



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**

Governor

**Joanna Prukop**

Cabinet Secretary

July 31, 2006

**Mark E. Fesmire, P.E.**

Director

Oil Conservation Division

**Petrohawk Operating Company**  
c/o **Holland & Hart LLP**  
**P. O. Box 2208**  
**Santa Fe, New Mexico 87504-2208**

**Attention: Ms. Ocean Munds-Dry**

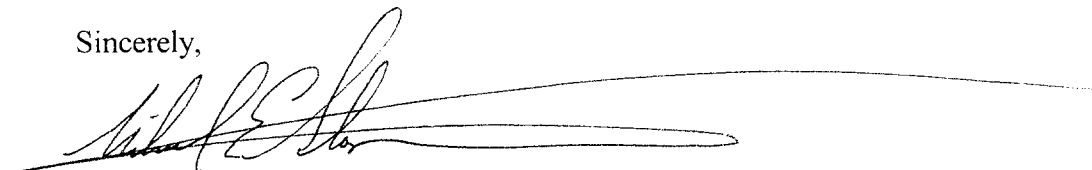
**Re:** *Administrative application (Division reference No. pTDS0-617438230) on behalf of Petrohawk Operating Company ("Petrohawk") filed with the Division on June 22, 2006 for an exception to the well density requirements, Rule 3 (C) of the "Special Pool Rules for the Jalmat Gas Pool (79240)," as promulgated by Division Order No. R-8170-P, issued in Case No. 12563 on December 14, 2001, within an existing non-standard 520-acre Jalmat gas spacing unit comprising the S/2 NE/4 and N/2 SE/4 of Section 9 and the W/2 of Section 10, both in Township 23 South, Range 36 East, NMPM, Lea County, New Mexico [see Ordering Paragraph No. (8) of Exhibit "A" in Division Order No. R-9073, issued in Case No. 9775 on December 14, 1989.]*

Dear Ms. Munds-Dry:

Petrohawk's proposed re-entry into and re-completion of the State "A" A/C-1 Well No. 86 (*API No. 30-025-09296*) as a Jalmat gas well in Unit "F" of Section 10 would be in violation of Rule 3 (D) of the Jalmat special pool rules where Petrohawk already operates its State "A" A/C-1 Well No. 37 (*API No. 30-025-09290*) as a Jalmat gas well within the same quarter-quarter section.

Your application is therefore **denied** and is being returned to you.


Sincerely,



Michael E. Stogner  
Engineer

MES/ms

cc: New Mexico Oil Conservation Division – Hobbs  
New Mexico State Land Office – Santa Fe  
File: SD-01-09

 You replied on 7/27/2006 4:52 PM.

**Stogner, Michael, EMNRD**

**From:** Ocean Munds-Dry [Omundsdry@hollandhart.com]  
**To:** Stogner, Michael, EMNRD  
**Cc:**  
**Subject:** Petrohawk application for Simultaneous Dedication  
**Attachments:**

**Sent:** Wed 7/26/2006 3:23 PM

Mr. Stogner:

We filed an application on behalf of Petrohawk Operating on June 21, 2006 for administrative approval of infill gas wells and simultaneous dedication in S8-T22S-R36E (in addition to 3 other similar applications). Petrohawk has informed me that they have a rig available on August 1 which they would like to utilize. Would you please let me know the status of this application and if you have any questions or concerns?

As always, I appreciate your time and attention to this matter.

Thank you,  
Ocean

**Ocean Munds-Dry**  
Holland & Hart LLP  
110 N. Guadalupe Suite 1  
Santa Fe, NM 87501  
Phone (505) 988-4421  
Fax (866) 851-8340  
E-mail: Omundsdry@hollandhart.com

**HOLLAND&HART**




**CONFIDENTIALITY NOTICE:** This message is confidential and may be privileged. If you believe that this email has been sent to you in error, please reply to the sender that you received the message in error; then please delete this e-mail. Thank you.

Petrohawk

6/22/06 DATE IN	SUSPENSE	MIKE STEGNER ENGINEER	6/23/06 LOGGED IN	SD TYPE	APP NO. PTD50617438230
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ABOVE THIS LINE FOR DIVISION USE ONLY

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

2006 JUN 22 PM 4 17  


## 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.

Ocean Munds-Dry Ocean Munds-Dry Attorney 6-22-06  
Print or Type Name Signature Title Date  
omundsdry@hollandhart.com  
e-mail Address

HOLLAND & HART<sup>LLP</sup>



Ocean Munds-Dry

2006 JUN 22 11:17 AM  
omundsdry@hollandhart.com

June 22, 2006

**HAND-DELIVERED**

Mark E. Fesmire, P.E.  
Director  
Oil Conservation Division  
New Mexico Department of Energy,  
Minerals and Natural Resources  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

30-025-09296

Re: Application of Petrohawk Operating Company for administrative approval of an infill gas well and simultaneous dedication of State "A" A/C 1 Well No. 86, 1980' FNL and 1980' FWL, S10-T23S-R36E, Jalmat Gas Pool, Lea County, New Mexico.

Dear Mr. Fesmire:

Pursuant to the provisions of Rule 4(B) of the Special Pool Rules for the Jalmat Gas Pool, as promulgated by Division Order No. R-8170-P dated December 14, 2001, Petrohawk Operating Company ("Petrohawk") hereby seeks an administrative exception to the gas well density provisions of Rule 3(C) and authorization to simultaneously dedicate said wells to the non-standard 520-acre spacing and proration unit originally approved by Order No. R-9073, dated December 14, 1989, as amended by Order R-9073-B, dated December 14, 1989.

Petrohawk seeks approval of the following well in Section 10, Township 23 South, Range 36 East, NMPM, Lea County, New Mexico:

The State "A" A/C 1 Well No. 86 to be re-entered and re-completed at a standard location 1980 feet from the North line and 1980 feet from the West line (Unit F).

Holland & Hart LLP

Phone [505] 988-4421 Fax [505] 983-6043 [www.hollandhart.com](http://www.hollandhart.com)

110 North Guadalupe Suite 1 Santa Fe, NM 87501 Mailing Address P.O. Box 2208 Santa Fe, NM 87504-2208

Aspen Billings Boise Boulder Cheyenne Colorado Springs Denver Denver Tech Center Jackson Hole Salt Lake City Santa Fe Washington, D.C. ☺



The proposed wells would be drilled within an existing 520-acre non-standard gas spacing unit comprised of the S/2 NE/4, N/2 SE/4 and SE/4 SE/4 of Section 9 and the W/2 of Section 10. Therefore, Petrohawk also seeks approval to simultaneously dedicate these wells to this spacing unit.

Administrative Order SD-01-09, dated December 19, 2001, authorized the simultaneous dedication of the following ten wells to the non-standard 520-acre gas spacing and proration unit for the Jalmat Gas Pool:

State "A" A/C 1 Well No. 37 (API No. 30-025-09290) located 1650 feet from the North line and West lines (Unit F) of Section 10;

State "A" A/C 1 Well No. 38 (API No. 30-025-09291) located 990 feet from the South and West lines (Unit M) of Section;

State "A" A/C 1 Well No. 49 (API No. 30-025-09292) located at an unorthodox location 660 feet from the North and West lines (Unit D) of Section 10;

State "A" A/C 1 Well No. 55 (API No. 30-025-09293) located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 10;

State "A" A/C 1 Well No. 81 (API No. 30-025-09295) located at an unorthodox location 660 feet from the North line and 1980 feet from the West line (Unit C) of Section 9;

State "A" A/C 1 Well No. 88 (API No. 30-025-09297) located at an unorthodox location 1980 feet from the South and West lines (Unit K) of Section 10;

State "A" A/C 1 Well No. 89 (API No. 30-025-09298) located at an unorthodox location 660 feet from the South line and 1980 feet from the West line (Unit N);

State "A" A/C 1 Well No. 130 (API No. 30-025-35552) located at an unorthodox location 660 feet from the South and East lines (Unit P) of Section 9;

State "A" A/C 1 Well No. 131 (API No. 30-025-35556) located at an unorthodox location 1980 feet from the South line and 660 feet from the East line (Unit I) of Section 9; and

State "A" A/C 1 Well No. 56 (API No. 30-025-09294) at a location 1980 feet from the South line and 660 feet from the West line (Unit L) of Section 10.

The proposed wells are necessary to facilitate the recovery of Jalmat gas reserves. Based on the geological discontinuity in the Jalmat the tighter spacing is anticipated to

HOLLAND & HART<sup>LLP</sup>



recover reserves, which cannot be recovered from existing wells. The wells will be completed with modern completion and fracture stimulation techniques which will ensure optimal recovery from the discontinuous Yates/Seven Rivers sands. **Exhibit 1** is a Base Map showing recent Jalmat activity and the proposed well location in Section 10. **Exhibit 2** is a Top of Structure Map with Petrohawk's acreage position in Section 10 outlined.

**Exhibits 3 through 7** are cross-sections showing the Yates and Seven Rivers sands vary substantially from well to well in thickness and reservoir quality. Given the variability of the sands, net pay isopach maps have not proven to be useful and are not included. Detailed correlations with newer generation Density-Neutron logs in the Yates and Seven Rivers interval reveal the sands "come and go" and are not blanket reservoirs. Sands that have not adequately produced in the area are expected in each new well bore.

Jalmat producers have been down-spaced on the Petrohawk acreage from 160 acres to 80 acres to 40-acre spacing in several phases since 1989. New gas production and reserves have always been encountered from these efforts, as shown on **Exhibit 8**. Petrohawk concludes that this area of Jalmat Field has such discontinuous sand reservoirs that infill drilling on 40-acre spacing is required to adequately drain the existing reserves.

The work of Raptor Resources, Inc. ("Raptor"), Mission Resources Corporation ("Mission") and Petrohawk was reviewed from April of 1999 through 2005. All of the new drills and re-completions (32) in Township 22 South, Range 36 East were studied to develop a type curve for the area. The monthly production data for each of these completions was normalized. The data was then averaged to produce a normalized production curve as shown on **Exhibit 9**. Detailed information for all the Mission/Petrohawk completion since Mission took over as operator in March 2004 are listed on **Exhibit 10**. The first month average initial rate for these projects is 149 mcf/d. Anticipated reserves per location were determined by using the average initial rate with the decline scenario developed from the type curve. The result of this analysis yields an Estimated Ultimate Recovery of 704 MMCFG.

Economic analysis was performed based on the average initial rates realized (See Exhibit 10) in the Mission/Petrohawk wells completed and using a normalized type curve (See Exhibit 9) designed by studying all completions from 1999 through 2005 on the Petrohawk acreage for the decline rate and hyperbolic exponent. **Exhibit 12** lists the details of the input and the results of the economics. The gas is extremely rich with an NGL yield of 136 bbls/MMCF. The processing plant takes 13% of the residue gas and NGL's. Gas shrinkage was based on plant statements. The gas price used in the analysis was \$6.00/mcf flat. No condensate was included in the run. The NGL price was 71% of the oil price (\$60/stb) and thus was \$42.60/bbl flat. This percentage was determined by comparing the actual prices received to NYMEX oil prices. The operating cost is the



average per producing well cost in the field. Our operations group provided the CWC for both new drills and re-completes. The results of the analysis show a EUR of 704 MMCF. The new drill wells have an NPV @ 10% - 821 M\$, Rate of Return = 36%, payout in 40 months, and a return on investment ratio of 6.1. The re-completes have an NPV @ 10% = 1,039 M\$, Rate of Return = 65%, payout in 26 months, and a return on investment ratio of 9.3. In summary, either drilling or re-completing wells on 40-acres with the discontinuous nature of the sands is extremely economic.

**Exhibit 11** is the completion data and estimated EUR for the 40-acre locations around the proposed well. In Unit Letter F of Section 10, the surrounding 40-acre wells have produced 4,755 MMCF, and will make another 60 MMCF. Three wells (Nos. 55, 37 and 56) were either not frac'd or treated with small fracs. Well No. 86 has produced out of the Queen formation, is currently T&A'd and will be re-completed to the Yates-Seven Rivers. Well No. 37 is a Yates-only natural completion that is currently only making 1mcfd. This well be shut in with the completion of the Well No. 86.

Many of the older wells had only small or no frac treatment and were not perforated or treated in a way to adequately contact every gas-bearing sand. In many cases, the Seven Rivers gas zones were not perforated at all. **Exhibit 11** shows that seven of the offsets in Section 10 had fracture treatments exceeding 100,000 # of sand – all but one completed after 1999. The older wells, if they were frac'd, had fracs of only 20,000 to 60,000 # of sand. Petrohawk is using a combination of limited entry perforating and pumping much larger frac jobs (300K#) to ensure that the entire Jalmat interval is stimulated. The designed fracture half length is approximately 300 feet. Careful engineering of the frac job can then assure all potential sands are effectively drained.

Approval of this application will result in the efficient recovery of hydrocarbons, prevent waste and will not violate correlative rights.

**Exhibit 13** lists the parties affected by this application as defined by Rule 1210. **Exhibit 14** is a map displaying the offset operators around the spacing unit in Section 22. **Exhibit 15** is an affidavit confirming that notice of this application has been provided in accordance with the provisions of Rule 4(D) and Rule 1210(B) by providing a copy of this application, including all attachments, to the affected parties by certified mail-return receipt requested advising them that if they have an objection to this application it must be filed in writing with the Division's Santa Fe office within twenty (20) days after the filing of this application and proof of notice with the Division.

**Exhibit 16** is OCD Form C-102 depicting the proposed surface location of the referenced well.

Also enclosed is a proposed administrative order of the Division.

HOLLAND & HART  LLP

Sincerely,



Ocean Munds-Dry  
Attorney for Petrohawk Operating Company

Enclosures



Attention: Ms. Nancy Gatti

*Administrative Order - \_\_\_\_\_*

Dear Ms. Gatti:

Reference is made to your application dated June 22, 2006 for an infill gas well and simultaneous dedication for its proposed State "A" A/C 1 Well No. 86, 1980' FNL and 1980' FWL, S10-T23S-R36E, Jalmat Gas Pool, Lea County, New Mexico.

The proposed wells will be simultaneously dedicated to an existing 520-acre gas spacing unit comprising Section 10 which is currently dedicated to the State "A" A/C 1 Well No. 37 (Unit F) of Section 10; State "A" A/C 1 Well No. 38 (Unit M) of Section 10; State "A" A/C 1 Well No. 49 of Section 10; State "A" A/C 1 Well No. 55 (Unit E) of Section 10; State "A" A/C 1 Well No. 81 (Unit C) of Section 9; State "A" A/C 1 Well No. 88 (Unit K) of Section 10; State "A" A/C 1 Well No. 89 (Unit N) of Section 10; State "A" A/C 1 Well No. 130 (Unit P) of Section 9; State "A" A/C 1 Well No. 131 (Unit I) of Section 9; and State "A" A/C 1 Well No. 56 (Unit L) of Section 10.

This application has been duly filed under the provisions of the "Special Pool Rules for the Jalmat Gas Pool," as promulgated by Division Order No. R-8170-P, issued in Case No. 12563 on December 14, 2001.

By authority granted me under the provisions of Rules 4(A), (B), and (D) of the special rules governing the Jalmat Gas Pool, the following described wells within this 520-acre spacing unit is hereby approved:

The State "A" A/C 1 Well No. 86 to be re-entered and re-completed at a standard location 1980 feet from the North line and 1980 feet from the West line (Unit F).

Further, Petrohawk is hereby authorized to simultaneously dedicate Jalmat gas production from the above-described wells.

Sincerely,

Mark E. Fesmire, P.E.  
Director

cc: Oil Conservation Division - Hobbs/Artesia



June 22, 2006

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Re: Application of Petrohawk Operating Co. for administrative approval of infill gas wells and simultaneous dedication of State "A" A/C 1 Well No. 86, 1980' FNL and 1980' FWL, S10-T23S-R36E, Jalmat Gas Pool, Lea County, New Mexico.

Dear Ladies and Gentlemen:

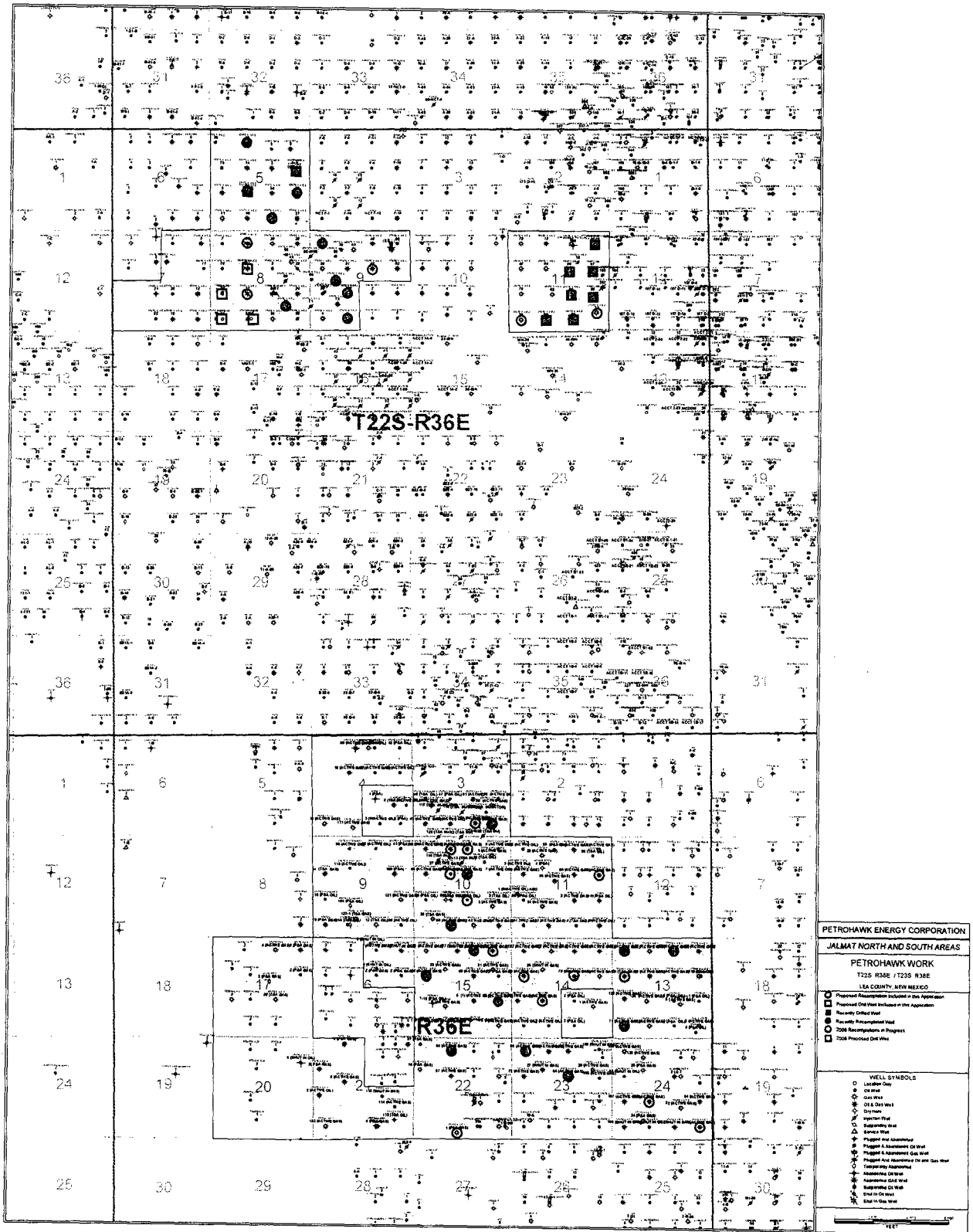
Enclosed is a copy of the above-referenced application which was filed with the New Mexico Oil Conservation Division on this date by Petrohawk Operating Company for administrative approval of an infill gas well and simultaneous dedication for its proposed State "A" A/C 1 Well No. 86, 1980' FNL and 1980' FWL, S10-T23S-R36E, Jalmat Gas Pool, Lea County, New Mexico.

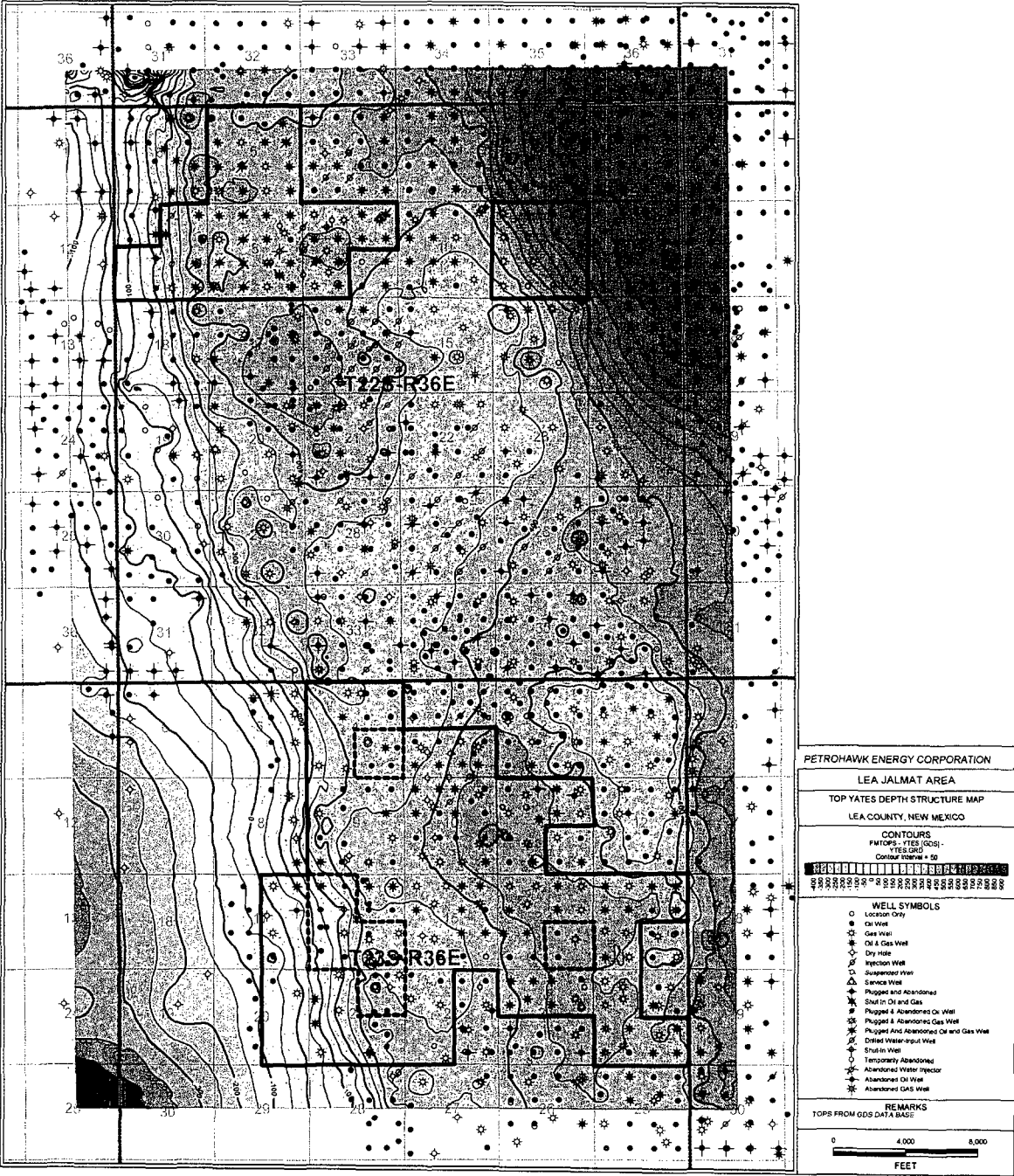
Petrohawk seeks to dedicate this well to an existing 520-acre gas spacing unit comprising Section 9 and 10 which is currently dedicated to the State "A" A/C 1 Well No. 37 (Unit F) of Section 10; State "A" A/C 1 Well No. 38 (Unit M) of Section 10; State "A" A/C 1 Well No. 49 of Section 10; State "A" A/C 1 Well No. 55 (Unit E) of Section 10; State "A" A/C 1 Well No. 81 (Unit C) of Section 9; State "A" A/C 1 Well No. 88 (Unit K) of Section 10; State "A" A/C 1 Well No. 89 (Unit N) of Section 10; State "A" A/C 1 Well No. 130 (Unit P) of Section 9; State "A" A/C 1 Well No. 131 (Unit I) of Section 9; and State "A" A/C 1 Well No. 56 (Unit L) of Section 10.

As an owner of an interest that may be affected by these proposed wells, you may object to this application. Objections must be filed in writing within twenty days from this date at the Division's Santa Fe office that is located at 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505. If no objection is received within this twenty-day period, this application may be approved.

Sincerely,  
  
Ocean Munds-Dry  
Attorney for Petrohawk Operating Co.

Enclosures

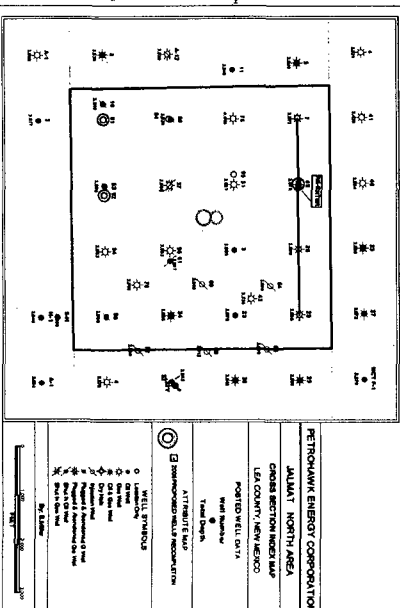
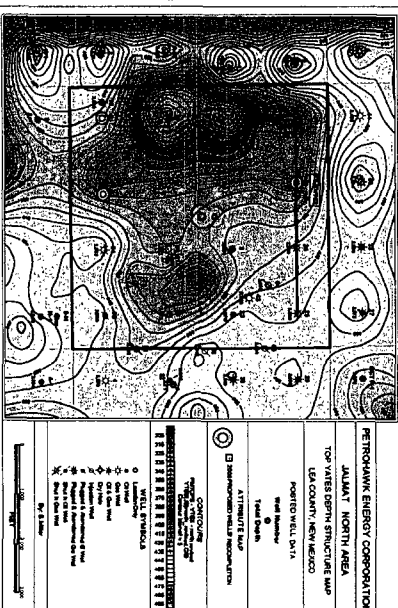




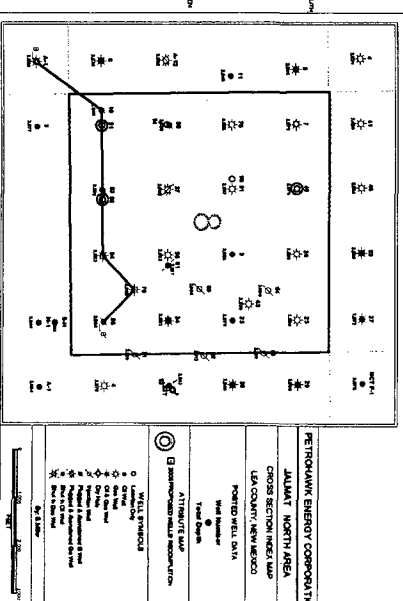
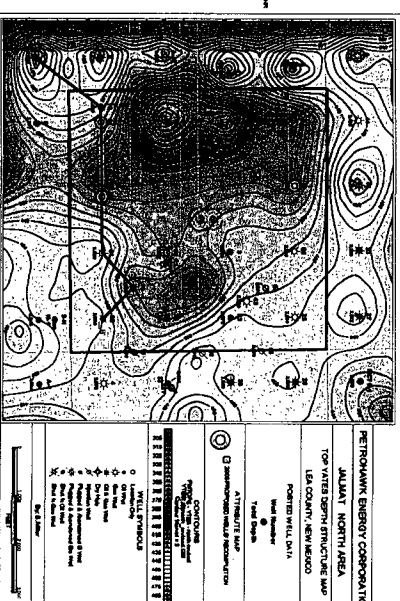
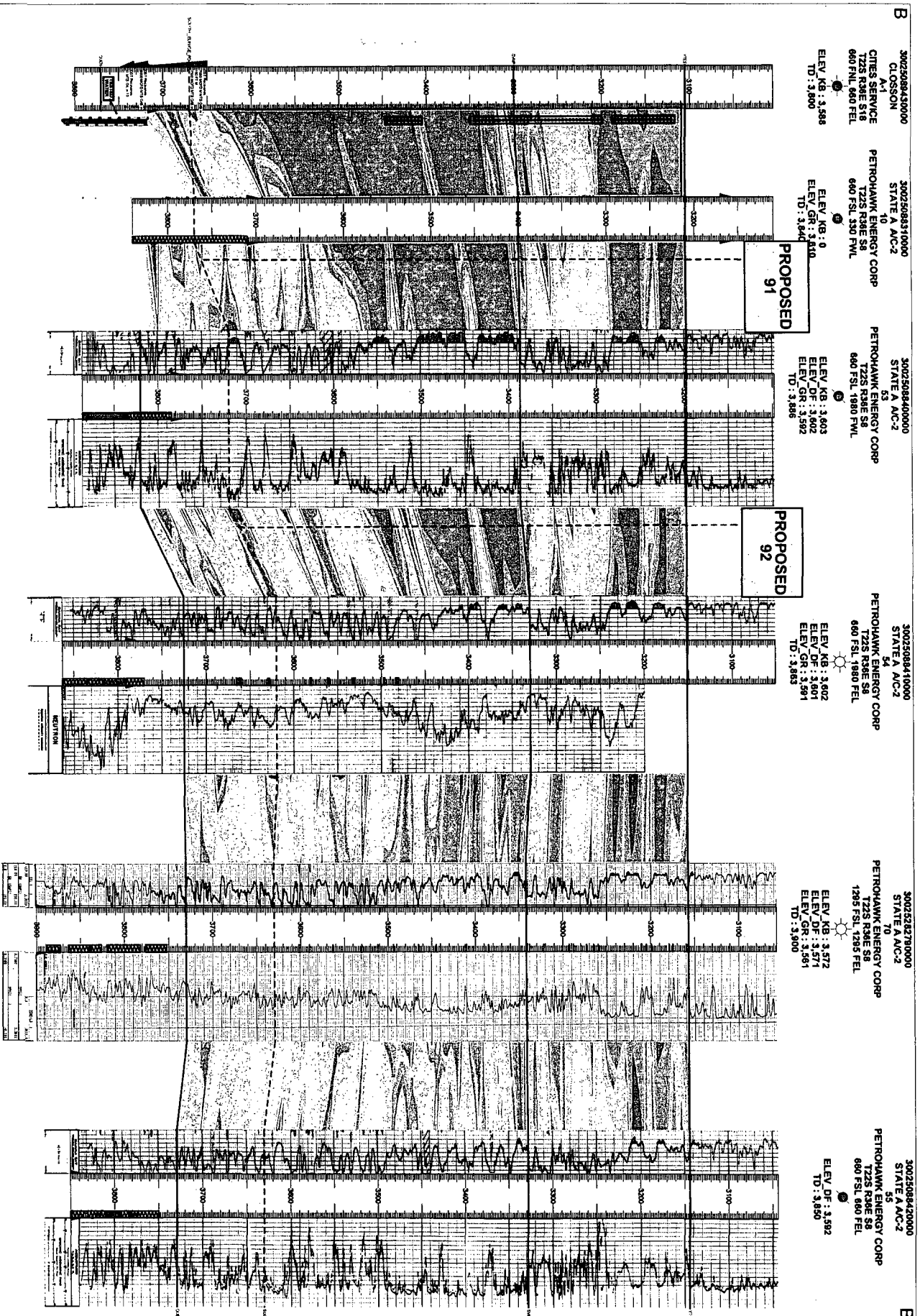
STATE A VC-2  
25  
3002508834000

**PETROHAWK ENERGY CORP.**  
**T22S R36E S8**

660 FNL 660 FE

ELEV\_DF: 3.57  
ELEV\_GR: 3.56  
TD: 3.850

**EXHIBIT 3**





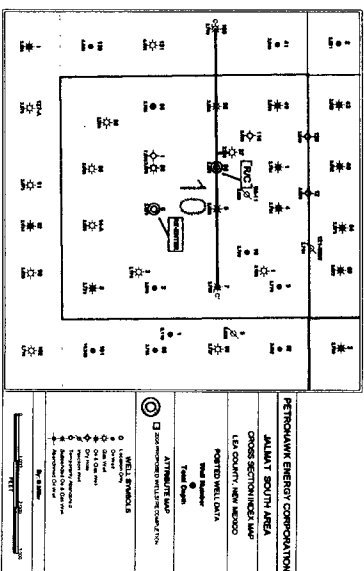
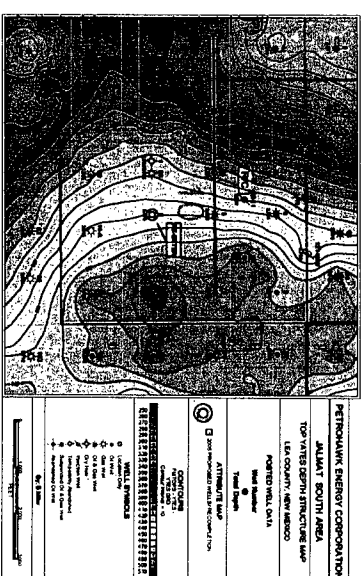
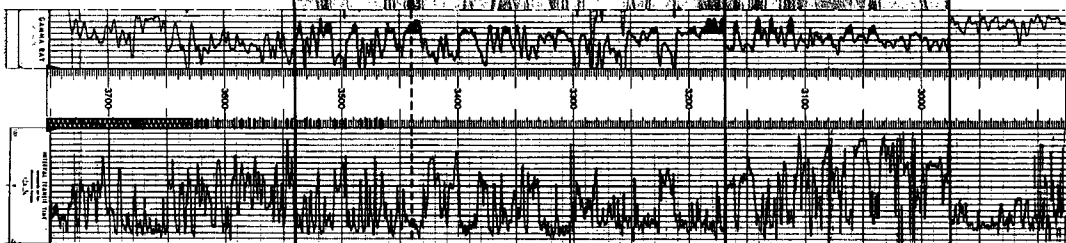
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 PETROHAWK ENERGY CORP  
 1725 RISE S10  
 1860 PHL 2510 PFL  


ELEV OF : 3.471  
 ELEV ON : 3.461  
 TD : 0.9M

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500250630.50600  
 STATE A MC3  
 PETROHAWK ENERGY CORP  
 1725 RISE S10  
 1860 PHL 600 PFL  


ELEV KB : 3.478  
 ELEV ON : 3.478  
 TD : 0.75



## EXHIBIT 5

3002509294000

STATE A AC-1

56

PETROHAWK ENERGY CORP

1235 RISE S10

1980 FSL 680 FVL

ELEV KB : 3.448

ID : 3.765

3002509297000

STATE A AC-1

68

PETROHAWK ENERGY CORP

1235 RISE S10

1980 FSL 1980 FVL

ELEV OF : 3.452

ID : 3.678

30025093020000

STATE A AC-3

6

PETROHAWK ENERGY CORP

1235 RISE S10

1980 FSL 2310 FEL

ELEV OF : 3.446

ID : 3.895

30025093010000

STATE A AC-3

3

PETROHAWK ENERGY CORP

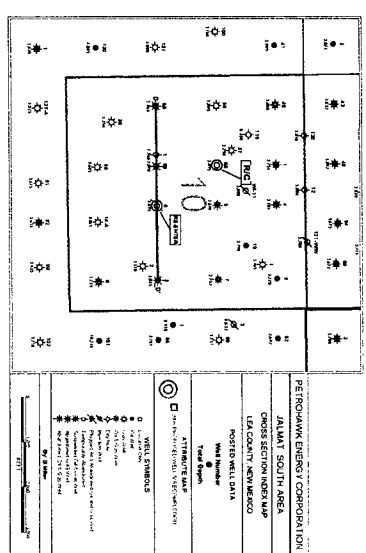
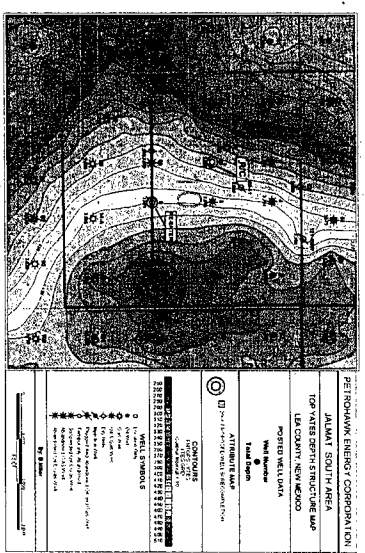
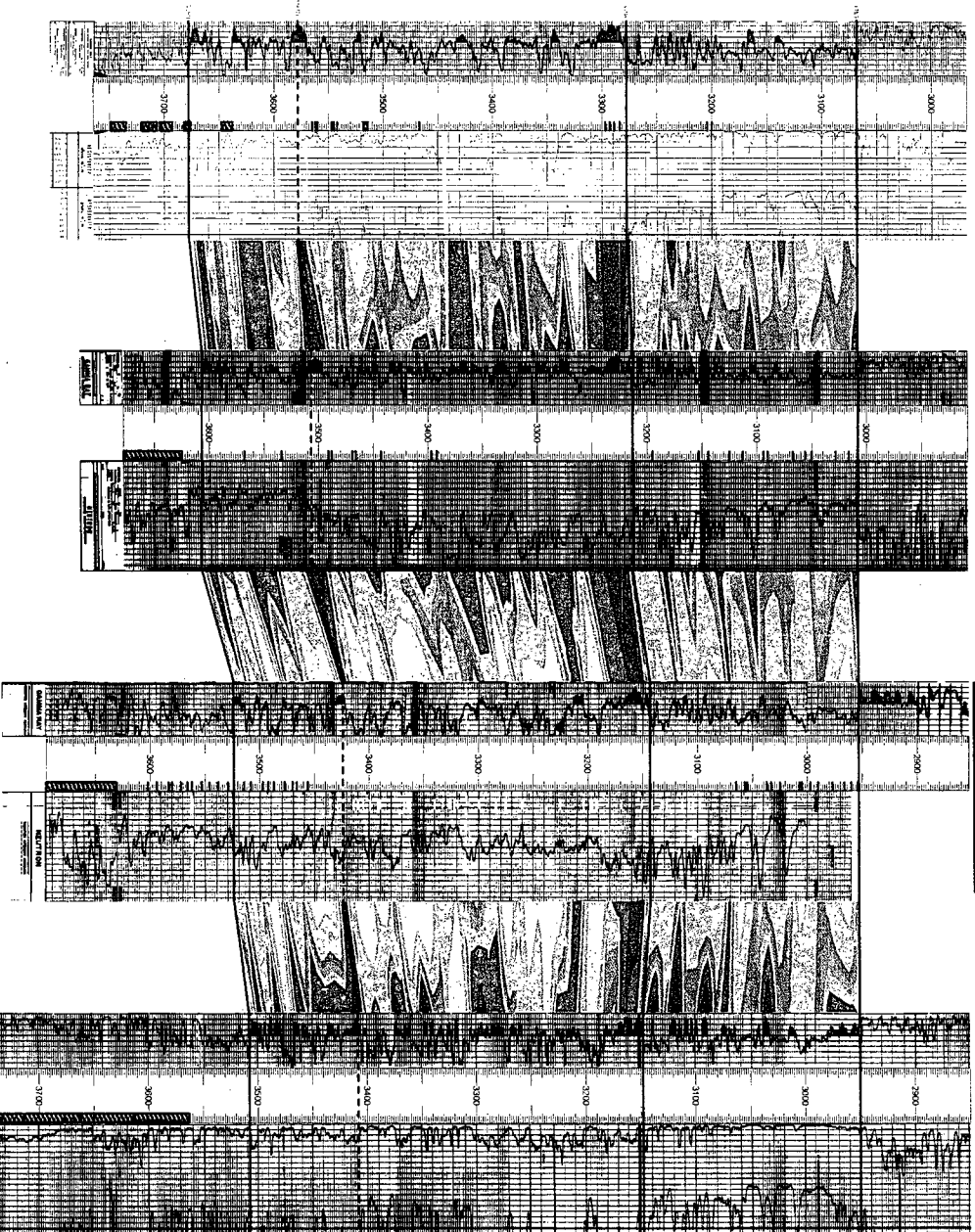
1235 RISE S10

1980 FSL 680 FEL

ELEV KB : 3.468

ID : 3.845

RE-ENTER





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ELEV KB : 3.390  
TD : 3.748

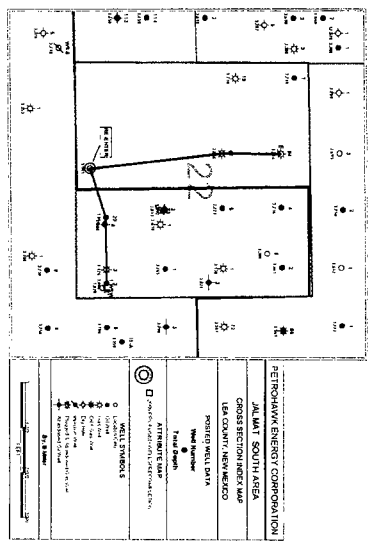
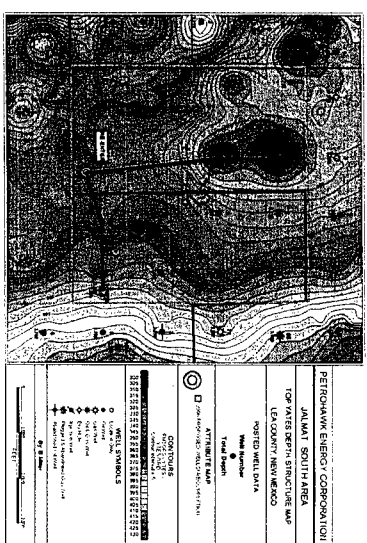
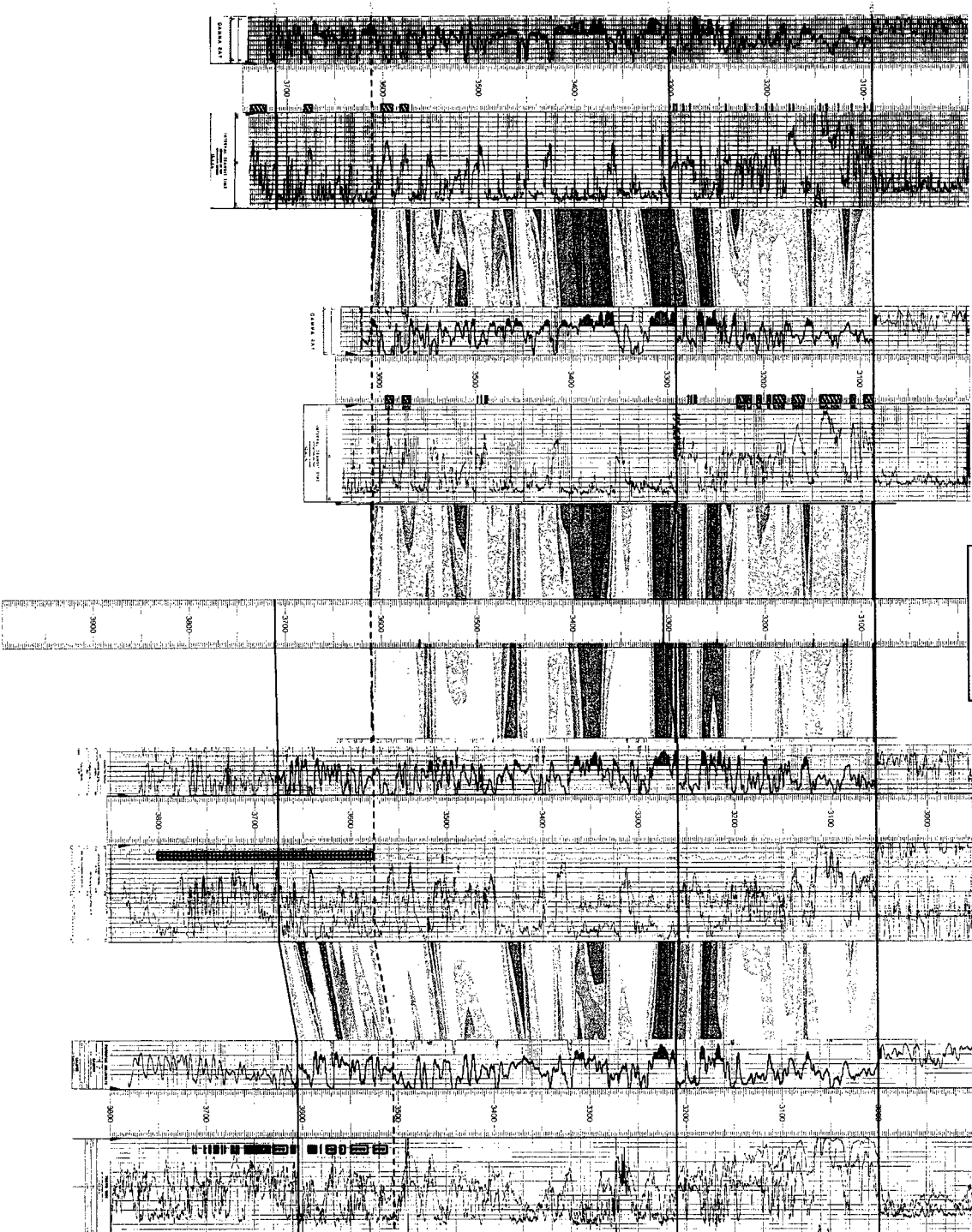
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PETROHAWK ENERGY CORP  
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1980 FNL 1980 FWL  
ELEV KB : 3.394  
TD : 3.646

30025093810000  
STATE A A.C-1  
PETROHAWK ENERGY CORP  
1235 R306 S22  
330 FSL 2310 FWL  
ELEV KB : 3.407  
ELEV GR : 3.416  
TD : 3.954

30025093860000  
LANGLE LYNN QUEEN U  
ENERGEN RES CORP  
1235 R306 S22  
672 FSL 1797 FEL  
ELEV KB : 3.406  
TD : 3.654

30025093800000  
SHELL STATE JK  
ENERGEN RES CORP  
1235 R306 S22  
660 FSL 330 FEL  
ELEV KB : 3.379  
TD : 3.800

RE-ENTER

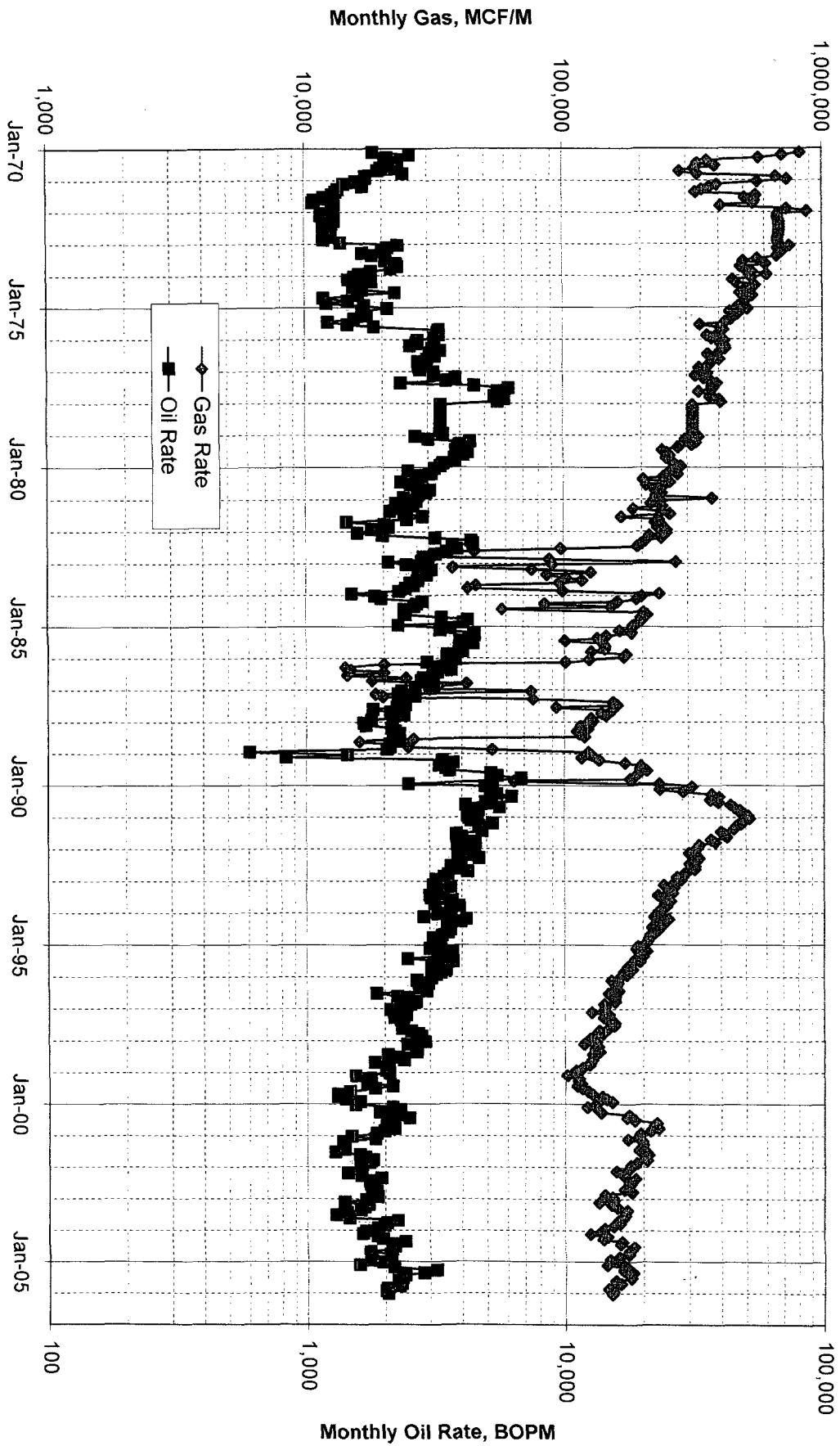


PETROHAWK ENERGY CORP  
LEA JALANI SOUTH AREA  
STRATIGRAPHIC CROSS SECTION E-F  
7291 FNL SECTION D  
LEA COUNTY, NEW MEXICO

Well Number  
1235 R306 S22  
Footing Cdn  
WELL - ELEV KB  
WELL - ELEV GR  
WELL - TD

30025093840000  
30025093850000  
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Petrohawk Leases  
Jalmat Field  
Lea County, New Mexico



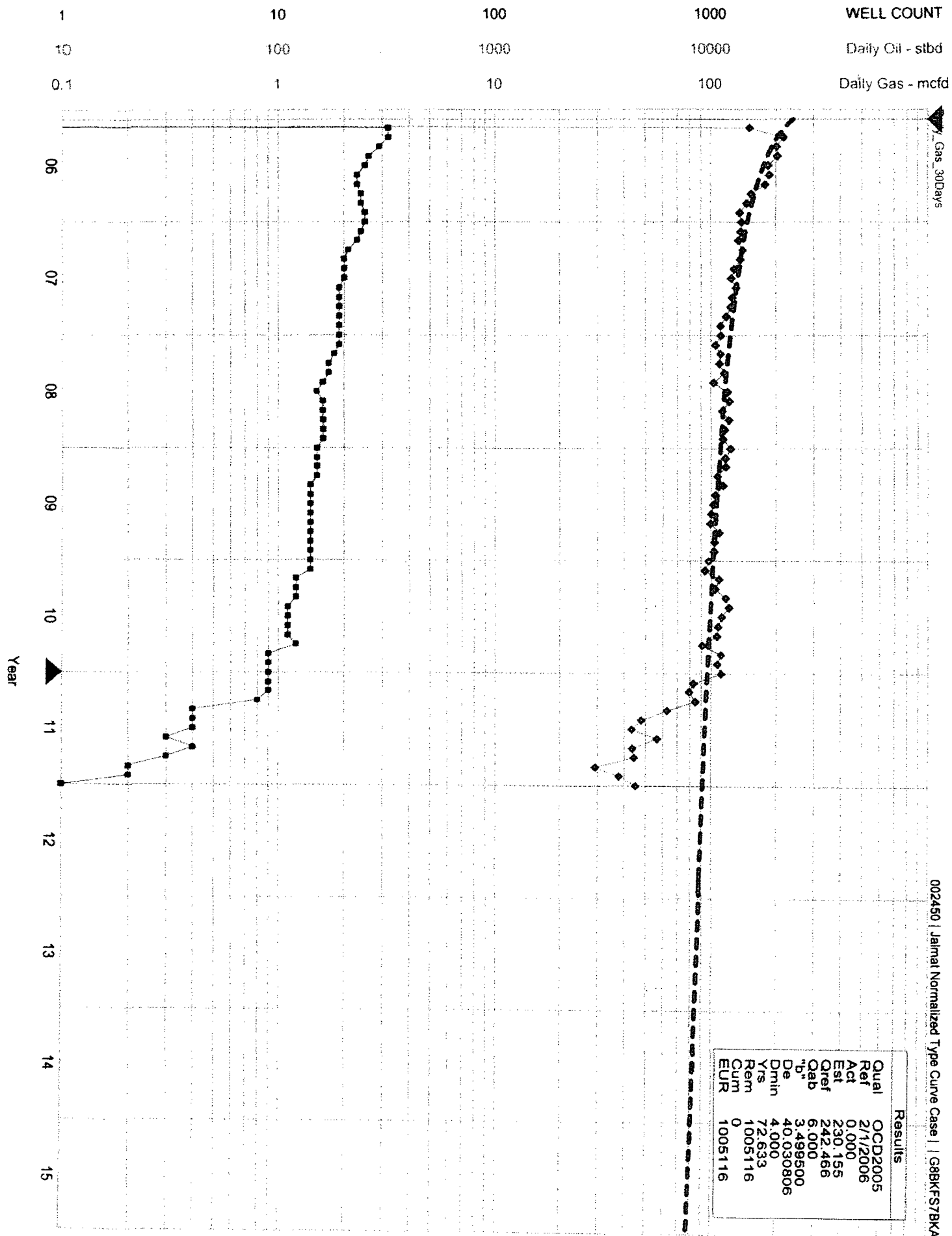


EXHIBIT 9

Jalmat Field - New Compls since Mission / Petrohawk became operator in 3/2004

											8/8ths Initial Rate		
											Oil	Gas	Wtr
											(stbd)	(mcf/d)	(stbd)
Lease Name	Well	Location	API	Type	Oil or Gas	Field Name	Status	First Prod Date	Prod Zone Name				
MATKINS	2	151 23S 36E	30-025-10720	Add pay & Frac	Gas	JALMAT	Producing	2005/03	TANSILL-YATES-SEVEN RIVERS	0	34		2
STATE A A C 1	57	13B 23S 36E	30-025-09344	Add pay & Frac	Gas	JALMAT	Producing	2005/03	TANSILL-YATES-SEVEN RIVERS	0	81		0
STATE A A C 1	59	15E 23S 36E	30-025-10725	Add pay & Frac	Gas	JALMAT	Producing	2005/03	TANSILL-YATES-SEVEN RIVERS	0	39		2
STATE A A C 1	65	23D 23S 36E	30-025-09394	Add pay & Frac	Gas	JALMAT	Producing	2005/02	TANSILL-YATES-SEVEN RIVERS	0	172		6
STATE A A C 1	66	13D 23S 36E	30-025-09346	Add pay & Frac	Gas	JALMAT	Producing	2005/04	TANSILL-YATES-SEVEN RIVERS	0	94		0
STATE A A C 1	69	3P 23S 36E	30-025-09229	Add pay & Frac	Gas	JALMAT	Producing	2005/03	TANSILL-YATES-SEVEN RIVERS	0	158		0
STATE A A C 1	71	13M 23S 36E	30-025-09347	Add pay & Frac	Gas	JALMAT	Producing	2005/01	TANSILL-YATES-SEVEN RIVERS	0	205		1
STATE A A C 1	82	15B 23S 36E	30-025-10723	Add pay & Frac	Gas	JALMAT	Producing	2005/01	TANSILL-YATES-SEVEN RIVERS	0	305		0
STATE A A C 1	84	23G 23S 36E	30-025-09397	Add pay & Frac	Gas	JALMAT	Producing	2005/04	TANSILL-YATES-SEVEN RIVERS	0	176		0
STATE A A C 1	89	10N 23S 36E	30-025-09298	Add pay & Frac	Gas	JALMAT	Producing	2005/03	TANSILL-YATES-SEVEN RIVERS	1	132		35
STATE A A C 1	94	22C 23S 36E	30-025-09384	Add pay & Frac	Gas	JALMAT	Shut In	2005/03	TANSILL-YATES-SEVEN RIVERS	0	8		0
STATE A A C 2	1	9N 22S 36E	30-025-08849	Add pay & Frac	Gas	JALMAT	Producing	2005/01	TANSILL-YATES-SEVEN RIVERS	0	68		0
STATE A A C 2	28	5I 22S 36E	30-025-08792	Add pay & Frac	Oil	JALMAT	Producing	2004/06	TANSILL-YATES-SEVEN RIVERS	1	324		1
STATE A A C 2	29	9D 22S 36E	30-025-08854	Add pay & Frac	Gas	JALMAT	Producing	2005/05	TANSILL-YATES-SEVEN RIVERS	0	162		0
STATE A A C 2	33	5O 22S 36E	30-025-08793	Add pay & Frac	Gas	JALMAT	Producing	2004/05	TANSILL-YATES-SEVEN RIVERS	1	266		6
STATE A A C 2	38	9K 22S 36E	30-025-08847	Add pay & Frac	Gas	JALMAT	Producing	2004/07	TANSILL-YATES-SEVEN RIVERS	0	119		0
STATE A A C 2	47	5C 22S 36E	30-025-08798	Add pay & Frac	Oil	JALMAT	Producing	2005/04	TANSILL-YATES-SEVEN RIVERS	28	137		0
STATE A A C 2	67	9K 22S 36E	30-025-28276	Add pay & Frac	Gas	JALMAT	Producing	2005/03	TANSILL-YATES-SEVEN RIVERS	0	70		0
STATE A A C 2	70	8P 22S 36E	30-025-28279	Add pay & Frac	Gas	JALMAT	Producing	2004/08	TANSILL-YATES-SEVEN RIVERS	0	223		85
STATE A A C 2	81	5K 22S 36E	30-025-35688	New Drill	Gas	JALMAT	Producing	2004/04	TANSILL-YATES-SEVEN RIVERS	2	247		4
STATE A A C 2	82	11J 22S 36E	30-025-36936	New Drill	Gas	JALMAT	Producing	2005/05	TANSILL-YATES-SEVEN RIVERS	0	136		0
STATE A A C 2	83	11N 22S 36E	30-025-36910	New Drill	Gas	JALMAT	Producing	2005/05	TANSILL-YATES-SEVEN RIVERS	0	70		0
STATE A A C 3	84	11O 22S 36E	30-025-36935	New Drill	Gas	JALMAT	Producing	2005/04	TANSILL-YATES-SEVEN RIVERS	0	100		0
STATE A A C 2	85	11A 22S 36E	30-025-37663	New Drill	Gas	JALMAT	WO Compl	WO Compl	TANSILL-YATES-SEVEN RIVERS		WO Compl		
STATE A A C 2	86	11G 22S 36E	30-025-37664	New Drill	Gas	JALMAT	Producing	2006/04	TANSILL-YATES-SEVEN RIVERS	0	243		0
STATE A A C 2	87	11H 22S 36E	30-025-37665	New Drill	Gas	JALMAT	WO Compl	2006/05	TANSILL-YATES-SEVEN RIVERS		Cleaning up after frac		
STATE A A C 2	88	11I 22S 36E	30-025-37666	New Drill	Gas	JALMAT	Producing	2006/04	TANSILL-YATES-SEVEN RIVERS	0	316		0
STATE A A C 3	5	10G 23S 36E	30-025-09303	Add pay & Frac	Gas	JALMAT	Shut In	2005/03	TANSILL-YATES-SEVEN RIVERS	0	0		25
STATE 157 G	5	5H 22S 36E	30-025-37801	New Drill	Gas	JALMAT	WO Compl	WO Compl	TANSILL-YATES-SEVEN RIVERS		WO Compl		

Avg Initial Rate:

149

OFFSET JALMAT WELLS FOR PROPOSED NEW WELL (RECOMPLETE OF ACC 1 #86)											
SECTION: 10		SPOT: F		123S R36E							
JALMAT FIELD, LEA CO, NM											
Well #	Sec/spot	Comp date	Zones	Pay interval	Treatment	Y-7R	Cum MMCF	Y-7R	Cur rate	Status	Y-7R
40-acre offsets, Sec 10:											
ACC1 #81	10C	Jan-60	Queen	3654-3780	10K# SD	0		0		T&A 9/99	0
		Sep-99	Y-7R	3083-3279	183K# SD	58		24		Active	118
ACC1 #49	10D	Mar-59	Queen	3690-3766	50K# SD	0		0		T&A 2/89	0
		Feb-89	Y-7R	3159-3638	185K# SD	346		2		Active	346
ACC1 #116	10D	Jan-84	Queen	3666-3842	7200 gal acid	0		0		T&A 10/92	0
ACC1 #55	10E	Mar-59	Queen	3678-3754	50K# SD	0		0		T&A 9/90	0
		Aug-90	Y-7R	3140-3530	90K# SD	185		2		Active	185
ACC1 #37	10F	Feb-53	Y	2959-3224	Natural	4088		1		Active	4088
AAC1 #86	10F	Apr-60	Queen	3660-3696	10 K# SD	0		0		T&A 12/93	0
			7R	Proposed Recompletion		0		0			704
ACC3 #5	10G	May-60	Queen	3502-3698	10K# SD	0		0		T & A 9/90	0
		Sep-90	Y-7R	3024-3457	74 K# SD	78		0		SI	78
		Mar-05	Y-7R	2941-3326	282 K# SD	0		0		SI	0
ACC3 #11	10G	May-84	Queen	3642-3754	5500 gal acid	0		0		T&A 10/92	0
ACC3 #4	10J	Feb-60	Queen	3677-3729	36K# SD	0		0		T&A 12/90	0
		Dec-90	Y-7R	3059-3503	160K# SD	167		0		SI	167
ACC3 #6	10J	Aug-60	Queen	3456-3602	40K# SD	0		0		P&A 12/94	0
		Oct-90	Y	2954-3065	219K# SD	0		0		P&A 12/94	0
			7R	To be re-entered		0		0			704
ACC1 #88	10K	May-60	Queen	3625-78	10K# SD	0		0		T&A 3/89	0
		Mar-89	Y-7R	3016-3568	156 K# SD	0		0		SI	0
Gazelle #1	10K	Mar-98	Abo	None	None	0		0		P&A 8/98	0
ACC1 #56	10L	May-59	Queen	3638-3721	50K# SD	0		0		P&A 9/92	0
		Mar-89	Y-7R	3284-3565	None	0		0		P&A 9/92	0

# Jalmat - New Drill & Recomplete - Economics Summary Table

## Input:

WI = 100 %	RI = 82.5%
Prod Start Date = Drill Date + 1 mth	
Initial Rate = 149 mcf/d + 0 bopd	(from avg of Mission/Petrohawk activity)
di = 40%	(from normalized type curve)
n = 3.5	(from normalized type curve)
NGL Yield = 136 bbls/mmcft	(from plant statements)
1-Gas Shrinkage = 59%	(from plant statements)
Plant Takes = 13% of residue gas & ngl	(contract with plant)
Gas Price = \$6.00/mcf flat	
Oil Price = \$60/stb flat	(no oil in economics)
NGL Price = \$42.60/stb flat	(71% of Oil)
OP Cost = \$1264/well/mth	(actuals from los statement)
CWC = 650 M\$ (New Drill)	CWC = 425 M\$ (Recomplete)

## Results:

	New Drill	Recompl
8/8ths Reserves:	704 MMCFG	704 MMCFG
NPV @ 10%:	821 M\$	1039 M\$
ROR:	36%	65%
Payout:	40 mths	26 mths
ROI:	6.1	9.3

**EXHIBIT 13**

**Affected Parties**

**State A A/C 1 Well No. 86  
Section 10, Township 23 South, Range 36 East, NMPM  
Lea County, New Mexico.**

Arch Petroleum  
10 Desta Dr. Suite 420E  
Midland, TX 79705





**EXHIBIT 15**

**BEFORE THE  
OIL CONSERVATION DIVISION  
NEW MEXICO ENERGY, MINERALS AND  
NATURAL RESOURCES DEPARTMENT**

IN THE MATTER OF THE APPLICATION OF PETROHAWK OPERATING COMPANY FOR ADMINISTRATIVE APPROVAL OF AN INFILL GAS WELL AND SIMULTANEOUS DEDICATION OF STATE "A" A/C 1 WELL NO. 86, 1980' FNL AND 1980' FWL, S10-T23S-R36E, JALMAT GAS POOL, LEA COUNTY, NEW MEXICO.

**AFFIDAVIT**

STATE OF NEW MEXICO       )  
  ) ss.  
COUNTY OF SANTA FE       )

Ocean Munds-Dry, attorney in fact and authorized representative of Petrohawk Operating Company, the Applicant herein, being first duly sworn, upon oath, states that notice of the above-referenced Application was mailed to the addresses shown on Exhibit "13" attached hereto.

Ocean Munds-Dry  
Ocean Munds-Dry

SUBSCRIBED AND SWORN to before me this 22<sup>nd</sup> day of June 2006 by William F. Carr.



OFFICIAL SEAL  
LISAMARIE ORTIZ  
NOTARY PUBLIC-STATE OF NEW MEXICO  
My commission expires 01/14/07

[Signature]  
Notary Public

My Commission Expires: January 14, 2007

3462469\_1.DOC

DISTRICT I

1825 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 &amp; Natural Resources Department

OIL CONSERVATION DIVISION  
1220 South St. Frances Dr.  
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 <b>30-025-09296</b>	Pool Code <b>79240</b>	Pool Name <b>JALMAT; TANSILL-YATES-7 RIVERS (GAS)</b>
Property Code <b>33493</b>	Property Name <b>STATE A A/C1</b>	Well Number <b>086</b>
OGRID No. <b>148381</b>	Operator Name <b>PETROHAWK OPERATING COMPANY</b>	Elevation <b>3460'</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
<b>F</b>	<b>10</b>	<b>23 S</b>	<b>36 E</b>		<b>1980</b>	<b>NORTH</b>	<b>1980</b>	<b>WEST</b>	<b>LEA</b>

## 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
<b>SAME</b>									
Dedicated Acres <b>640</b>	Joint or Infill <b>INFILL</b>	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

	<b>OPERATOR CERTIFICATION</b> I hereby certify the 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 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 Date <b>NANCY K. GATTI</b> Printed Name <b>REGULATORY MANAGER</b>
	<b>SURVEYOR CERTIFICATION</b> 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.
	Date of Survey Signature & Seal of Professional Surveyor
	<b>EXHIBIT 16</b>  Certificate No.