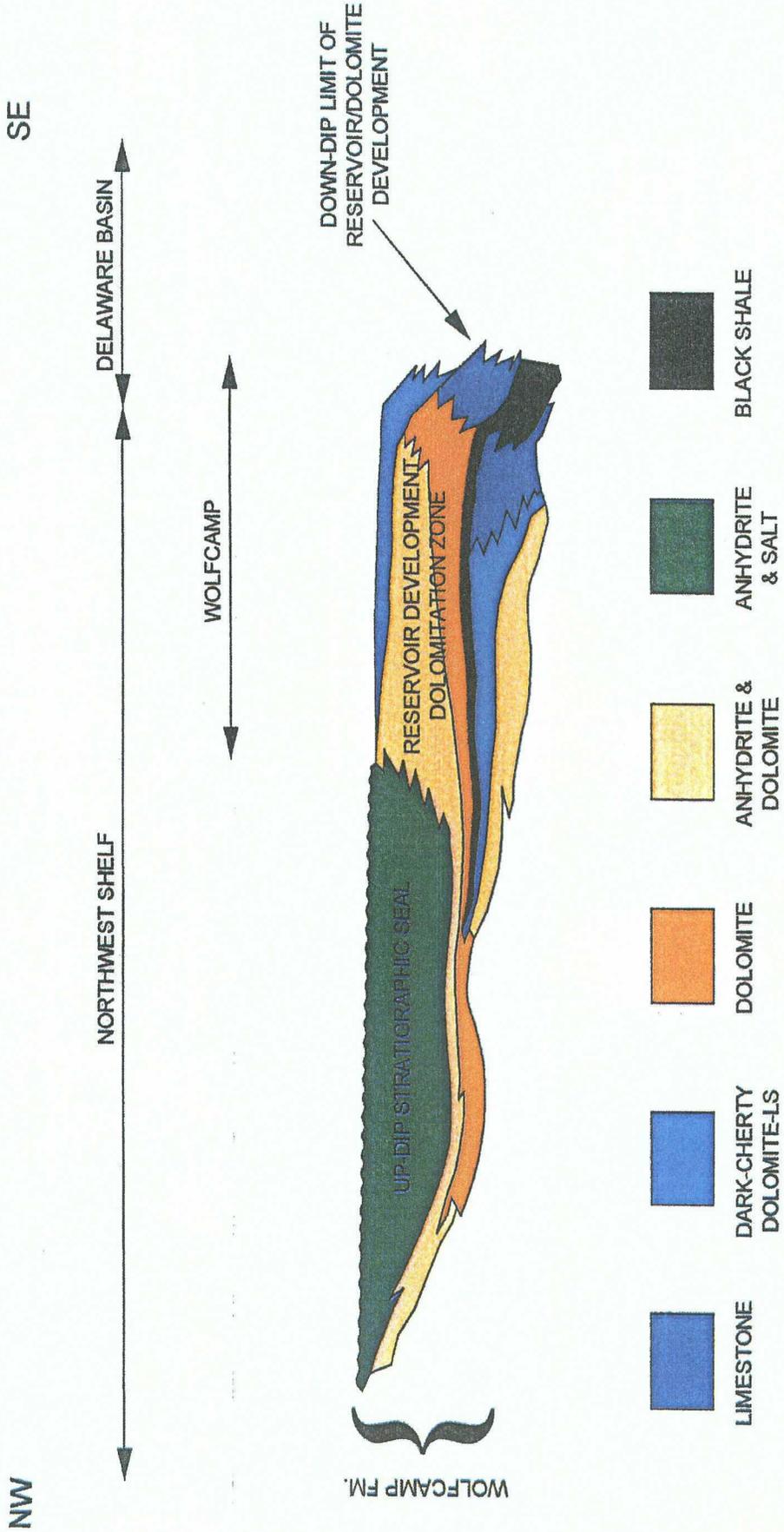
Oil Producing Zones



Gas Producing Zones



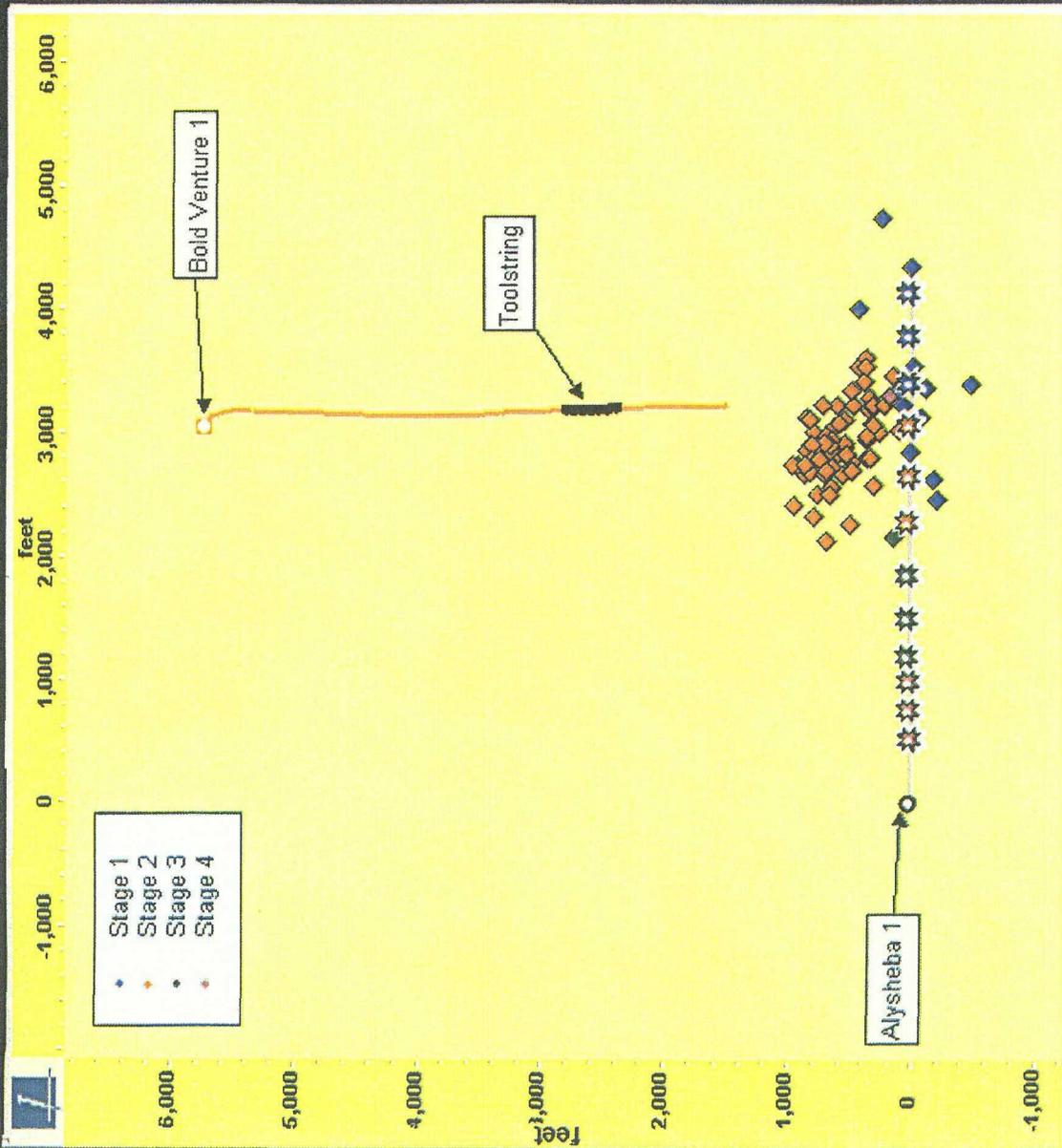
# CROSS SECTION & TRAP DIAGRAM



Northwest-southeast cross section across the Northwest Shelf/Delaware Basin transition. Rock types are differentiated illustrating the trap developed within the Wolfcamp reservoir. The pervasive evaporite deposits in the northwest act as a stratigraphic seal for the dolomitized reservoir developed down-dip. Further down structure the reservoir is limited by the lack of dolomite within tighter limestone and shale deposits.



# Alysheba No. 1 – Map View



- Fracture Azimuths: Difficult to determine, possibly N-S.
- Fracture Half-Lengths: ~900' (measured North from wellbore)
- Most of the microseismic events were recorded during Stage 2. Only one event was detected during both Stages 3 and 4.
- Unclear why Stage 2 produced the majority of the events; perhaps interaction with faulting or fracture swarm near wellbore?



# Alysheba No. 1 Stage 2 - Map View

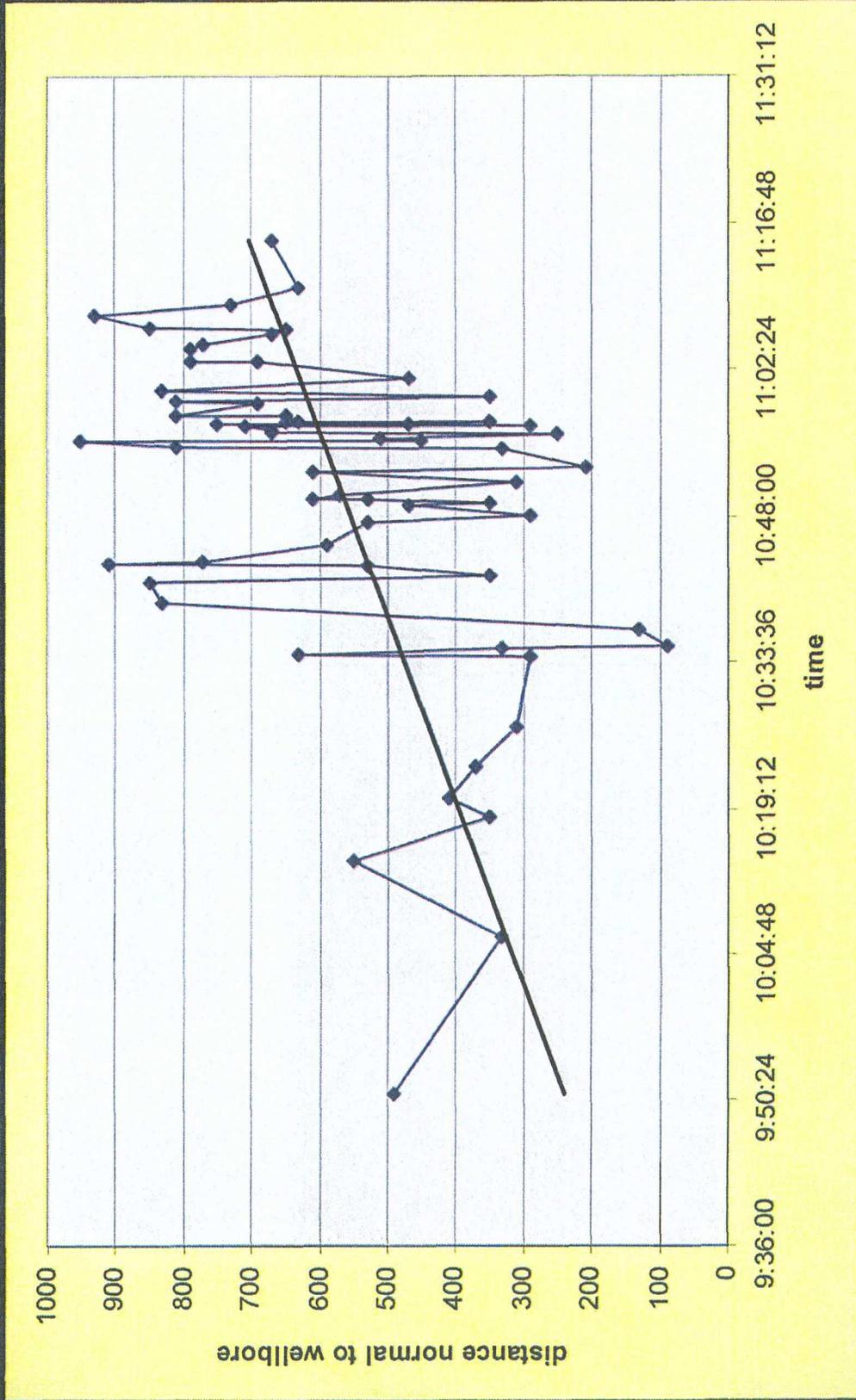


EXHIBIT  
J  
PENGAD 800-661-6989

Pinnacle

## Conclusions

- Azimuth uncertain, but has a strong N-S component
- Possibility of a N35°E secondary component
- 250 ft of height
- 900 ft of half-length, longer than Seabiscuit, but still shorter than competitors
- Low degree of complexity
- Higher pressures may not be related to oblique initiation (all stages lack of tortuosity, presence of perf friction)



Wildcat Measurement Service  
 P.O. Box 1836  
 Artesia, New Mexico 88211-1836  
 TollFree #888-421-9453  
 Office #505-746-3481

"Quality and Service is our First Concern"

PDS 06/25/00

Run No. 261213-02  
 Date Run 12/13/2006  
 Date Sampled 12/09/2006

Analysis for: PARALLEL PETROLEUM CORPORATION  
 Well Name: FORESO 1525-16 STATE "B" #1

GPANGL.162

Field:  
 Sta. Number:  
 Purpose: SPOT  
 Sampling Temp: 22.0 DEG F  
 Volume/day: 1925 MCF/DAY  
 Pressure on Cylinder: 60.0 PSIG

Producer: PARALLEL PETROLEUM CORP.  
 County: CHAVES State: NM  
 Sampled By: A.J.G.  
 Atmos Temp: DEG F  
 Formation:  
 Line Pressure: 73.2 PSIA

GAS COMPONENT ANALYSIS

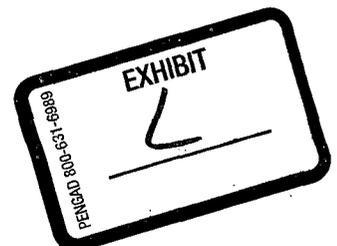
|                |     | Mol %    | GPM    |
|----------------|-----|----------|--------|
| Carbon Dioxide | CO2 | 4.3235   |        |
| Nitrogen       | N2  | 0.6738   |        |
| Methane        | C1  | 85.9676  |        |
| Ethane         | C2  | 5.6524   | 1.5108 |
| Propane        | C3  | 1.9299   | 0.5314 |
| Iso-Butane     | IC4 | 0.2812   | 0.0920 |
| Nor-Butane     | NC4 | 0.4872   | 0.1536 |
| Iso-Pentane    | IC5 | 0.1606   | 0.0588 |
| Nor-Pentane    | NC5 | 0.1404   | 0.0508 |
| Hexanes Plus   | C6+ | 0.3834   | 0.1673 |
| TOTAL          |     | 100.0000 | 2.5647 |

Pressure Base: 14.7300  
 Real BTU Dry: 1078.92  
 Real BYD Wet: 1060.14  
 Real Calc. Specific Gravity: 0.6732  
 Field Specific Gravity: 0.0000  
 Standard Pressure: 14.6960  
 BTU Dry: 1073.62  
 BTU Wet: 1054.94  
 Z Factor: 0.9974  
 N Value: 1.2948  
 Avg Mol Weight: 19.4551  
 Avg CuPt/Gal: 57.1122  
 26 lb Product: 0.4332  
 Methane+ GPM: 17.1358  
 Ethane+ GPM: 2.5647  
 Propane+ GPM: 1.0538  
 Butane+ GPM: 0.5225  
 Pentane+ GPM: 0.2769

REMARKS:

Approved by: DON HOBMAN

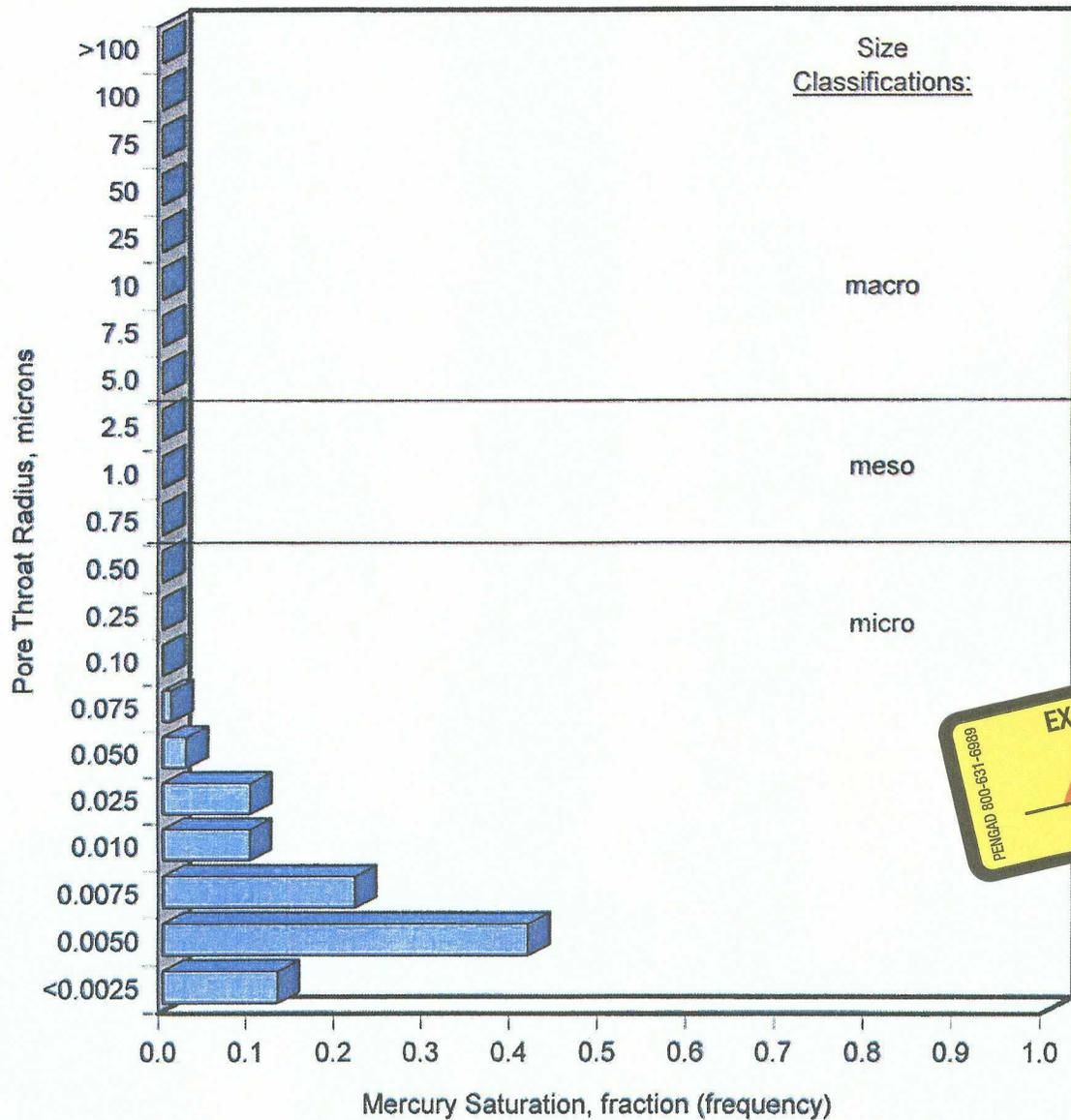
Wed Dec 13 10:13:35 2006



Company: Bold Energy  
 Well: Delilah State No. 1  
 Field: Runyan Ranch  
 Formation: Wolfcamp  
 Location: Eddy County, New Mexico  
 File: HOU-060947

| Sample:                          | 6Bm     | un-stressed | Host Plug |    |
|----------------------------------|---------|-------------|-----------|----|
| Depth, feet:                     | 4385.60 |             | na        | na |
| Klinkenberg Permeability, md:    |         | 0.005       | -         | -  |
| Permeability to Air, md:         |         | 0.019       | -         | -  |
| Swanson Permeability, md:        |         | 0.00001     | -         | -  |
| Porosity, fraction:              |         | 0.013       | -         | -  |
| maximum Sb/Pc, fraction:         |         | 0.00003     |           |    |
| R35, microns:                    |         | 0.00583     |           |    |
| R50 (median pore throat radius): |         | 0.00469     |           |    |

### PORE THROAT SIZE HISTOGRAM



**KELLAHIN & KELLAHIN**  
**Attorney at Law**

**W. THOMAS KELLAHIN**  
**706 GONZALES ROAD**  
**SANTA FE, NEW MEXICO 87501**

**TELEPHONE 505-982-4285**  
**FACSIMILE 505-982-2047**  
**TKELLAHIN@COMCAST.NET**

August 17, 2007

**HAND DELIVERED**

Mr. Mark Fesmire, P.E., Director  
Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

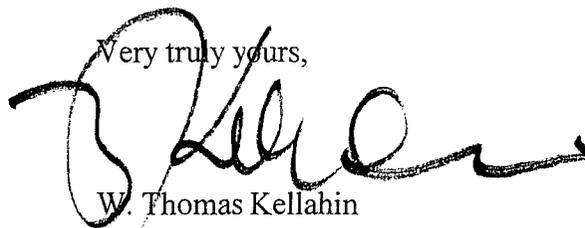
Re: Administrative Application of Parallel Petroleum Corporation  
for authorization to simultaneously dedicate  
a standard gas spacing and proration unit in the  
Wolfcamp formation to two horizontal wellbores,  
including an exception to the well density requirement  
of Division Rule 104.D, Chaves County, New Mexico  
S/2 Section 16, T15S, R25E  
Swale 1525-16 State Well No. 1 and 2

RECEIVED  
2007 AUG 17 PM 12:48

Dear Ms. Fesmire:

On behalf of Parallel Petroleum Corporation, please find enclosed our  
referenced administrative application.

Very truly yours,



W. Thomas Kellahin

cc: Parallel Petroleum Corporation  
Attn: Mike Gray

ABOVE THIS LINE FOR DIVISION USE ONLY

**NEW MEXICO OIL CONSERVATION DIVISION**  
 - Engineering Bureau -  
 1220 South St. Francis Drive, Santa Fe, NM 87505



**ADMINISTRATIVE APPLICATION CHECKLIST**

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

**Application Acronyms:**

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]**
- [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]**
- [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]**
- [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]**
- [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]**
- [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]**

- [1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]
- [A] Location - Spacing Unit - Simultaneous Dedication  
 NSL  NSP  SD
  - Check One Only for [B] or [C]
  - [B] Commingling - Storage - Measurement  
 DHC  CTB  PLC  PC  OLS  OLM
  - [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
 WFX  PMX  SWD  IPI  EOR  PPR
  - [D] Other: Specify \_\_\_\_\_

- [2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or  Does Not Apply
- [A]  Working, Royalty or Overriding Royalty Interest Owners
  - [B]  Offset Operators, Leaseholders or Surface Owner
  - [C]  Application is One Which Requires Published Legal Notice
  - [D]  Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
  - [E]  For all of the above, Proof of Notification or Publication is Attached, and/or,
  - [F]  Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

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

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

*[Handwritten Signature]*  
 Print or Type Name

**Kellahin & Kellahin**  
**Attorneys At Law**  
 Signature Title

*8/17/07*  
 Date

**706 Gonzales Rd.** *TKellahin@concept.net*  
 Santa Fe, NM 87501 Address

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

**IN THE MATTER OF THE ADMINISTRATIVE APPLICATION  
OF PARALLEL PETROLEUM CORPORATION FOR  
AUTHORIZATION TO SIMULTANEOUSLY DEDICATED  
A STANDARD SPACING AND PRORATION UNIT IN THE  
WOLFCAMP FORMATION TO TWO HORIZONTAL WELLS  
INCLUDING AN EXEMPTION TO THE WELL DENSITY  
REQUIREMENT OF RULE 104.D,  
CHAVES COUNTY, NEW MEXICO.**

ADMINISTRATIVE APPLICATION

Parallel Petroleum Corporation ("Parallel") by its attorneys, Kellahin & Kellahin, seeks approval to simultaneously dedicate a standard gas spacing and proration unit in the Wolfcamp formation to two horizontal wellbores including an exemption to the well density requirements of Rule 104.D, Chaves County, New Mexico. Applicant seeks authorization to dedicate a standard 320-acre spacing and proration unit comprised of the S/2 of Section 16, Township 15 South, Range 25East, Chaves County, New Mexico in the Wolfcamp formation to the following two wells:

(a) The Swale 1525-16 State Well No 2 (API #3000563924) to be drilled at an unorthodox surface location 760 feet FSL and 190 feet FWL (Unit M) and then to penetrate the Wolfcamp formation within the standard producing area window at a standard subsurface location approximately 660 feet FWL and 760 feet FSL (Unit M) and then drilled horizontally in an easterly direction staying within the producing area not less than 660 feet from each of the end and side boundaries of this spacing unit and ending at a standard bottom hole location 760 feet FSL and 660 feet FEL

(b) The Swale 1525-16 State Well No. 1 (API #3000563886) that has been drilled at an unorthodox surface location 1880 feet FSL and 208 feet FWL (Unit L) and penetrated the Wolfcamp formation within the standard producing area window at a standard subsurface location approximately 660 feet FWL and 660 feet FSL (Unit L) and then was drilled horizontally in an easterly direction staying within the producing area not less than 660 feet from each of the end and side boundaries of this spacing unit and ending at a standard bottom hole location 1880 feet FSL and 660 feet FEL

In support of its application, Parallel states:

- (1) Parallel is the current operator of the Swale 1525-16 State Well No. 1 (API #3000563886) that has been drilled and completed as a horizontal well in the N/2S/2 of Section 16, T15S, R25E. **See Exhibit "A" attached**
- (2) Parallel has obtained approval of its APD to drill second horizontal well in the S/2S/2 of Section 16, T15S, R25E being the Swale 1525-16 Well No. 2 (API #3000563924). **See Exhibit "B" attached**
- (3) Division Rule 111 provides for the rules and regulations of the drilling of directional wells and by definition includes "horizontal" wells but apparently does not limited the number of horizontal wells that can be drilled within a Project Area. Instead Rule 111 refers to a project area "that is enclosed by the outer boundaries of a spacing unit or a combination of complete spacing units," and incorporates by reference Rule 104 to define a "spacing unit"
- (4) Division Rule 104.C (2) allows two wells in a 320-acre spacing unit with each well located in a different 160-tract of the 320-acre spacing unit. This rule appears not to specifically address horizontal wells.
- (5) Division Rule 104.D (3) States: "number of wells per spacing unit. Exceptions to the provisions of statewide rules or special pool orders concerning the number of wells allowed per spacing unit may be permitted by the Director only after notice and opportunity for hearing. Notice shall be given to those "affected parsons" defined by Rule 1207.A (2)."
- (6) The Division Legal Examiner, David K. Brooks, has advised the notice for this type of case, "affected parties" are: (a) all each operator of an adjoining and offsetting 320-acre drilled or undrilled spacing units (direct or diagonal offsets) (b) if undrilled, then to the working interest owners and unleased mineral owners, (c) if applicant is also the offsetting operator, then to its working interest owners, (d) if applicant is the offsetting operator and the only working interest owners, then to its lessors, (e) if the offsetting section has no spacing unit, then the applicant and presume the orientation closest to the subject spacing unit.

- (7) Parallel has provided written notice of hearing to all “affected parties, including those listed on the attached located map and index. **Exhibit “C”** and the notice letter attached as **Exhibit “D”**
- (8) Parallel’s enclosed exhibits demonstrate that because of the low permeability of the Wolfcamp formation in this area:
- a. the actual area being depleted by the first horizontal well is generally limited to the north half of this spacing unit, being the N/2S/4 of Section 16, and it not effectively recovery either the gas underlying the S/2 of Section 16 or adversely affecting the correlative rights of the offsetting interest owners.
  - b. A second horizontal well is needed by the south half of this spacing unit, being the S/2S/2 of Section 16, in order to provide a opportunity to recovery gas that might otherwise not be recovered under the S/2 of Section 16 and in doing so will not adversely affect the correlative rights of the offsetting interest owners.
- (9) Exhibit “E” is a written summary prepare by Parallel’s petroleum geologist and petroleum engineer with supporting exhibits:
- (a) paleogeography of the Permian basin---see Exhibit “F”
  - (b) NW shelf stratigraphic chart---see Exhibit G
  - (c) Cross Section & Trap Diagram---see Exhibit H
  - (d) Alysheba No. 1-Map View—see Exhibit I
  - (e) Alysheba No. Stage 2-Map View—Exhibit J
  - (f) Conclusions—Exhibit K
  - (g) Gas Analysis from Foreso 152506 State E-1 well,see Exhibit L
  - (h) Pore Throat Size Histogram—see Exhibit M
  - (i) Three well cross-section (Large display)—see Exhibit N
- (10) These exhibit are basically the same data presented to the Division’s at a meeting on February 13, 2007 attended by members of the industry and the Division Chief Engineer, Richard Ezeanyim, and Division’s attorney, David K. Brooks.
- (11) Approval of this application will not impair the correlative rights of any other interest owner in the area and will afford Parallel the opportunity to utilize two horizontal wells to produce the Wolfcamp formation gas reserves from this GPU.

(12) Approval of this application will be in the best interests of conversations, the prevention of waste and the protection of correlative rights.

WHEREFORE, Parallel Petroleum Corporation requests that this the Oil Conservation Division enter its order granting an exception to the well density requirements of Rule 104.B and authorize the simultaneous dedication of two horizontal wells within this spacing unit.

RESPECTFULLY SUBMITTED:

A handwritten signature in black ink, appearing to read 'W. Thomas Kellahin', written over the printed name.

W. THOMAS KELLAHIN  
KELLAHIN & KELLAHIN  
706 Gonzales Road  
Santa Fe, New Mexico 87501  
(505) 982-4285

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210

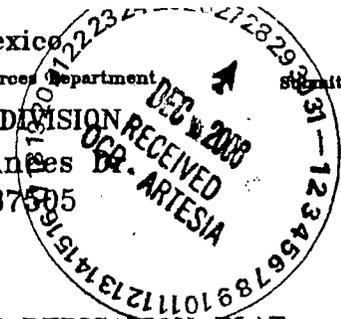
DISTRICT III  
1000 Rio Brazos Rd., Artec, NM 87410

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87506

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
1220 South St. Francis  
Santa Fe, NM 87505

Form C-102  
Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies



AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

|               |   |                                |
|---------------|---|--------------------------------|
| API Number    | Pool Code<br>97489                              | Pool Name<br>Wildcat, Wolfcamp |
| Property Code | Property Name<br>SWALE 1525-16 STATE            | Well Number<br>1               |
| OGRID No.     | Operator Name<br>PARALLEL PETROLEUM CORPORATION | Elevation<br>3501'             |

Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| L             | 16      | 15 S     | 25 E  |         | 1880'         | SOUTH            | 208'          | WEST           | CHAVES |

Bottom Hole Location If Different From Surface

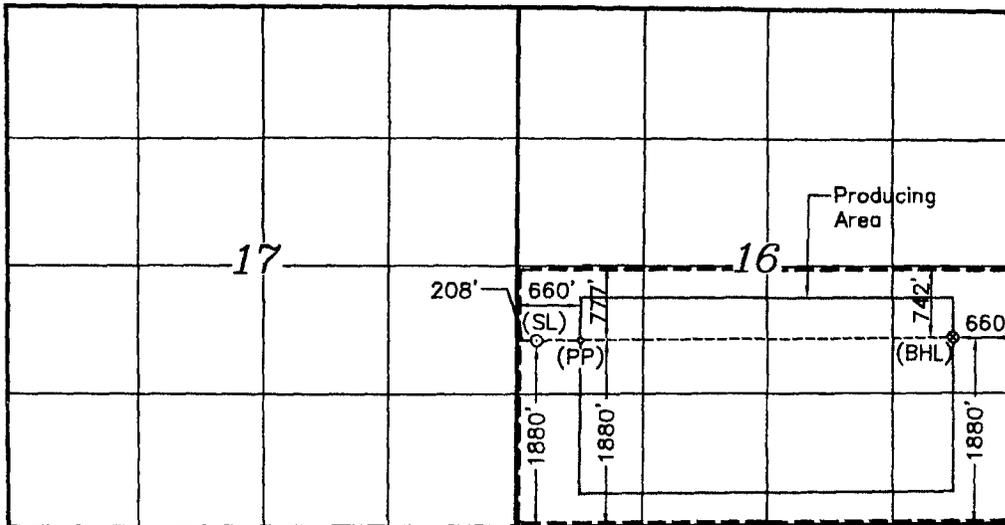
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| I             | 16      | 15 S     | 25 E  |         | 1880'         | SOUTH            | 660'          | EAST           | CHAVES |

|                        |                 |                    |           |
|------------------------|-----------------|--------------------|-----------|
| Dedicated Acres<br>320 | Joint or Infill | Consolidation Code | Order No. |
|------------------------|-----------------|--------------------|-----------|

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

NOTE:

- Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927. Distances shown hereon are mean horizontal surface values.



OPERATOR CERTIFICATION

I hereby certify the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: *Gay E. Miller*  
Date: 12-27-06  
Printed Name: *Agent, Parallel Petrol. Company*

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.

October 12, 2006

Date of Survey  
Signature & Seal of Professional Surveyor: *KMT*

W.O. Num. 2006-1002

Certificate No. MACON McDONALD 12185



| Coordinate Table       |                  |
|------------------------|------------------|
| Description            | Plane Coordinate |
| Swale 1525-16 State #1 | X = 462,579.7    |
| Surface Location       | Y = 732,271.0    |
| Swale 1525-16 State #1 | X = 463,031.5    |
| Penetration Point      | Y = 732,276.2    |
| Swale 1525-16 State #1 | X = 466,997.4    |
| Bottom Hole Location   | Y = 732,322.7    |

DISTRICT I  
1622 N. French Dr., Hobbs, NM 88240

DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

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AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

|               |   |                                |
|---------------|---|--------------------------------|
| API Number    | Pool Code<br>97489                              | Pool Name<br>Wildcat; Wolfcamp |
| Property Code | Property Name<br>SWALE 1525-16 STATE            | Well Number<br>2               |
| OGRID No.     | Operator Name<br>PARALLEL PETROLEUM CORPORATION | Elevation<br>3498'             |

Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| M             | 16      | 15 S     | 25 E  |         | 760           | SOUTH            | 190           | WEST           | CHAVES |

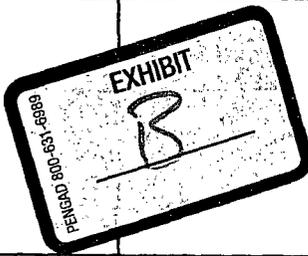
Bottom Hole Location If Different From Surface

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| P             | 16      | 15 S     | 25 E  |         | 760           | SOUTH            | 660           | EAST           | CHAVES |

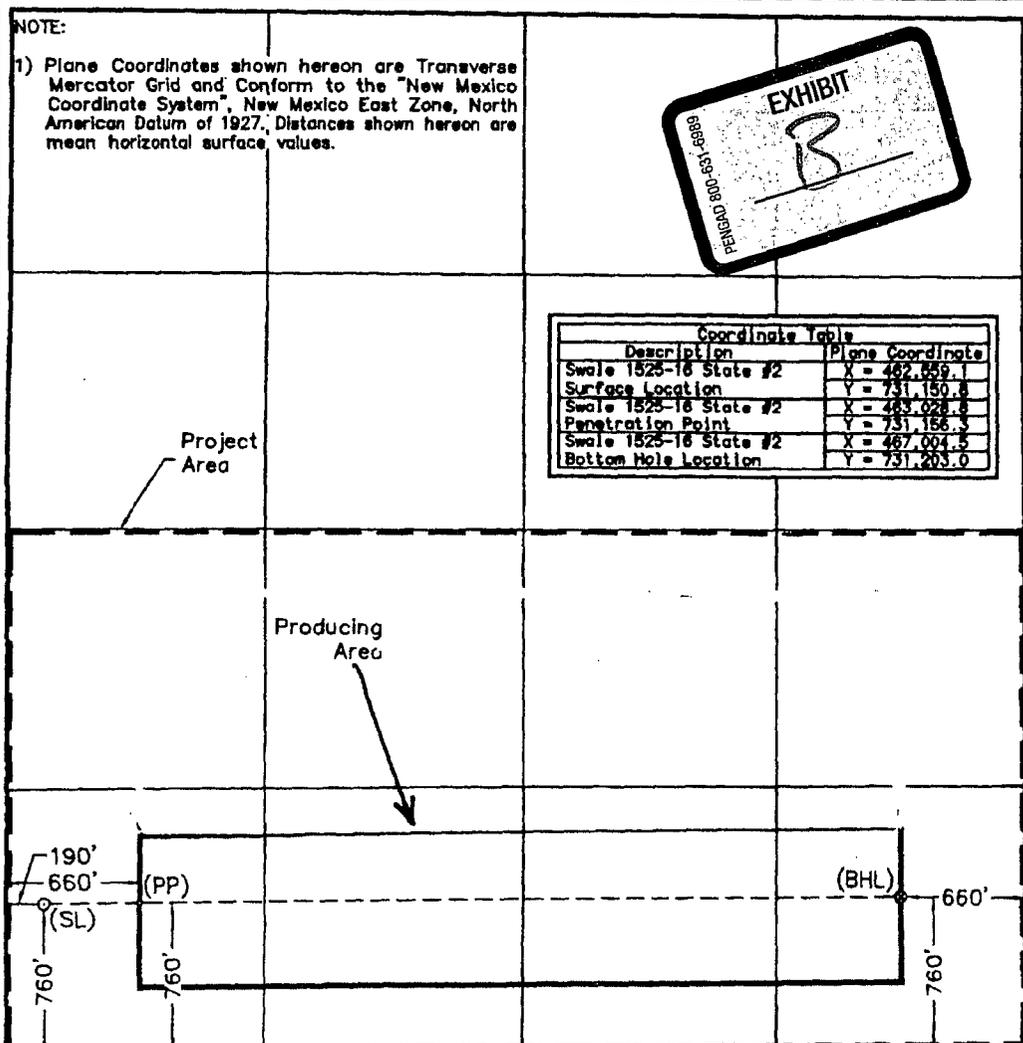
|                        |                 |                    |           |
|------------------------|-----------------|--------------------|-----------|
| Dedicated Acres<br>32e | Joint or Infill | Consolidation Code | Order No. |
|------------------------|-----------------|--------------------|-----------|

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

NOTE:  
1) Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927. Distances shown hereon are mean horizontal surface values.



| Coordinate Table       |                  |
|------------------------|------------------|
| Description            | Plane Coordinate |
| Swale 1525-16 State #2 | X = 482,559.1    |
| Surface Location       | Y = 731,150.8    |
| Swale 1525-16 State #2 | X = 483,028.8    |
| Penetration Point      | Y = 731,156.3    |
| Swale 1525-16 State #2 | X = 487,004.5    |
| Bottom Hole Location   | Y = 731,203.0    |



**OPERATOR CERTIFICATION**

I hereby certify the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interests in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

  
 Signature Date  
4-9-07

  
 Printed Name

---

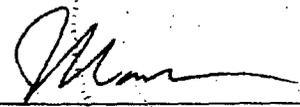
**SURVEYOR CERTIFICATION**

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.

October 12, 2006

Date of Survey KMT

Signature & Seal of Professional Surveyor

  
 W.O. Num. 2006-1003

Certificate No. **MACON McDONALD** 12185



**Parallel Petroleum Corporation's Notice List  
For Swale 1525-16 State Com Wells No. 1 and 2**

- Tract 1: N/2 of Sec 15 (Undrilled)
- (a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
  - (c) CMW Interests, Inc.
- Tract 2: S/2 of Sec 15 (Undrilled)
- (a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
- Tract 3: N/2 of Sec 16 (Undrilled)
- (a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
- Tract 4: N/2 of Sec 17 (Undrilled)
- (a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
  - (d) CMW Interests, Inc. (W/2E/2)
  - (e) Egler Exploration, Inc.(W/2E/2)
- Tract 5: S/2 of Sec 17 (Drilled)
- (a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
  - (c) CMW Interests, Inc. (W/2E/2)
  - (d) Egler Exploration, Inc. (W/2E/2)
- Tract 6: N/2 of Sec 20 (Undrilled)
- (a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
- Tract 7: N/2 of Sec 21 (Undrilled)
- a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
- Tracts 8: N/2 of Sec 22 (Undrilled)
- (a) Parallel and
  - (b) Capstone Oil & Gas Company, L.P.
  - (c) CMW Interests, Inc. (E/2NE/4)
  - (d) Elger Exploration, Inc. (E/2NE/4)
  - (e) Unleased mineral interest owners:
    - a. A. Gayle Hudgens. a single woman  
P.O. Box 25561  
Dallas, TX 75225

- b. Sacramento Partners Limited Partnership  
105 South Fourth Street  
Artesia, NM 88210
  
- c. Spiral, Inc.  
P.O. Box 1933  
(address)
  
- e. Sharbro Oil Ltd. Co.  
P.O. Box 829  
Artesia, NM 88211
  
- f. Southwest Resources, Inc.  
1111 West Country Club Road  
Roswell, NM 88201
  
- g. Lobos Energy Partners, LLC  
3817 NW Expressway, Suite 950  
Oklahoma City, OK 73112
  
- h. Estate of W. E. Flint, dec.  
Dona Ana County, NM PC #5171  
Elaine B. Flint, widow and exec.  
2125 Thomas Dr.  
Las Cruces, NM 88001
  
- i. Margaret Louise Doyle & John Steven Doyle,  
3747 - 66 Campana South  
Oceanside, CA 92054
  
- j. Martin Yates III  
c/o Myco Industries, Inc. P. o. Box 840  
Artesia NM 88211

**KELLAHIN & KELLAHIN**  
**Attorney at Law**

**W. THOMAS KELLAHIN**  
706 GONZALES ROAD  
SANTA FE, NEW MEXICO 87501

TELEPHONE 505-982-4285  
FACSIMILE 505-982-2047  
TKELLAHIN@COMCAST.NET

August 17, 2007

**CERTIFIED MAIL-RETURN RECEIPT REQUESTED**

**NOTICE OF THE FOLLOWING NEW MEXICO OIL CONSERVATION  
DIVISION ADMINISTRATIVE CASE:**

*OFFSETTING INTEREST OWNERS:*

**Re:** Administrative Application of Parallel Petroleum Corporation  
for authorization to simultaneously dedicate  
a standard gas spacing and proration unit in the  
Wolfcamp formation to two horizontal wellbores,  
including an exemption to the well density requirements  
of Rule 104.D, Chaves County, New Mexico

Dear interest owner:

On behalf of Parallel Petroleum Corporation please find enclosed a copy of  
its referenced administrative application. This notice is based upon records that  
indicate that you have an interest in adjoining and offsetting tracts and are parties  
affected by this application

If you have no objection, then there is nothing for you to do. If you are  
willing to waiver objection, please sign this letter as indicated and return it to me.  
However, should you have any objection to the Division approving this  
application, then it will be necessary for you to file a written objection with the  
New Mexico Oil Conservation Division, 1220 South Saint Francis Drive, Santa  
Fe, New Mexico 87505 within twenty (20) days of the date of this letter. Failure  
to file a timely objection will preclude you from objecting at a later date.

Very truly yours,



W. Thomas Kellahin

**WAIVER OF OBJECTION:**

By: \_\_\_\_\_ with authority for  
and on behalf of \_\_\_\_\_  
Date: \_\_\_\_\_



**KELLAHIN & KELLAHIN**  
**Attorney at Law**

**W. THOMAS KELLAHIN**  
706 GONZALES ROAD  
SANTA FE, NEW MEXICO 87501

TELEPHONE 505-982-4285  
FACSIMILE 505-982-2047  
TKELLAHIN@COMCAST.NET

August 17, 2007

**HAND DELIVERED**

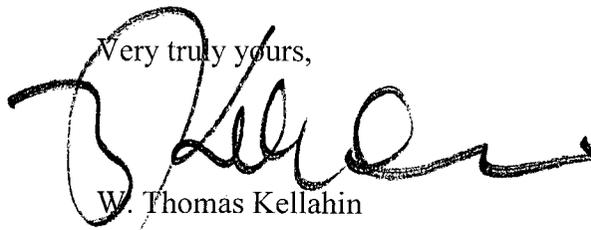
Mr. Mark Fesmire, P.E., Director  
Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

Re: Administrative Application of Parallel Petroleum Corporation  
for authorization to simultaneously dedicate  
a standard gas spacing and proration unit in the  
Wolfcamp formation to two horizontal wellbores,  
including an exception to the well density requirement  
of Division Rule 104.D, Chaves County, New Mexico  
S/2 Section 16, T15S, R25E  
Swale 1525-16 State Well No. 1 and 2

Dear Ms. Fesmire:

On behalf of Parallel Petroleum Corporation, please find enclosed our  
referenced administrative application.

Very truly yours,



W. Thomas Kellahin

cc: Parallel Petroleum Corporation  
Attn: Mike Gray

RECEIVED  
2007 AUG 17 AM 11 53

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

**IN THE MATTER OF THE ADMINISTRATIVE APPLICATION  
OF PARALLEL PETROLEUM CORPORATION FOR  
AUTHORIZATION TO SIMULTANEOUSLY DEDICATED  
A STANDARD SPACING AND PRORATION UNIT IN THE  
WOLFCAMP FORMATION TO TWO HORIZONTAL WELLS  
INCLUDING AN EXEMPTION TO THE WELL DENSITY  
REQUIREMENT OF RULE 104.D,  
CHAVES COUNTY, NEW MEXICO.**

ADMINISTRATIVE APPLICATION

Parallel Petroleum Corporation ("Parallel") by its attorneys, Kellahin & Kellahin, seeks approval to simultaneously dedicate a standard gas spacing and proration unit in the Wolfcamp formation to two horizontal wellbores including an exemption to the well density requirements of Rule 104.D, Chaves County, New Mexico. Applicant seeks authorization to dedicate a standard 320-acre spacing and proration unit comprised of the S/2 of Section 16, Township 15 South, Range 25East, Chaves County, New Mexico in the Wolfcamp formation to the following two wells:

(a) The Swale 1525-16 State Well No 2 (API #3000563924) to be drilled at an unorthodox surface location 760 feet FSL and 190 feet FWL (Unit M) and then to penetrate the Wolfcamp formation within the standard producing area window at a standard subsurface location approximately 660 feet FWL and 760 feet FSL (Unit M) and then drilled horizontally in an easterly direction staying within the producing area not less than 660 feet from each of the end and side boundaries of this spacing unit and ending at a standard bottom hole location 760 feet FSL and 660 feet FEL

(b) The Swale 1525-16 State Well No. 1 (API #3000563886) that has been drilled at an unorthodox surface location 1880 feet FSL and 208 feet FWL (Unit L) and penetrated the Wolfcamp formation within the standard producing area window at a standard subsurface location approximately 660 feet FWL and 660 feet FSL (Unit L) and then was drilled horizontally in an easterly direction staying within the producing area not less than 660 feet from each of the end and side boundaries of this spacing unit and ending at a standard bottom hole location 1880 feet FSL and 660 feet FEL

In support of its application, Parallel states:

- (1) Parallel is the current operator of the Swale 1525-16 State Well No. 1 (API #3000563886) that has been drilled and completed as a horizontal well in the N/2S/2 of Section 16, T15S, R25E. **See Exhibit "A" attached**
- (2) Parallel has obtained approval of its APD to drill second horizontal well in the S/2S/2 of Section 16, T15S, R25E being the Swale 1525-16 Well No. 2 (API #3000563924). **See Exhibit "B" attached**
- (3) Division Rule 111 provides for the rules and regulations of the drilling of directional wells and by definition includes "horizontal" wells but apparently does not limited the number of horizontal wells that can be drilled within a Project Area. Instead Rule 111 refers to a project area "that is enclosed by the outer boundaries of a spacing unit or a combination of complete spacing units," and incorporates by reference Rule 104 to define a "spacing unit"
- (4) Division Rule 104.C (2) allows two wells in a 320-acre spacing unit with each well located in a different 160-tract of the 320-acre spacing unit. This rule appears not to specifically address horizontal wells.
- (5) Division Rule 104.D (3) States: "number of wells per spacing unit. Exceptions to the provisions of statewide rules or special pool orders concerning the number of wells allowed per spacing unit may be permitted by the Director only after notice and opportunity for hearing. Notice shall be given to those "affected parsons" defined by Rule 1207.A (2)."
- (6) The Division Legal Examiner, David K. Brooks, has advised the notice for this type of case, "affected parties" are: (a) all each operator of an adjoining and offsetting 320-acre drilled or undrilled spacing units (direct or diagonal offsets) (b) if undrilled, then to the working interest owners and unleased mineral owners, (c) if applicant is also the offsetting operator, then to its working interest owners, (d) if applicant is the offsetting operator and the only working interest owners, then to its lessors, (e) if the offsetting section has no spacing unit, then the applicant and presume the orientation closest to the subject spacing unit.

- (7) Parallel has provided written notice of hearing to all “affected parties, including those listed on the attached located map and index. **Exhibit “C”** and the notice letter attached as **Exhibit “D”**
- (8) Parallel’s enclosed exhibits demonstrate that because of the low permeability of the Wolfcamp formation in this area:
- a. the actual area being depleted by the first horizontal well is generally limited to the north half of this spacing unit, being the N/2S/4 of Section 16, and it not effectively recovery either the gas underlying the S/2 of Section 16 or adversely affecting the correlative rights of the offsetting interest owners.
  - b. A second horizontal well is needed by the south half of this spacing unit, being the S/2S/2 of Section 16, in order to provide a opportunity to recovery gas that might otherwise not be recovered under the S/2 of Section 16 and in doing so will not adversely affect the correlative rights of the offsetting interest owners.
- (9) Exhibit “E” is a written summary prepare by Parallel’s petroleum geologist and petroleum engineer with supporting exhibits:
- (a) paleogeography of the Permian basin---see Exhibit “F”
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  - (c) Cross Section & Trap Diagram---see Exhibit H
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  - (g) Gas Analysis from Foreso 152506 State E-1 well,see Exhibit L
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  - (i) Three well cross-section (Large display)—see Exhibit N
- (10) These exhibit are basically the same data presented to the Division’s at a meeting on February 13, 2007 attended by members of the industry and the Division Chief Engineer, Richard Ezeanyim, and Division’s attorney, David K. Brooks.
- (11) Approval of this application will not impair the correlative rights of any other interest owner in the area and will afford Parallel the opportunity to utilize two horizontal wells to produce the Wolfcamp formation gas reserves from this GPU.

(12) Approval of this application will be in the best interests of conversations, the prevention of waste and the protection of correlative rights.

WHEREFORE, Parallel Petroleum Corporation requests that this the Oil Conservation Division enter its order granting an exception to the well density requirements of Rule 104.B and authorize the simultaneous dedication of two horizontal wells within this spacing unit.

RESPECTFULLY SUBMITTED:

A handwritten signature in black ink, appearing to read 'W. Thomas Kellahin', written over the printed name.

W. THOMAS KELLAHIN  
KELLAHIN & KELLAHIN  
706 Gonzales Road  
Santa Fe, New Mexico 87501  
(505) 982-4285

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Artesia, NM 87410

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

**OIL CONSERVATION DIVISION**  
1220 South St. Francis  
Santa Fe, NM 87505

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Revised October 12, 2005  
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AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

|               |  |                                       |
|---------------|--|---------------------------------------|
| API Number    | Pool Code<br><b>97489</b>                              | Pool Name<br><b>Wildcat, Wolfcamp</b> |
| Property Code | Property Name<br><b>SWALE 1525-16 STATE</b>            | Well Number<br><b>1</b>               |
| OGRID No.     | Operator Name<br><b>PARALLEL PETROLEUM CORPORATION</b> | Elevation<br><b>3501'</b>             |

**Surface Location**

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| L             | 16      | 15 S     | 25 E  |         | 1880'         | SOUTH            | 208'          | WEST           | CHAVES |

**Bottom Hole Location If Different From Surface**

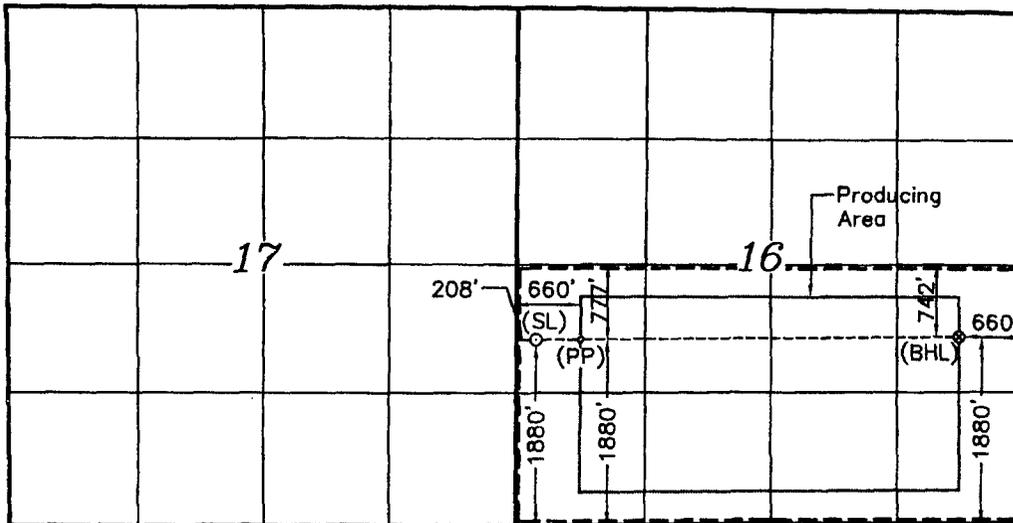
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| I             | 16      | 15 S     | 25 E  |         | 1880'         | SOUTH            | 660'          | EAST           | CHAVES |

|                               |                 |                    |           |
|-------------------------------|-----------------|--------------------|-----------|
| Dedicated Acres<br><b>320</b> | Joint or Infill | Consolidation Code | Order No. |
|-------------------------------|-----------------|--------------------|-----------|

**NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION**

NOTE:

1) Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927. Distances shown hereon are mean horizontal surface values.



**OPERATOR CERTIFICATION**

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: *[Signature]* Date: **12-27-06**  
Printed Name: **Gay E. Miller**  
**Agent, Parallel Petroleum Company**

**SURVEYOR CERTIFICATION**

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.

October 12, 2006  
Date of Survey  
Signature & Seal of Professional Surveyor **KMT**

*[Signature]*

W.O. Num. 2006-1002

Certificate No. **MACON McDONALD 12185**



| Coordinate Table       |                  |
|------------------------|------------------|
| Description            | Plane Coordinate |
| Swale 1525-16 State #1 | X = 462,579.7    |
| Surface Location       | Y = 732,271.0    |
| Swale 1525-16 State #1 | X = 463,031.5    |
| Penetration Point      | Y = 732,276.2    |
| Swale 1525-16 State #1 | X = 466,997.4    |
| Bottom Hole Location   | Y = 732,322.7    |

DISTRICT I  
1825 N. French Dr., Hobbs, NM 88240

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 86210

OIL CONSERVATION DIVISION  
1220 South St. Frances Dr.  
Santa Fe, NM 87505

DISTRICT III  
1000 Rio Brazos Rd., Asteo, NM 87410

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

|               |   |                                |
|---------------|---|--------------------------------|
| API Number    | Pool Code<br>97489                              | Pool Name<br>Wildcat; Woffcamp |
| Property Code | Property Name<br>SWALE 1525-16 STATE            | Well Number<br>2               |
| OGRID No.     | Operator Name<br>PARALLEL PETROLEUM CORPORATION | Elevation<br>3498'             |

Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| M             | 16      | 15 S     | 25 E  |         | 760           | SOUTH            | 190           | WEST           | CHAVES |

Bottom Hole Location If Different From Surface

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| P             | 16      | 15 S     | 25 E  |         | 760           | SOUTH            | 660           | EAST           | CHAVES |

|                        |                 |                    |           |
|------------------------|-----------------|--------------------|-----------|
| Dedicated Acres<br>32e | Joint or Infill | Consolidation Code | Order No. |
|------------------------|-----------------|--------------------|-----------|

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

NOTE:  
1) Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927. Distances shown hereon are mean horizontal surface values.

**EXHIBIT**  
B

| Description            | Plane Coordinate |
|------------------------|------------------|
| Swale 1525-16 State #2 | X = 482,559.1    |
| Surface Location       | Y = 731,150.8    |
| Swale 1525-16 State #2 | X = 483,028.8    |
| Penetration Point      | Y = 731,156.3    |
| Swale 1525-16 State #2 | X = 487,004.5    |
| Bottom Hole Location   | Y = 731,203.0    |

Project Area

Producing Area

**OPERATOR CERTIFICATION**

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or retained mineral interests in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date  
 Deane Durham 4-9-07  
 Printed Name

---

**SURVEYOR CERTIFICATION**

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.

October 12, 2006  
 Date of Survey KMT  
 Signature & Seal of Professional Surveyor  
  
 W.O. Num. 2006-1003  
 Certificate No. MACON McDONALD 12185

MAP

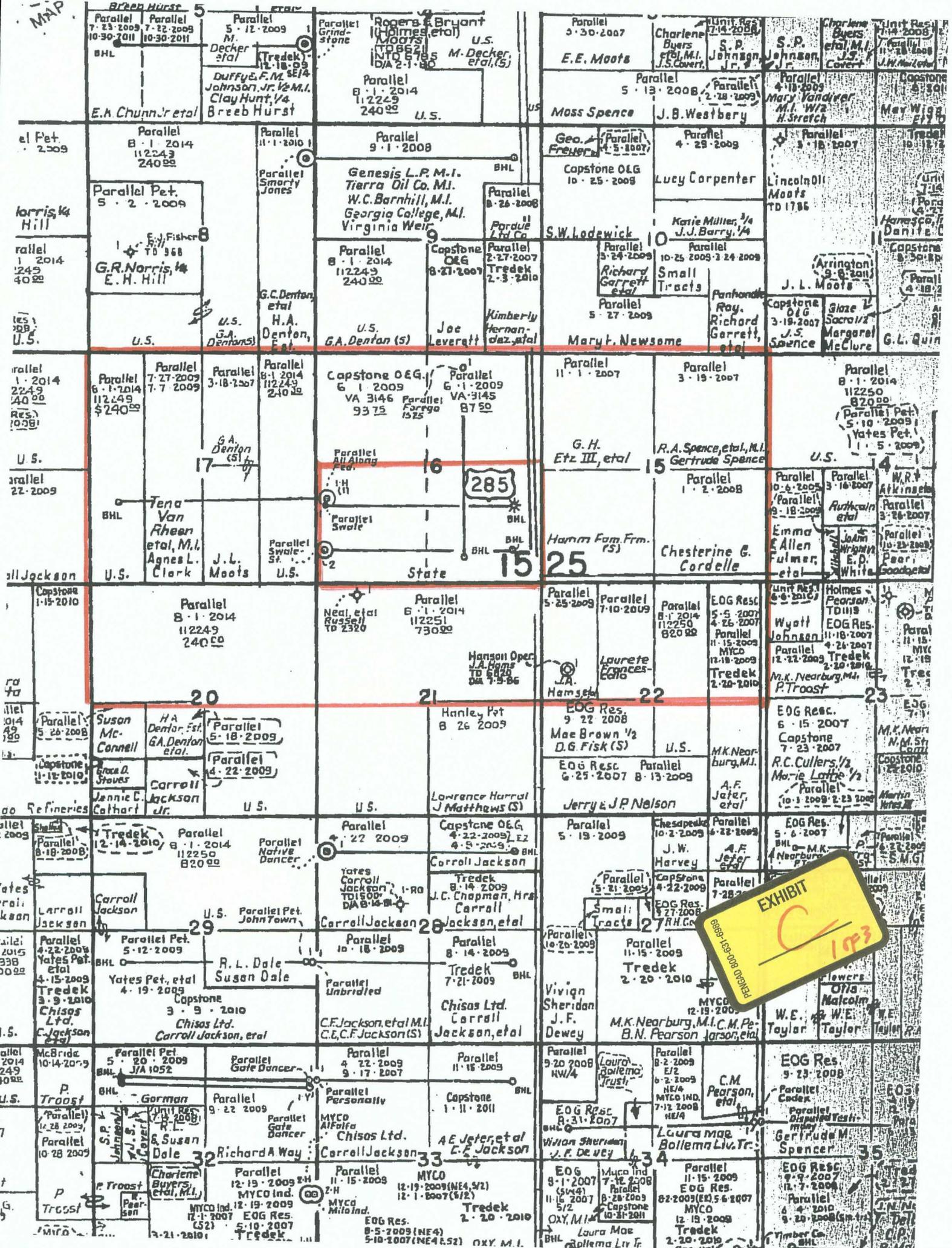


EXHIBIT  
C  
193

**Parallel Petroleum Corporation's Notice List  
For Swale 1525-16 State Com Wells No. 1 and 2**

Tract 1: N/2 of Sec 15 (Undrilled)

- (a) Parallel and
- (b) Capstone Oil & Gas Company, L.P.
- (c) CMW Interests, Inc.

Tract 2: S/2 of Sec 15 (Undrilled)

- (a) Parallel and
- (b) Capstone Oil & Gas Company, L.P.

Tract 3: N/2 of Sec 16 (Undrilled)

- (a) Parallel and
- (b) Capstone Oil & Gas Company, L.P.

Tract 4: N/2 of Sec 17 (Undrilled)

- (a) Parallel and
- (b) Capstone Oil & Gas Company, L.P.
- (d) CMW Interests, Inc. (W/2E/2)
- (e) Egler Exploration, Inc.(W/2E/2)

Tract 5: S/2 of Sec 17 (Drilled)

- (a) Parallel and
- (b) Capstone Oil & Gas Company, L.P.
- (c) CMW Interests, Inc. (W/2E/2)
- (d) Egler Exploration, Inc. (W/2E/2)

Tract 6: N/2 of Sec 20 (Undrilled)

- (a) Parallel and
- (b) Capstone Oil & Gas Company, L.P.

Tract 7: N/2 of Sec 21 (Undrilled)

- a) Parallel and
- (b) Capstone Oil & Gas Company, L.P.

Tracts 8: N/2 of Sec 22 (Undrilled)

- (a) Parallel and
- (b) Capstone Oil & Gas Company, L.P.
- (c) CMW Interests, Inc. (E/2NE/4)
- (d) Elger Exploration, Inc. (E/2NE/4)
- (e) Unleased mineral interest owners:
  - a. A. Gayle Hudgens. a single woman  
P.O. Box 25561  
Dallas, TX 75225

- b. Sacramento Partners Limited Partnership  
105 South Fourth Street  
Artesia. NM 88210
  
- c. Spiral, Inc.  
P.O. Box 1933  
(address)
  
- e. Sharbro Oil Ltd. Co.  
P.O. Box 829  
Artesia, NM 88211
  
- f. Southwest Resources, Inc.  
1111 West Country Club Road  
Roswell, NM 88201
  
- g. Lobos Energy Partners, LLC  
3817 NW Expressway, Suite 950  
Oklahoma City, OK 73112
  
- h. Estate of W. E. Flint, dec.  
Dona Ana County, NM PC #5171  
Elaine B. Flint, widow and exec.  
2125 Thomas Dr.  
Las Cruces, NM 88001
  
- i. Margaret Louise Doyle & John Steven Doyle,  
3747 - 66 Campana South  
Oceanside, CA 92054
  
- j. Martin Yates III  
c/o Myco Industries, Inc. P. o. Box 840  
Artesia NM 88211

**KELLAHIN & KELLAHIN**  
**Attorney at Law**

**W. THOMAS KELLAHIN**  
**706 GONZALES ROAD**  
**SANTA FE, NEW MEXICO 87501**

**TELEPHONE 505-982-4285**  
**FACSIMILE 505-982-2047**  
**TKELLAHIN@COMCAST.NET**

August 17, 2007

**CERTIFIED MAIL-RETURN RECEIPT REQUESTED**

**NOTICE OF THE FOLLOWING NEW MEXICO OIL CONSERVATION  
DIVISION ADMINISTRATIVE CASE:**

*OFFSETTING INTEREST OWNERS:*

**Re:** Administrative Application of Parallel Petroleum Corporation  
for authorization to simultaneously dedicate  
a standard gas spacing and proration unit in the  
Wolfcamp formation to two horizontal wellbores,  
including an exemption to the well density requirements  
of Rule 104.D, Chaves County, New Mexico

Dear interest owner:

On behalf of Parallel Petroleum Corporation please find enclosed a copy of  
its referenced administrative application. This notice is based upon records that  
indicate that you have an interest in adjoining and offsetting tracts and are parties  
affected by this application

If you have no objection, then there is nothing for you to do. If you are  
willing to waiver objection, please sign this letter as indicated and return it to me.  
However, should you have any objection to the Division approving this  
application, then it will be necessary for you to file a written objection with the  
New Mexico Oil Conservation Division, 1220 South Saint Francis Drive, Santa  
Fe, New Mexico 87505 within twenty (20) days of the date of this letter. Failure  
to file a timely objection will preclude you from objecting at a later date.

Very truly yours,



W. Thomas Kellahin

**WAIVER OF OBJECTION:**

By: \_\_\_\_\_ with authority for  
and on behalf of \_\_\_\_\_  
Date: \_\_\_\_\_



**Wolfcamp Reservoir Development**  
**Section 16, T15S, R25E**  
**Chaves Co., New Mexico**  
**Case # 13965**

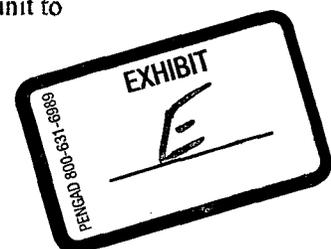
This Wolfcamp gas reservoir is interpreted as the sabkha shelf model along the Northwest carbonate platform. The Wolfcamp reservoir is contained within the restricted lagoon-platform facies belt where dolomitization and fracturing has occurred to enhance the porosity and in deep enough water so that evaporates are not prevalent to occlude porosity. Up-dip, north to northwest of the reservoir are terrestrial deposits which do include evaporates that cement the porosity and act as a seal for the Wolfcamp stratigraphic trap. Down-dip, south to southeast, of the dolomitized Wolfcamp reservoir facies belt are tight limestones that do not contain the reservoir development.

There are three alternating depositional cycles. The matrix porosity is comprised of a dolomitized fusulinid wackestone-packstone overlain by a burrowed lime mud overlain by a lagoonal shale which is the maximum flooding event. The reservoir also contains natural fractures. The principal maximum stress direction is predominantly north-south. The formation dips to the east-southeast at 1 degree. The average gross thickness of the Wolfcamp varies from 25'-50' with an average net thickness of a few feet to 25' and an average porosity less than 8%.

Planned spacing between horizontal laterals in the south-half of section 16 is 1160'. The Swale 1525-16 State #1 has been drilled in the north-half of the south-half and actual footages for the penetration point and total depth within the Wolfcamp pay are:  
Surface Location @ 1880' FSL and 208' FWL, Section 16, T15S, R25E  
Penetration Point @ 5183' measured depth, 1850' FSL and 751' FWL  
Bottom-Hole Location @ 8924' measured depth, 1906' FSL and 790' FEL  
Perforations are from top perf at 5290' measured depth to bottom perf at 8822' measured depth. The Swale 1525-16 State #2 will be in the south-half of the south-half, and planned surface, penetration point and total depth are:  
Surface Location @ 760' FSL and 190' FWL, Section 16, T15S, R25E  
Penetration Point @ 760' FSL and 660' FWL, Bottom-Hole Location @ 760' FSL and 660' FEL

Recommended fracture half-lengths for this formation in the area are 1,100' in order to drain 160 acres. This would require 4 horizontal wells in parallel to drain a 640-acre section. This 1,100' fractured half-length yields an approximate proppant-fractured half-length of 500-600' and an effective producible half-length of 300-400'. Microseismic monitoring data from wells in the area fractured using Parallel Petroleum's preferred stimulation method show a fractured half-length of 900' and therefore the estimated producible half-length estimate is shorter than the recommended 300-400'. An optimistic estimate of 300' producible half-length of both the Swale #1 and the Swale #2 would create an unproductive interval along the length of and between the laterals of 560'.

In conclusion, given: low permeability of the dolomite (< .01 - .02 md), small net pay interval (< 20' in section 16) and low porosity of the interval (< 3% - 9% - ~ 7% in section 16), the Wolfcamp formation should be produced using 2 parallel horizontal wells per 320-acre unit to efficiently drain the unit.



# WOLFCAMPIAN (PERMIAN) PALEOGEOGRAPHY OF THE PERMIAN BASIN

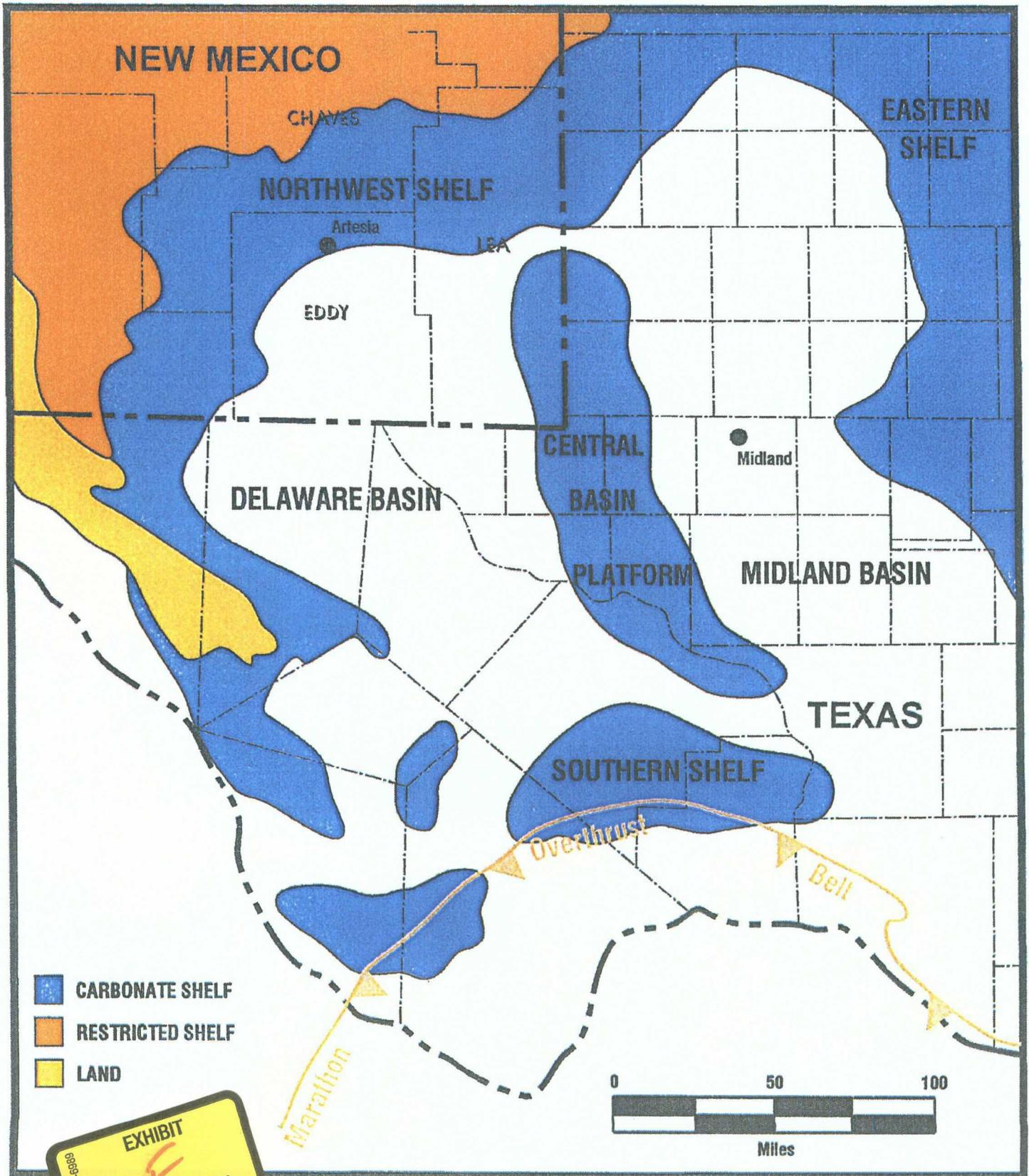


EXHIBIT  
**F**  
PERMIAN BASIN

Wolfcamp Reservoir Development  
Section 16, T15S, R25E  
Chaves Co., New Mexico  
Case # 13965

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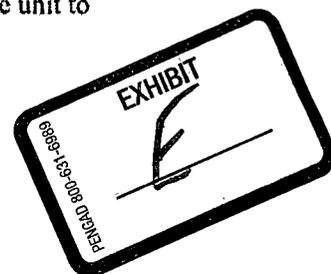
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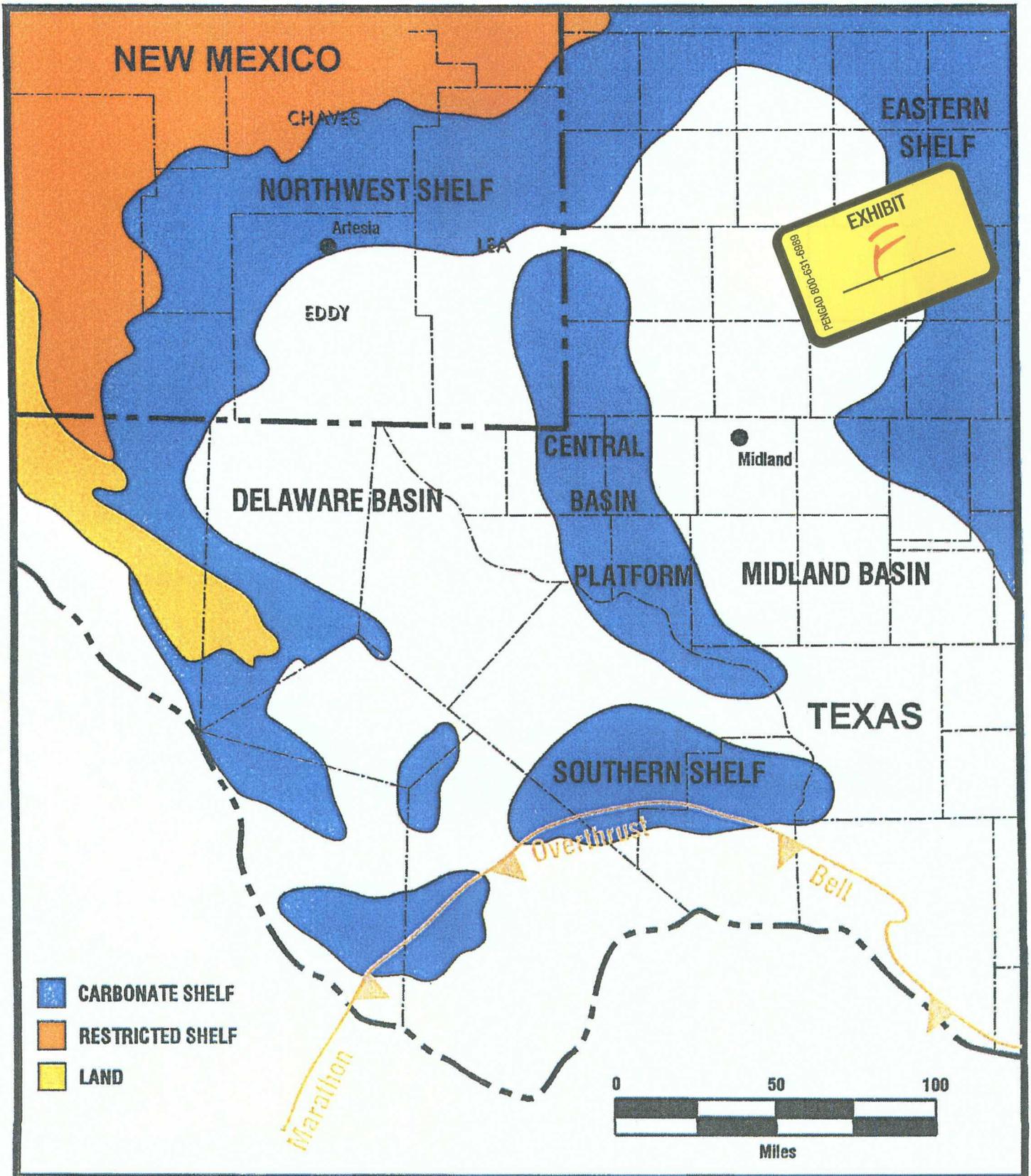
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# WOLFCAMPIAN (PERMIAN) PALEOGEOGRAPHY OF THE PERMIAN BASIN



# Northwest Shelf Stratigraphic Chart

| Age                          |                 | Unit Name   | HC's         | Approx. Depth                |     |
|------------------------------|-----------------|-------------|--------------|------------------------------|-----|
| Permian<br>289-248 MYA       | Ochoan          | Rustler     |              | Top Reservoir<br>~5000-5500' |     |
|                              |                 | Salado      |              |                              |     |
|                              | Guadalupian     | Eumont      | Tansill      |                              |     |
|                              |                 |             | Yates        |                              | ☉ ☀ |
|                              |                 |             | Seven Rivers |                              | ☉ ☀ |
|                              |                 |             | Queen        |                              | ☉ ☀ |
|                              |                 | Grayburg    | ☉ ☀          |                              |     |
|                              |                 | San Andres  | ☉            |                              |     |
|                              |                 | Glorieta    | ☉            |                              |     |
|                              | Leonardian      | Yeso        | ☉ ☀          |                              |     |
|                              |                 | Abo         | ☉ ☀          |                              |     |
| Wolfcampian                  | <b>Wolfcamp</b> | ☉ ☀         |              |                              |     |
| Pennsylvanian<br>289-320 MYA |                 | Cisco       |              |                              |     |
|                              |                 | Canyon      |              |                              |     |
|                              |                 | Strawn      | ☉ ☀          |                              |     |
|                              |                 | Atoka       | ☀            |                              |     |
|                              |                 | Morrow      | ☉ ☀          |                              |     |
| Mississippian<br>320-363 MYA |                 | Miss. Lime  | ☉ ☀          |                              |     |
|                              |                 | Woodford    |              |                              |     |
| Devonian<br>409-363 MYA      |                 | Devonian    | ☀            |                              |     |
| Silurian<br>439-409 MYA      |                 | U. Silurian |              |                              |     |
|                              |                 | Fusselman   | ☉            |                              |     |
| Ordovician<br>510-439 MYA    |                 | Montoya     | ☉            |                              |     |
|                              | Simpson         | McKee       | ☉ ☀          |                              |     |
|                              |                 | Waddell     |              |                              |     |
|                              |                 | Connell     |              |                              |     |
|                              |                 | Joins       |              |                              |     |
|                              |                 | Ellenburger | ☀            |                              |     |
| Cambrian<br>510-570 MYA      |                 |             |              |                              |     |
| Pre-Cambrian<br>>570 MYA     |                 |             |              |                              |     |

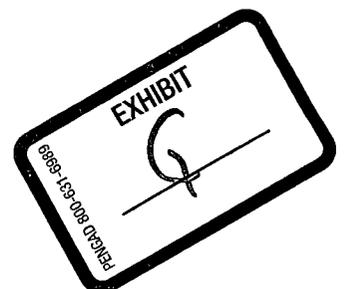
## LEGEND



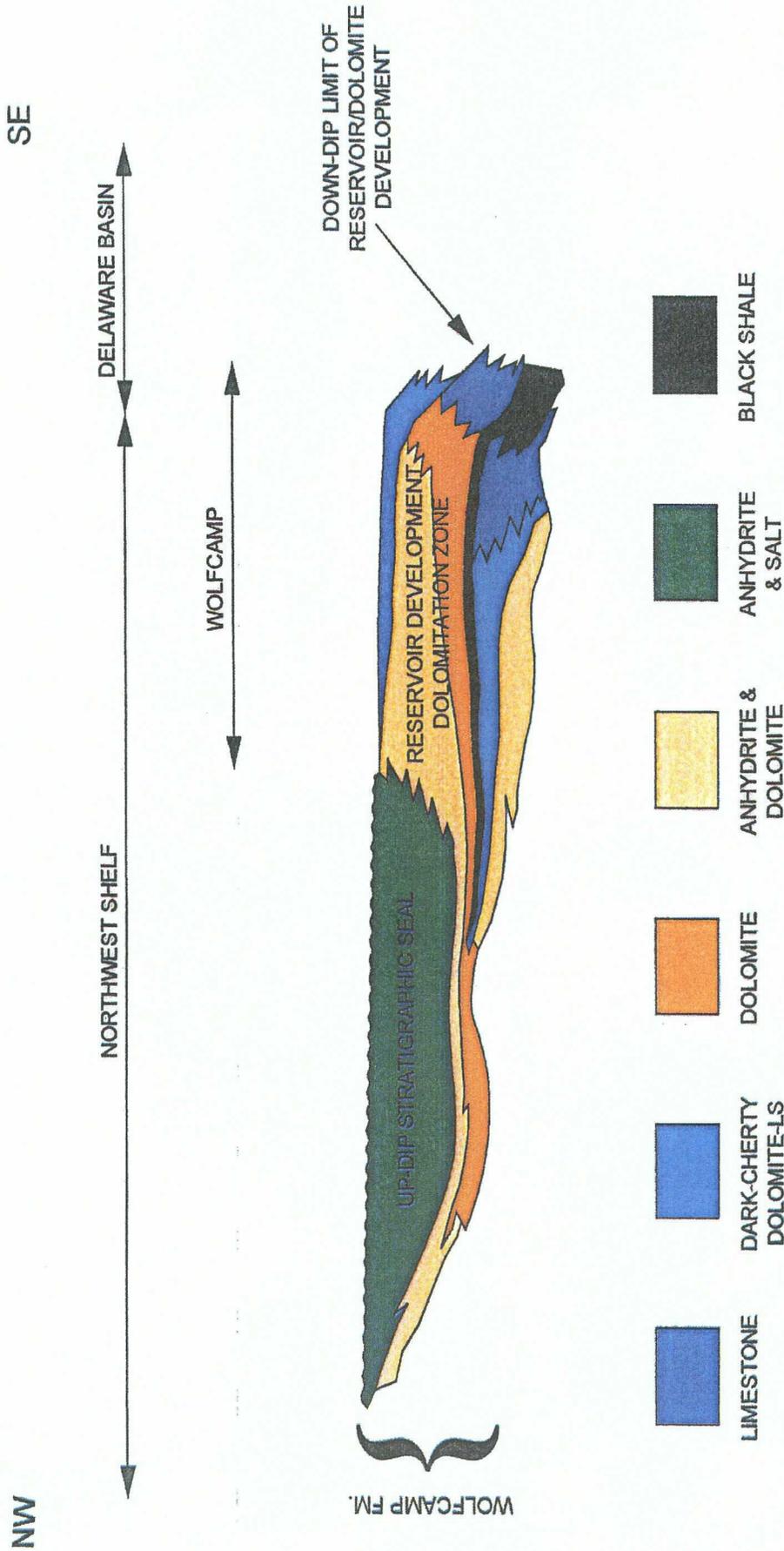
Current Active Plays

☉ Oil Producing Zones

☀ Gas Producing Zones



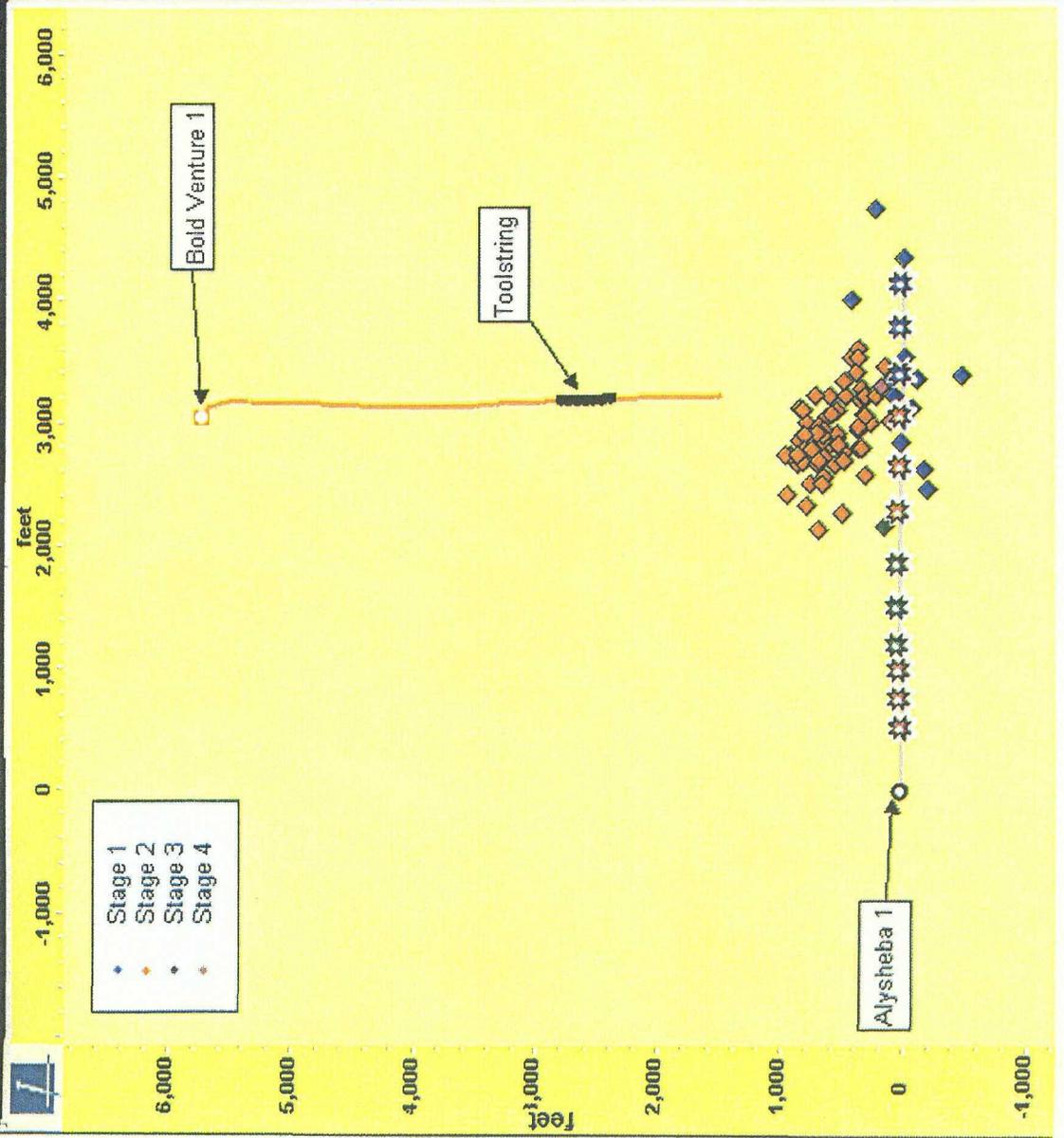
# CROSS SECTION & TRAP DIAGRAM



Northwest-southeast cross section across the Northwest Shelf/Delaware Basin transition. Rock types are differentiated illustrating the trap developed within the Wolfcamp reservoir. The pervasive evaporite deposited in the northwest act as a stratigraphic seal for the dolomitized reservoir developed down-dip. Further down structure the reservoir is limited by the lack of dolomite within tighter limestone and shale deposits.



# Alysheba No. 1 – Map View



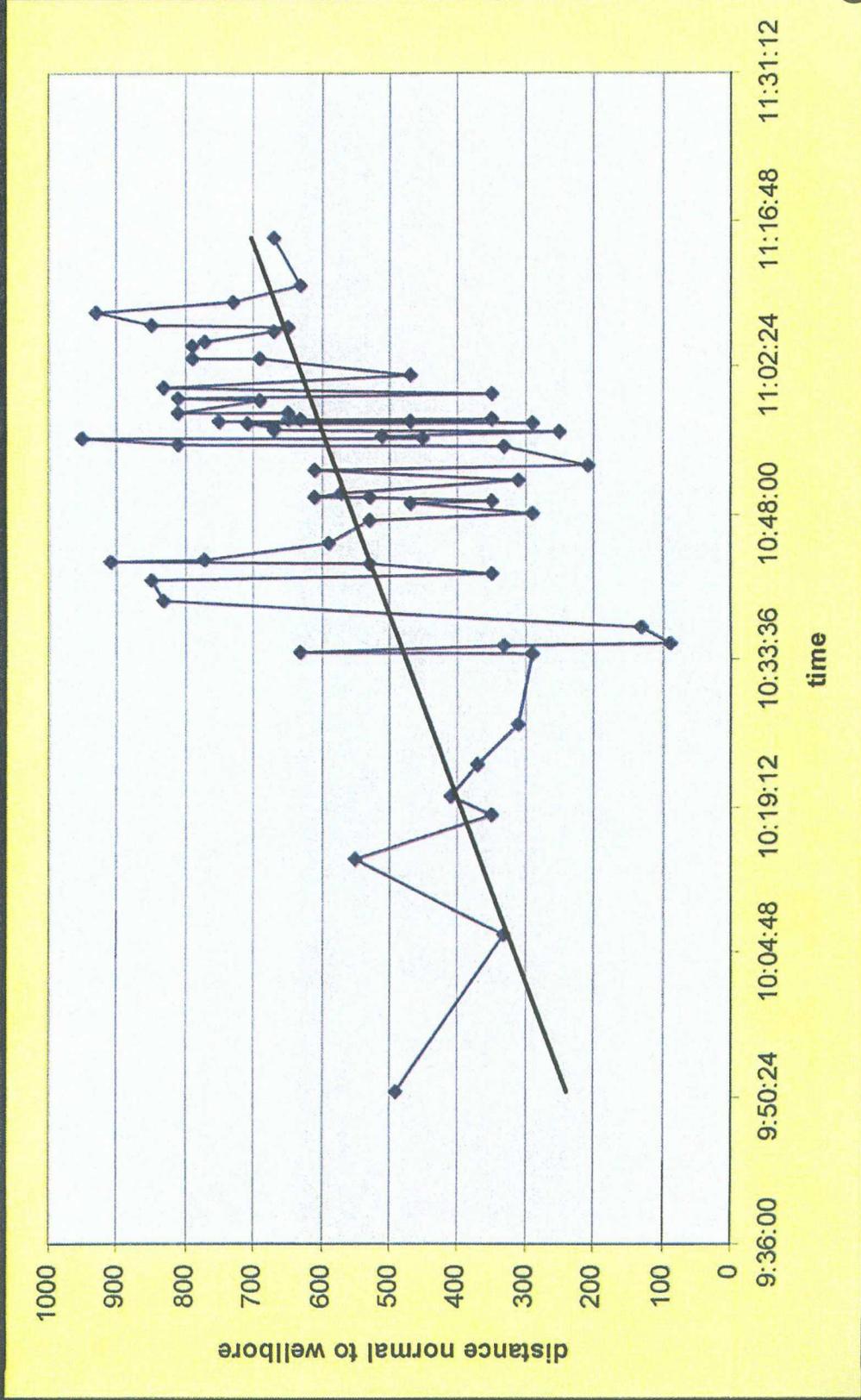
- Fracture Azimuths: Difficult to determine, possibly N-S.
- Fracture Half-Lengths: ~900' (measured North from wellbore)
- Most of the microseismic events were recorded during Stage 2. Only one event was detected during both Stages 3 and 4.
- Unclear why Stage 2 produced the majority of the events; perhaps interaction with faulting or fracture swarm near wellbore?

EXHIBIT

PERM 000-631-6989

Pin

# Alysheba No. 1 Stage 2 - Map View



Pinnac

## Conclusions

- Azimuth uncertain, but has a strong N-S component
- Possibility of a N35°E secondary component
- 250 ft of height
- 900 ft of half-length, longer than Seabiscuit, but still shorter than competitors
- Low degree of complexity
- Higher pressures may not be related to oblique initiation (all stages lack of tortuosity, presence of perf friction)



Wildcat Measurement Service  
P.O. Box 1836  
Artesia, New Mexico 88211-1836  
TollFree 888-421-9453  
Office 505-746-3481  
"Quality and Service is our First Concern"

PDS 06/25/00

Run No. 261213-02  
Date Run 12/13/2006  
Date Sampled 12/09/2006

Analysis for: PARALLEL PETROLEUM CORPORATION

GPANGL 162

Well Name: VOBESO 1525-16 STATE "B" #1  
Field:  
Sta. Number:  
Purpose: SPOT  
Sampling Temp: 22.0 DEG F  
Volume/day: 1925 MCF/DAY  
Pressure on Cylinder: 60.0 PSIG

Producer: PARALLEL PETROLEUM CORP.  
County: CHAVES State: NM  
Sampled By: A.J.G.  
Atmos Temp: DEG F  
Formation:  
Line Pressure: 73.2 PSIA

GAS COMPONENT ANALYSIS

Pressure Base: 14.7300

|                |     | Mol %    | GPM    |
|----------------|-----|----------|--------|
| Carbon Dioxide | CO2 | 4.3235   |        |
| Nitrogen       | N2  | 0.6738   |        |
| Methane        | C1  | 85.9676  |        |
| Ethane         | C2  | 5.6524   | 1.5108 |
| Propane        | C3  | 1.9299   | 0.5314 |
| Iso-Butane     | IC4 | 0.2812   | 0.0920 |
| Nor-Butane     | NC4 | 0.4872   | 0.1536 |
| Iso-Pentane    | IC5 | 0.1606   | 0.0588 |
| Nor-Pentane    | NC5 | 0.1404   | 0.0508 |
| Hexanes Plus   | C6+ | 0.3834   | 0.1673 |
| TOTAL          |     | 100.0000 | 2.5647 |

Real BTU Dry: 1078.92  
Real BTU Wet: 1060.14  
Real Calc. Specific Gravity: 0.6732  
Field Specific Gravity: 0.0000

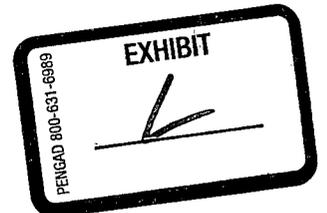
Standard Pressure: 14.6960  
BTU Dry: 1073.62  
BTU Wet: 1054.94

3 Factor: 0.9974  
N Value: 1.2948  
Avg Mol Weight: 19.4551  
Avg CuPt/Gal: 57.1122  
26 Lb Product: 0.4332  
Methane+ GPM: 17.1358  
Ethane+ GPM: 2.5647  
Propane+ GPM: 1.0538  
Butane+ GPM: 0.5225  
Pentane+ GPM: 0.2769

REMARKS:

Approved by: DON NORMAN

Wed Dec 13 10:13:35 2006



Company: Bold Energy  
 Well: Defilah State No. 1  
 Field: Runyan Ranch  
 Formation: Wolfcamp  
 Location: Eddy County, New Mexico  
 File: HOU-060947

| Sample:                          | 6Bm     | un-stressed | Host Plug |    |
|----------------------------------|---------|-------------|-----------|----|
| Depth, feet:                     | 4385.60 |             | na        | na |
| Klinkenberg Permeability, md:    |         | 0.005       | -         | -  |
| Permeability to Air, md:         |         | 0.019       | -         | -  |
| Swanson Permeability, md:        |         | 0.00001     | -         | -  |
| Porosity, fraction:              |         | 0.013       | -         | -  |
| maximum Sb/Pc, fraction:         |         | 0.00003     |           |    |
| R35, microns:                    |         | 0.00583     |           |    |
| R50 (median pore throat radius): |         | 0.00469     |           |    |

### PORE THROAT SIZE HISTOGRAM

