CASE NO.

7047

APPLICATION,

TRANSCRIPTS,

SMALL EXHIBITS,

ETC.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

April 21, 1981

Nucorp Energy, Inc.
700 Crown Tower
8700 Crown Hill Boulevard
San Antonio, Texas 78209

Attention: R. H. Denman

Re: Case 7047
Order R-6503

Dear Mr. Denman:

Based upon the data supplied by your letters of March 20 and April 17, 1981, the special 10,000 to one gas-oil ratio limitation for the East Caprock-Pennsylvanian Pool will be continued.

Yours very truly,

JOE D. RAMEY
Director

JDR/RLS/fd

Nucorp Energy, Inc.
(TEXAS)
200 Crown Tower
8700 Crown Hill Boulevard • San Antonio, Texas 78209 • (512) 828-8027

April 17, 1981

File
Case 7047

State of New Mexico
Energy & Minerals Department
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. R. L. Stamets
Technical Support Chief

Re: Division Order No. R-6503

Dear Mr. Stamets: E Caprock Penn

The subject division order was issued November 6, 1980 and provided for a limiting Gas/Oil Ratio of 10,000 cubic feet per barrel for Nucorp Energy, Inc.'s State Well No. 23-1, Lea County, New Mexico.

Attached hereto is Nucorp Energy, Inc.'s best engineering estimate of projected GOR performance versus cumulative gas production. This projection was prepared and is being furnished pursuant to my recent telephone conversation with you regarding the subject division order. Plotted concurrently with this projection is the actual performance, which on the average, has somewhat exceeded the estimated performance.

Nucorp Energy continues to feel that the Core Laboratories's analysis of the recombined separator samples of liquid and gas offers the best evidence that the produced fluid exists in the reservoir in a vapor state. Their analysis also indicated that retrograde liquid remaining in the reservoir at depletion is really very minimal.

Again I wish to thank you for your consideration in holding this matter open, and we respectfully request that the 10,000 cubic feet per barrel GOR granted by the subject order be permitted to continue in effect.

Yours very truly,

R. H. Denman

R. H. Denman, Vice President
Engineering Administration

RHD/jr
Encl.

cc: Mr. W. Thomas Kellahin
Post Office Box 1769
Santa Fe, New Mexico 87501

Nucorp Energy, Inc.
(TEXAS)
700 Crown Tower
8700 Crown Hill Boulevard • San Antonio, Texas 78209 • (512) 828-8027

March 20, 1981

State of New Mexico
Energy & Minerals Department
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. R. L. Stamets
Technical Support Chief

Case 7117

Re: Division Order No. R-6503

Dear Mr. Stamets:

Thank you for your letter of March 6, 1981 regarding the subject division order and your consideration in extending the filing date for additional information to March 31, 1981.

We have updated the production information as presented at the October, 1980 Hearing, and although the well produces in excess of the permitted Gas/Oil Ratio , the gross volume permitted on the basis of top pool allowable is considerably greater than the actual volume produced.

The allowable subsequent to the Hearing was held at a low level through September, 1980 due to some difficulty in getting the approved Gas/Oil Ratio into the state's computer, and this was reflected in our producing the well within the assigned allowable rate. Low oil production in January, 1981, after the allowable was corrected, was due to freezing problems.

I am also enclosing another copy of the reservoir fluid study for the subject well performed by Core Laboratories, Inc. in October, 1980. This is the same study that was presented as an exhibit at the October Hearing, and is based upon a recombination of separator samples of oil and gas from the State 23-1 Well. We feel that this report shows conclusively that the original reservoir fluid was a single phase gas system and that the retrograde liquid left in the reservoir at the time of sampling was negligible, being only approximately 0.4% of the total hydrocarbon pore volume. The curve on page six of this report shows that at reservoir temperature of 170 degrees Fahrenheit a maximum of only 6% retrograde will occur as reservoir pressure drops to 1700 psig. As a further pressure drop takes place in the reservoir, even a portion of that 6% will re-vaporize and be produced.

NUCORP ENERGY, INC.
STATE 23-1
Cap'ock Penn
Lea County, New Mexico

GOR - Scf/STBO

0
4000
8000
12000
16000
20000
24000
28000
32000
36000
40000

Projected

Actual

0
200
400
600
800
1000
1200
1400
1600
1800
2000

GAS PRODUCED - MMcf

We believe that this is sufficient evidence that the State 23-1 is completed in a gas reservoir and that no waste is occurring by producing the well at the 10,000/1 Gas/Oil Ratio granted by the subject order.

As regards reservoir size, geological data, of course, indicates a somewhat limited reservoir. The bottom hole pressure buildup data has been utilized to simulate computer models of idealized sizes and shapes of the reservoir as well as possible location of the well in relation to the boundaries. By trial and error, and relating the simulations to actual production, we now feel that the reservoir covers between 200 and 250 acres.

It is hoped that the foregoing will satisfy the provisions and requirements of Division Order No. R-6503 and that the GOR limitation of 10,000/1 can be continued in effect in this pool.

Yours very truly,

R. H. Denman

R. H. Denman
Vice President

RHD/jr
Encl.

cc: Mr. W. Thomas Kellahin
Post Office Box 1769
Santa Fe, New Mexico 87501

NUCORP ENERGY, INC.

STATE 23-1

LEA COUNTY, NEW MEXICO

1980	Monthly Oil Allowable	Actual BBls. Produced	Gas Produced MCF	Gas/Oil Ratio	FTP	BHP
April	5760	2294	17953	7.826		4000
May	5952	5521	42892	7.769	1400	
June	5760	4428	43975	9.931	1700	
July	5952	4411	45714	10.364	1700	
August	5952	4496	45122	10.036	1600	
September	3060	3003	34148	11.371	1510	3370
October	3162	3412	43503	12.750	*	
November	3060	2648	44137	16.668	*	
December	3162	1766	32839	18.595	1525	
1981						
January	5890	2678	39251	14.656	1500	
Total	47,710	34,657	389,534	11.240		

*None recorded

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

Reservoir Fluid Study

for

NUCORP ENERGY, INC.

State 23 No. 1 Well
East Caprock Penn Field
Lea County, New Mexico

7501 STEMMONS FREEWAY BOX 47547 DALLAS TEXAS 75247 214 631 6270

CORE LABORATORIES, INC.

October 13, 1980

P. L. Moses
Manager
Reservoir Fluid Analysis

Nucorp Energy, Inc.
700 Crown Tower
8700 Crown Hill Blvd.
San Antonio, TX 78209

Attention: Mr. R. H. Denman

Subject: Reservoir Fluid Study
State 23 No. 1 Well
East Caprock Penn Field
Lea County, New Mexico
Our File Number: RFL 80709

Gentlemen:

Samples of separator gas and liquid were collected from the subject well on September 27, 1980, and were delivered to our laboratory in Dallas. A reservoir fluid study was performed using these samples, and the results are presented in this report.

The separator products were physically recombined in the producing gas-liquid ratio of 10621 standard cubic feet of separator gas per barrel of separator liquid. The mixture was examined in a visual cell at the reservoir temperature of 170°F., and was found to have a retrograde dew point pressure of 3990 psig. This is essentially the same as the original reservoir pressure, 4000 psig.

A constant-volume depletion was performed, and the maximum retrograde liquid observed was 6.0 percent of the volume at the dew point. At the current reservoir pressure of 3370 psig, the retrograde liquid volume was very small, approximately 0.4 percent. We interpret this to mean that the original reservoir fluid was a single-phase gas system, and that some retrograde liquid has accumulated in the reservoir at this time.

The separator gas and liquid compositions were measured by gas chromatography and low temperature fractional distillation, respectively. The well stream composition was calculated on the basis of the producing gas-liquid ratio. All of the compositional data are presented on page two.

It was a pleasure to perform this reservoir fluid study for you. Please let us know if you have any questions or comments concerning the data or if we may be of any further assistance.

Very truly yours,

CORE LABORATORIES, INC.

James R. Fortner

James R. Fortner
Assistant Manager
Reservoir Fluid Analysis

JRF:JB:bt
5 cc: Addressee

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

File RFL 80709

Company Nucorp Energy, Inc. Date Sampled September 27, 1980

Well State 23 No. 1 County Lea

Field East Caprock Penn State New Mexico

FORMATION CHARACTERISTICS

Formation Name	Pennsylvanian
Date First Well Completed	February, 1980
Original Reservoir Pressure (Approx.)	4000 PSIG @ Ft.
Original Produced Gas-Liquid Ratio (Approx.)	6318 SCF/Bbl
Production Rate	192 Bbls/Day
Separator Pressure and Temperature	PSIG °F.
Liquid Gravity at 60°F.	54 °API
Datum	Ft. Subsea

WELL CHARACTERISTICS

Elevation	4335.3 GL Ft.
Total Depth	11264 Ft.
Producing Interval	10353-10361 Ft.
Tubing Size and Depth	2-3/8 In. to 10244 Ft.
Open Flow Potential	MMSCF/Day
Last Reservoir Pressure	3370 PSIG @ 10200 Ft.
Date	September 23, 1980
Reservoir Temperature*	168 °F. @ 10200 Ft.
Status of Well	Shut in 5 days
Pressure Gauge	Amerada

SAMPLING CONDITIONS

Flowing Tubing Pressure		1510	PSIG
Flowing Bottom Hole Pressure		2465	PSIG
Primary Separator Pressure		715	PSIG
Primary Separator Temperature		72	°F.
Secondary Separator Pressure			PSIG
Secondary Separator Temperature			°F.
Field Stock Tank Liquid Gravity		63.6	°API @ 60°F.
Primary Separator Gas Production Rate		1660	MSCF/Day
Pressure Base	14.65 PSIA		
Temperature Base	60 °F.		
Compressibility Factor (F_{pv})	1.096		
Gas Gravity (Laboratory)	0.721		
Gas Gravity Factor (F_g)	0.9122		
Separator Liquid Production Rate @ 72°F.		156.3	Bbls/Day
Primary Separator Gas/Separator Liquid Ratio		10621	SCF/Bbl
	or	94.15	Bbls/MMSCF
Sampled by		Clementson Engrs., Inc.	

REMARKS:
*Temperature extrapolated to 10357 Ft. = 170°F.

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

File RFL 80709

Well State 23 No. 1

HYDROCARBON ANALYSES OF SEPARATOR PRODUCTS AND CALCULATED WELL STREAM

Component	Separator Liquid Mol Percent	Separator Gas Mol Percent	Separator Gas GPM	Well Stream Mol Percent	Well Stream GPM
Hydrogen Sulfide	0.00	0.00		0.00	
Carbon Dioxide	0.17	0.33		0.31	
Nitrogen	0.13	2.77		2.49	
Methane	19.81	77.28		71.20	
Ethane	12.01	11.36	3.021	11.43	3.039
Propane	15.23	5.49	1.502	6.52	1.784
iso-Butane	3.71	0.66	0.215	0.98	0.319
n-Butane	9.84	1.36	0.426	2.26	0.708
iso-Pentane	3.58	0.27	0.098	0.62	0.226
n-Pentane	4.10	0.26	0.094	0.67	0.241
Hexanes	5.70	0.12	0.049	0.71	0.290
Heptanes plus	25.72	0.10	0.045	2.81	1.450
	100.00	100.00	5.450	100.00	8.057

Properties of Heptanes plus				
API gravity @ 60°F.	49.5			
Specific gravity @ 60/60°F.	0.7818			0.782
Molecular weight	128	103		128

Calculated separator gas gravity (air=1.000) = 0.721

Calculated gross heating value for separator gas = 1213 BTU per cubic foot of dry gas @ 14.65 psia and 60°F.

Primary separator gas collected @ 715 psig and 72 °F.

Primary separator liquid collected @ 715 psig and 72 °F.

Primary separator gas/separator liquid ratio 10621 SCF/Bbl @ 72°F.

Primary separator gas/well stream ratio 894.06 MSCF/MMSCF

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

File RFL 80709

Well State 23 No. 1

PRESSURE-VOLUME RELATIONS OF RESERVOIR FLUID AT 170°F.
(Constant Composition Expansion)

Pressure PSIG		Relative Volume	Deviation Factor Z
5000		0.8945	0.928
4700		0.9197	0.897
4400		0.9495	0.867
4315		0.9595	0.859
3990	Dew Point Pressure	1.0000	0.829
3850		1.0202	
3700		1.0448	
3500		1.0823	
3250		1.1367	
2950		1.2265	
2600		1.3718	
2100		1.7173	
1800		2.0443	
1660		2.2447	
1400		2.7279	
1200		3.2497	
1070		3.7076	
905		4.4765	

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

File RFL 80709

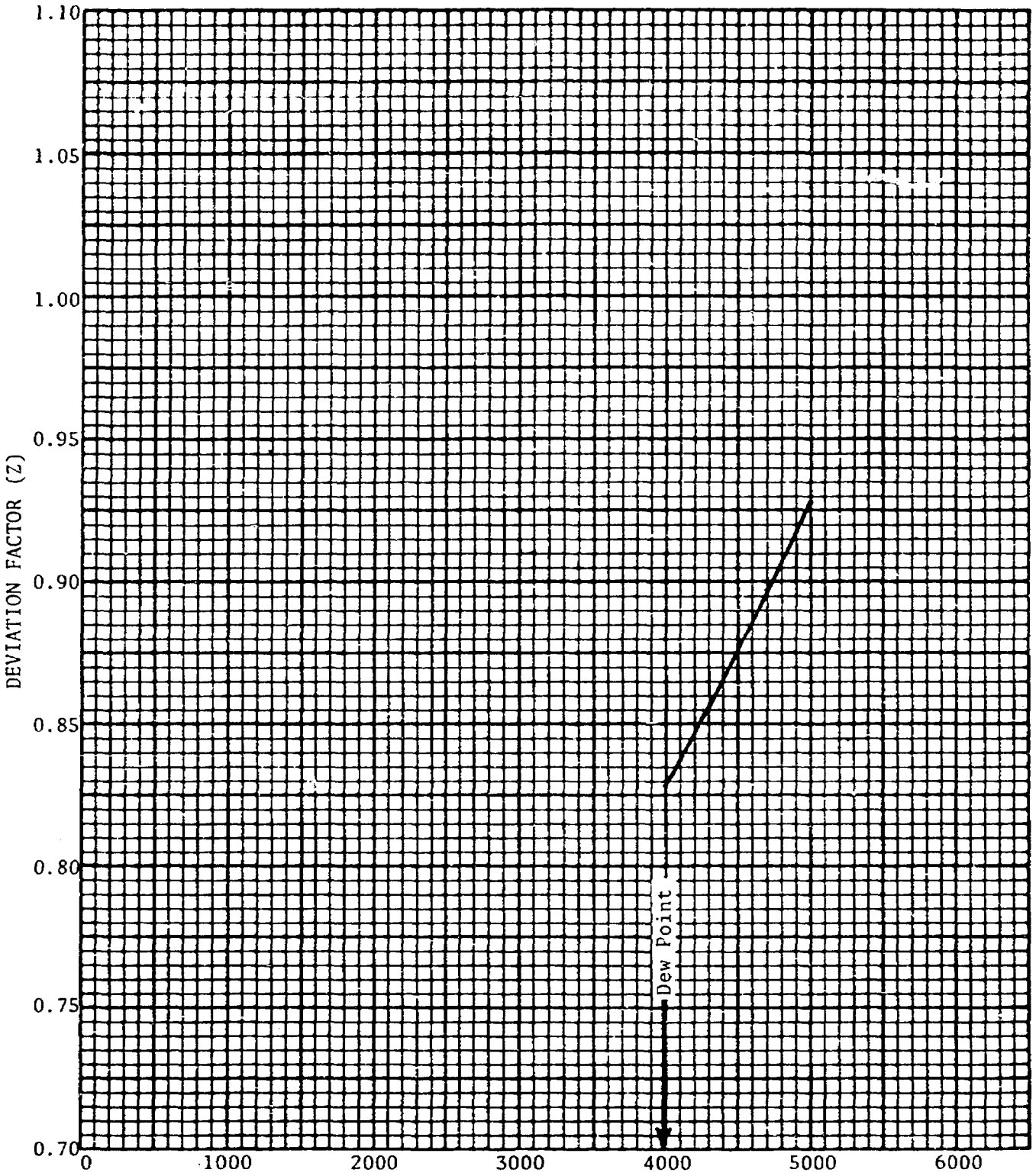
Well State 23 No. 1

RETROGRADE CONDENSATION DURING GAS DEPLETION AT 170°F.

Pressure PSIG		Retrograde Liquid Volume Percent of Hydrocarbon Pore Space
3990	Dew Point Pressure	0.0
3850		Trace
3700		0.1
3500		0.2
3300	First Depletion Level	0.4
2700		2.8
2200		5.2
1700		6.0
1200		5.9
700		5.5
0		4.0

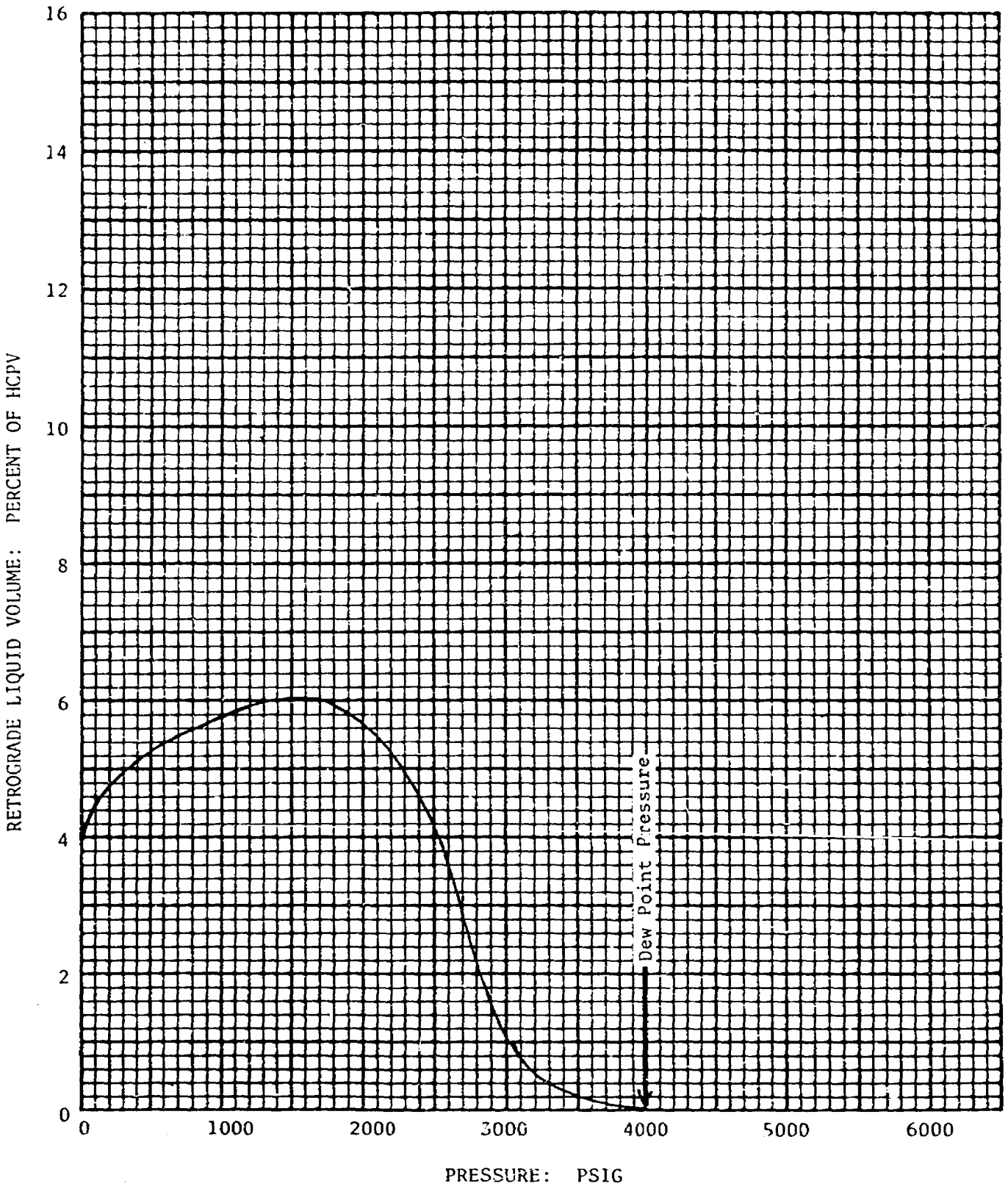
DEVIATION FACTOR Z AT 170°F.

Company NUCORP ENERGY, INC. Formation PENNSYLVANIAN
Well STATE 23 NO. 1 County LEA
Field EAST CAPROCK PENN State NEW MEXICO



RETROGRADE LIQUID VOLUME DURING DEPLETION AT 170°F.

Company NUCORP ENERGY, INC. Formation PENNSYLVANIAN
Well STATE 23 NO. 1 County LEA
Field EAST CAPROCK PENN State NEW MEXICO



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

March 6, 198i

Nucorp Energy, Inc.
700 Crown Tower
8700 Crownhill Boulevard
San Antonio, Texas 78209

Re: Division Order No. R-6503

Gentlemen:

Upon the application of Nucorp Energy, Inc. the Division entered the subject order establishing a special 10,000 to 1 gas-oil ratio limitation for the East Caprock-Pennsylvanian Pool in Lea County, New Mexico.

The order provided further that on or before March 1, 1981, Nucorp was to submit data to the Director of the Division demonstrating that said pool could continue to be produced at a gas-oil ratio of 10,000 to 1 without waste and establishing the size of the reservoir being drained.

To date we have no record of receipt of this material and we have administratively extended the filing date to March 31, 1981. If the required data is not received by that time the Division will take action to rescind the special gas-oil ratio limit returning the pool to the regular 2000 to 1 limitation of our general rules.

Sincerely,

R. L. STAMETS
Technical Support Chief

RLS/fd

cc: OCD Hobbs
Tom Kellahin

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7047
Order No. R-6503

APPLICATION OF NUCORP ENERGY INC.
FOR A SPECIAL GAS-OIL RATIO
LIMITATION, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 15, 1980, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 6th day of November, 1980, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Nucorp Energy Inc., seeks a special gas-oil ratio limitation of 10,000 to one, retroactive to April 18, 1980, for the East Caprock-Pennsylvanian Pool, Lea County, New Mexico.

(3) That said East Caprock-Pennsylvanian Pool is currently a one-well pool of unknown extent being developed only by applicant's State 23 Well No. 1 located in Unit K of Section 23, Township 12 South, Range 32 East, NMPM, Lea County, New Mexico.

(4) That the evidence presently available indicates that said East Caprock-Pennsylvanian Pool may be produced at a limiting gas-oil ratio of 10,000 to one without waste.

(5) That the applicant, on or before March 1, 1981, should submit data to the Director of the Division as to the size of the reservoir being drained by said State 23 Well No. 1, and

demonstrating that the East Caprock-Pennsylvanian Pool may continue to be produced at a gas-oil ratio of 10,000 to one without waste.

(6) That the Director of the Division should be permitted to reopen this case, at his option, for further testimony relative to the proper gas-oil ratio limitation or spacing unit size following receipt of the data required in Finding No. (5) above.

(7) That the application for special gas-oil ratio limitation should be approved effective May 1, 1980.

IT IS THEREFORE ORDERED:

(1) That effective May 1, 1980, a special gas-oil ratio of 10,000 cubic feet of gas per barrel of oil is hereby established for the East Caprock-Pennsylvanian Pool, as heretofore defined and described, in Lea County, New Mexico.

IT IS FURTHER ORDERED:

(1) That the applicant, Nucorp Energy Inc., on or before March 1, 1981, shall submit data to the Director of the Division demonstrating that the East Caprock-Pennsylvanian Pool may continue to be produced at a gas-oil ratio of 10,000 to one without waste and establishing the size of the reservoir being drained by said State 23 Well No. 1.

(2) That following receipt of the data required in Finding No. (5) of this order the Director of the Division may, at his option, reopen this case for further testimony relative to the proper gas-oil ratio limitation or spacing unit size.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

S E
fd/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

November 10, 1980

Re: CASE NO. 7047
ORDER NO. R-6503

Mr. Thomas Kellahin
Kellahin & Kellahin
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

Applicant:

~~Nucorp Energy Inc.~~

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD _____
Artesia OCD X
Aztec OCD _____

Other _____

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
15 October 1980

EXAMINER HEARING

IN THE MATTER OF:

Application of Nucorp Energy Inc. for a special gas/oil ratio limitation, Lea County, New Mexico.

CASE 7047

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Ernest L. Padilla, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant: W. Thomas Kellahin, Esq.
KELLAHIN & KELLAHIN
500 Don Gaspar
Santa Fe, New Mexico 87501

I N D E X

E X H I B I T S

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

MR. STAMETS: We will call next Case 7047.

MR. PADILLA: Application of Nucorp Energy, Inc., for a special gas/oil ratio limitation, Lea County, New Mexico.

MR. KELLAHIN: Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of the applicant, and I have one witness.

MR. STAMETS: I'd like to have the witness stand and be sworn, please.

(Witness sworn.)

RICHARD DENMAN

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Denman, would you please state your name and occupation and by whom you're employed?

A. My name is Richard H. Denman. I'm Vice-President in charge of engineering administration of the Nucorp Energy, Inc., in San Antonio, Texas.

Q. You're a petroleum engineer by profession?

A. That's right.

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

Q. And have you previously testified before the Division as a petroleum engineer?

A. I have.

MR. KELLAHIN: We tender Mr. Denman as an expert witness.

MR. STAMETS: He's considered qualified.

Q. Mr. Denman, would you please refer to what we've marked as Applicant Exhibit Number One and identify that for us?

A. This is a New Mexico State Form C-102, which would be our application to drill the subject well, the well in question. It's Section 23, Township 12 South, Range 32 East, in Lea County, New Mexico.

Q. Has this well been drilled and completed?

A. It has.

Q. And when was it completed for first production?

A. It was ready for production on February 25th, this year, 1980.

Q. Why have you sought this particular application before the Oil Conservation Division, Mr. Denman?

A. The well is a high ratio -- or was classified as a high ratio oil well, and as such, is limited to the 2000-to-1 cubic feet per barrel requirement, and we have gotten it pretty badly over produced and we need some

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

relief is the problem.

Q. In that regard, Mr. Denman, let me direct your attention to Exhibit Number Two and have you identify that.

A. This is just a tabulation of the oil and gas production since the well first went on production in April.

First production was April the 18th, so it didn't produce the full month of April, but you can see by the 2000-to-1, based on that oil allowable, we were not over produced in April but we've been badly over produced every other month.

Q. What is the pool or formation that this well produces from?

A. This is from the Pennsylvanian.

Q. And what is the pool designation for this Pennsylvanian formation?

A. It's East Caprock Pennsylvanian.

Q. Are there any other wells completed in the East Caprock Pennsylvanian Pool?

A. No, sir.

Q. Would you refer to Exhibit Number Three and identify that?

A. This is a build-up pressure which was run in September, just last month, and indicates a maximum pres-

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

sure of 3268 at the depth of -- test depth of 10,200. It's somewhat more than that at the mid-point of the perforations. The perforations are 10,353 to 61 and we figure that the bottom hole pressure really is about 3380 at the perforations.

Q. Mr. Denman, do you have an opinion as to whether or not the subject well can be effectively and efficiently produced at gas/oil ratio rates in excess of 2000-to-1?

A. We believe it can.

Q. And do you have an opinion as to what that rate ought to be?

A. We feel that a gas/oil ratio of 10,000-to-1 is not unreasonable.

Q. Let me direct your attention to Exhibit Number Four and have you explain this exhibit.

A. At the time the build-up pressure was run in September, once we'd run a preliminary build-up we did some drawdown work. We produced the well at a constant rate, and during this drawdown we obtained companion separator samples, oil and gas, which were forwarded to CORE Laboratory in Dallas.

Q. What was the purpose of having the CORE Laboratories analyze the reservoir fluid?

A. We wanted to find out what phase or what condition the fluid was in in the reservoir.

Q. And what conclusion is reached by the laboratory analysis?

A. The laboratory in their cover letter, paragraph three, makes the statement that the current reservoir pressure of 3370 psig, the retrograde liquid line was very small, approximately .4 of 1 percent, and we interpret this to mean that the original reservoir fluid was a single phase gas system and that some retrograde liquid has accumulated in the reservoir at this time.

Q. Paragraph two of the cover letter indicates original reservoir pressure of 2000 psig. Is that a calculated or a measured pressure?

A. That was from a build-up which was run very shortly after the well was completed and it was 4000 pounds, not 2000.

Q. I'm sorry.

A. This was from a build-up pressure that was run very shortly after that. We are not real satisfied with the validity of that pressure; however, it's in the ballpark; it's very close.

Q. Would you turn to page three of Exhibit Four and indicate for us the gas/oil ratio used in the sample conditions?

A. It's down at the bottom. The primary separator gas -- gas/oil ratio is 10,621 cubic feet per barrel.

Q. In your opinion, Mr. Denman, is the production from that well most effectively and efficiently pro-

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

duced at that GOR ratio?

A. We think it can be produced efficiently at that ratio. In fact, even if we pulled the well harder, I'm not sure that that ratio would be any greater than that, appreciably greater.

Q. In your opinion is production of this well at a GOR ratio of 10,000-to-1 causing liquids to otherwise be left and abandoned in the reservoir?

A. The very, very small percentage mentioned in the cover letter, which in turn as the pressure drops, this is in the retrograde phase, or retrograde region of the phase envelope, and as the pressure drops, this small amount of liquid would again vaporize as it -- as the pressure comes on down.

Q. Do you have any more comments or observations concerning Exhibit Number Four?

A. No, just I think it points up the fact that really this is -- is not an oil reservoir; it's a gas reservoir, and I think it's pretty plainly shown from this combined sample analysis.

Q. Were Exhibits One through Four prepared by you or obtained or compiled under your supervision and direction?

A. They were.

Q. And in your opinion, Mr. Denman, will

approval of this application be in the best interests of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, sir.

MR. KELLAHIN: We move the introduction of Exhibits One through Four.

MR. STAMETS: These exhibits will be admitted.

CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Denman, do you have any idea of the reservoir size?

A. No. That was one of the reasons for the build-up test in September. The build-up test that we took in March was very inconclusive. The reservoir had not been produced but just a very few days to clean it up and about a 12-hour test in an attempt to see what the well would do so we could file for completion and an allowable, but as far as determining any boundaries, we were unable to do so, and this information is not -- we've not had a chance to analyze the latter information.

Q. But it is your intention to analyze this?

A. That was the purpose of taking it, yes, sir.

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

Q. And I presume you would be willing to submit that information to the Division when you've obtained it?

A. Certainly would.

Q. In your application you've asked that this be retroactive to April the 18th, 1980. What -- what's so special about April the 18th?

A. April 18th was the date of first delivery to El Paso, and would completely wipeout our over production situation.

Q. That's kind of an odd date to fit into our proration system --

A. We could live with the 1st of May, I'm sure.

Q. Okay.

MR. STAMETS: Any other questions of this witness? He may be excused.

Anything further in this case?

The case will be taken under advisement.

(Hearing concluded.)

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd C.S.R.

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 7042,
heard on 10-15 1980.

Richard L. Stamets, Examiner
Oil Conservation Division

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
15 October 1980

EXAMINER HEARING

IN THE MATTER OF:

Application of Nucorp Energy Inc. for a special gas/oil ratio limitation, Lea County, New Mexico.

CASE 7047

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Ernest L. Padilla, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant: W. Thomas Kellahin, Esq.
KELLAHIN & KELLAHIN
500 Don Gaspar
Santa Fe, New Mexico 87501

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 435-7409

I N D E X

RICHARD DEHMAN

E X H I B I T S

MR. STAMETS: We will call next Case 7047.

MR. PADILLA: Application of Nucorp Energy, Inc., for a special gas/oil ratio limitation, Lea County, New Mexico.

MR. KELLAHIN: Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of the applicant, and I have one witness.

MR. STAMETS: I'd like to have the witness stand and be sworn, please.

(Witness sworn.)

RICHARD DENMAN

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Denman, would you please state your name and occupation and by whom you're employed?

A. My name is Richard H. Denman. I'm Vice-President in charge of engineering administration of the Nucorp Energy, Inc., in San Antonio, Texas.

Q. You're a petroleum engineer by profession?

A. That's right.

Q And have you previously testified before the Division as a petroleum engineer?

A I have.

MR. KELLAHIN: We tender Mr. Denman as an expert witness.

MR. SEMETS: He's considered qualified.

Q Mr. Denman, would you please refer to what we've marked as Applicant Exhibit Number One and identify that for us?

A This is a New Mexico State Form C-102, which would be our application to drill the subject well, the well in question. It's Section 23, Township 12 South, Range 32 East, in Lea County, New Mexico.

Q Has this well been drilled and completed?

A It has.

Q And when was it completed for first production?

A It was ready for production on February 25th, this year, 1980.

Q Why have you sought this particular application before the Oil Conservation Division, Mr. Denman?

A The well is a high ratio -- or was classified as a high ratio oil well, and as such, is limited to the 2000-to-1 cubic feet per barrel requirement, and we have gotten it pretty badly over produced and we need some

relief is the problem.

Q In that regard, Mr. Penman, let me direct your attention to Exhibit Number Two and have you identify that.

A This is just a tabulation of the oil and gas production since the well first went on production in April.

First production was April the 18th, so it didn't produce the full month of April, but you can see by the 2000-to-1, based on that oil allowable, we were not over produced in April but we've been badly over produced every other month.

Q What is the pool or formation that this well produces from?

A This is from the Pennsylvanian.

Q And what is the pool designation for this Pennsylvanian formation?

A It's East Caprock Pennsylvanian.

Q Are there any other wells completed in the East Caprock Pennsylvanian Pool?

A No, sir.

Q Would you refer to Exhibit Number Three and identify that?

A This is a build-up pressure which was run in September, just last month, and indicates a maximum pres-

sure of 3208 at the depth of -- test depth of 10,200. It's somewhat more than that at the mid-point of the perforations. The perforations are 10,312 to 61 and we figure that the bottom hole pressure really is about 3380 at the perforations.

Q Mr. Denman, do you have an opinion as to whether or not the subject well can be effectively and efficiently produced at gas/oil ratio rates in excess of 2000-to-1?

A We believe it can.

Q And do you have an opinion as to what that rate ought to be?

A We feel that a gas/oil ratio of 10,000-to-1 is not unreasonable.

Q Let me direct your attention to Exhibit Number Four and have you explain this exhibit.

A At the time the build-up pressure was run in September, once we'd run a preliminary build-up we did some drawdown work. We produced the well at a constant rate, and during this drawdown we obtained companion separator samples, oil and gas, which were forwarded to CORE Laboratory in Dallas.

Q What was the purpose of having the CORE Laboratories analyze the reservoir fluid?

A We wanted to find out what phase or what condition the fluid was in in the reservoir.

Q And what conclusion is reached by the laboratory analysis?

A. The laboratory in their cover letter, paragraph three, makes the statement that the current reservoir pressure of 3370 psia, the retrograde liquid line was very small, approximately .4 of 1 percent, and we interpret this to mean that the original reservoir fluid was a single phase gas system and that some retrograde liquid has accumulated in the reservoir at this time.

Q. Paragraph two of the cover letter indicates original reservoir pressure of 2000 psig. Is that a calculated or a measured pressure?

A. That was from a build-up which was run very shortly after the well was completed and it was 4000 pounds, not 2000.

Q. I'm sorry.

A. This was from a build-up pressure that was run very shortly after that. We are not real satisfied with the validity of that pressure: however, it's in the ballpark; it's very close.

Q. Would you turn to page three of Exhibit Four and indicate for us the gas/oil ratio used in the sample conditions?

A. It's down at the bottom. The primary separator gas -- gas/oil ratio is 10,621 cubic feet per barrel.

Q. In your opinion, Mr. Denman, is the production from that well most effectively and efficiently pro-

duced at that GOR ratio?

A. It [illegible] can be produced efficiently at that ratio. In fact, even if we pushed the well harder, I'm not sure that that ratio would be any greater than that, appreciably greater.

Q. In your opinion is production of this well at a GOR ratio of 10,000-to-1 causing liquids to otherwise be left and abandoned in the reservoir?

A. The very, very small percentage mentioned in the cover letter, which in turn as the pressure drops, this is in the retrograde phase, or retrograde region of the phase envelope, and as the pressure drops, this small amount of liquid would again vaporize as it -- as the pressure comes on down.

Q. Do you have any more comments or observations concerning Exhibit Number Four?

A. No, just I think it points up the fact that really this is -- is not an oil reservoir; it's a gas reservoir, and I think it's pretty plainly shown from this combined sample analysis.

Q. Were Exhibits One through Four prepared by you or obtained or compiled under your supervision and direction?

A. They were.

Q. And in your opinion, Mr. Denman, will

approval of this application be in the best interests of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, sir.

MR. KELLAHIN: We move the introduction of Exhibits One through Four.

MR. STAMETS: These exhibits will be admitted.

CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Denman, do you have any idea of the reservoir size?

A. No. That was one of the reasons for the build-up test in September. The build-up test that we took in March was very inconclusive. The reservoir had not been produced but just a very few days to clean it up and about a 12-hour test in an attempt to see what the well would do so we could file for completion and an allowable, but as far as determining any boundaries, we were unable to do so, and this information is not -- we've not had a chance to analyze the latter information.

Q. But it is your intention to analyze this?

A. That was the purpose of taking it, yes, sir.

Q And a procedure you would be willing to submit that information to the Division when you've obtained it?

A Certainly would.

Q In your application you've asked that this be retroactive to April the 18th, 1987. What -- what's so special about April the 18th?

A April 18th was the date of first delivery to El Paso, and would completely wipeout our over production situation.

Q That's kind of an odd date to fit into our proration system --

A We could live with the 1st of May, I'm sure.

Q Okay.

MR. STAMETS: Any other questions of this witness? He may be excused.

Anything further in this case?

The case will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

_____

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. _____, heard by me on _____, 19__.

_____, Examiner
Oil Conservation Division

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

NUCORP ENERGY INC.

K	23

1980

4335.3

1. Outline the acreage dedicated to subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

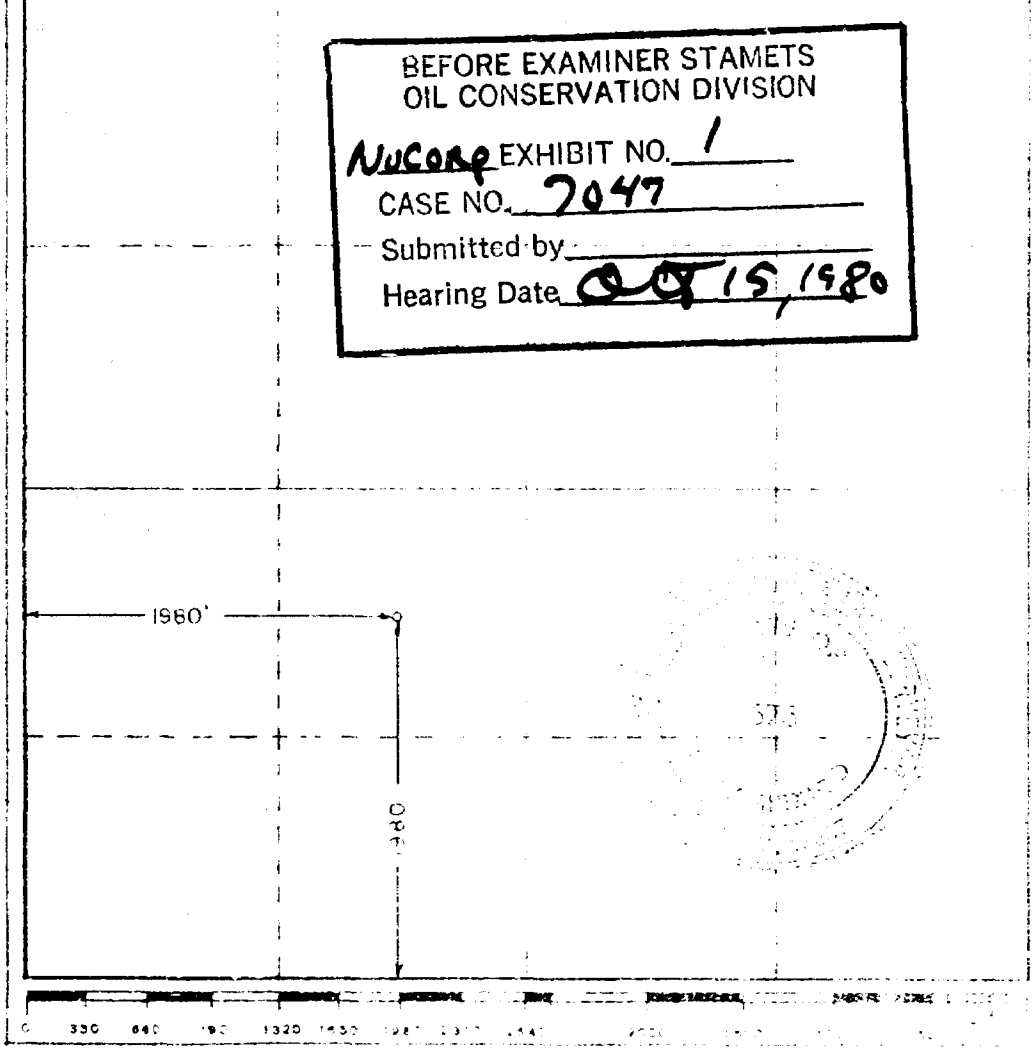
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization agreement or otherwise?

[ ] Yes [ ] No If answer is "yes," type of consolidation

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
NUCORP EXHIBIT NO. 1
CASE NO. 7047
Submitted by
Hearing Date OCT 15, 1980



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 knowledge and belief.

November 10, 1979

John W. West

JOHN W. WEST 676
RICK A. ROMERO 6666
GERALD L. KONEN 3239

NUCORP ENERGY, INC.

STATE 23-1

LEA COUNTY, NEW MEXICO

	Monthly Oil Allowable	Actual Bbls. Produced	Gas Produced MCF
April	5760	2294	17953
May	5952	5521	41820
June	5760	4428	43975
July	5952	4411	45714
August	5952	4496	43994
September	3060	3003	N/A
Total	32,436	24,153	193,456

Clementson

PETROLEUM AND NATURAL GAS

Engineers, Inc.

D-309 PETROLEUM CENTER
SAN ANTONIO, TEXAS 78209

TELEPHONE NO. 824-6192

October 7, 1980

For : NUCORP ENERGY, INC.
700 Crown Tower
8700 Crownhill Boulevard
San Antonio, TX 78209

Test Dates: September 19-23, 1980

Well: State No. 23 - Well No. 1

Field : East Caprock Pen Field

BOTTOM HOLE PRESSURE BUILDUP TEST

Date	Time	Hours	PSIG @ 10200'	Remarks:
9-19	12:00 NN	--	2509	Instruments to bottom; well is flowing.
	1:30 pm	0.0	2494	Well shut-in.
		.0167	2564	
		.0333	2586	
		.0667	2684	Test Depth = 10200'
		.1333	2761	
		.2500	2927	Amerada 10,000# BHP Gauge
		.5000	3043	Serial No. 45313
9-19	2:30 pm	1.0	3100	
		2.0	3127	
		3.0	3141	Perforations = 10,353-61
		4.0	3149	
9-19	7:30 pm	6.0	3162	
		8.0	3173	
		10	3180	
9-20	1:30 am	12	3191	
		15	3191	
		18	3198	
		21	3206	
9-20	1:30 pm	24	3213	
		28	3216	
		32	3223	
9-21	1:30 am	36	3226	
		40	3231	
		44	3236	
9-21	1:30 pm	48	3242	
		54	3248	
		60	3253	
		66	3258	
9-22	10:30 am	69	3261	Instruments off bottom

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
Nucorp EXHIBIT NO. 3
CASE NO. 7047
Submitted by
Hearing Date Oct 15, 1980

(Continued on page two)

Clementson

PETROLEUM AND NATURAL GAS

Engineers, Inc.

D-309 PETROLEUM CENTER
SAN ANTONIO, TEXAS 78209

TELEPHONE NO. 824-6192

October 7, 1980

For : NUCORP ENERGY, INC.

Test Dates: September 19-23, 1980

Well: State No. 23 - Well No. 1

Field : East Caprock Pen Field

BOTTOM HOLE PRESSURE BUILDUP TEST

Date	Time	Hours	PSIG @ 10200'	Remarks:
9-22	3:00 pm	73.5	3263	Instruments on bottom.
		78.5	3265	
		84.5	3267	
9-23	10:00 am	91.5	3268	Instruments off bottom.

Certified: CLEMENTSON ENGINEERS, INC.

R. C. Clementson

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

Reservoir Fluid Study

for

NUCORP ENERGY, INC.

State 23 No. 1 Well
East Caprock Penn Field
Lea County, New Mexico

7501 STEMMONS FREEWAY, BOX 47547, DALLAS, TEXAS 75247 · 214/631-8270

CORE LABORATORIES, INC.

October 13, 1980

P. L. Moses
Manager
Reservoir Fluid Analysis

Nucorp Energy, Inc.
700 Crown Tower
8700 Crown Hill Blvd.
San Antonio, TX 78209

Attention: Mr. R. H. Denman

Subject: Reservoir Fluid Study
State 23 No. 1 Well
East Caprock Penn Field
Lea County, New Mexico
Our File Number: RFL 80709

Gentlemen:

Samples of separator gas and liquid were collected from the subject well on September 27, 1980, and were delivered to our laboratory in Dallas. A reservoir fluid study was performed using these samples, and the results are presented in this report.

The separator products were physically recombined in the producing gas-liquid ratio of 10621 standard cubic feet of separator gas per barrel of separator liquid. The mixture was examined in a visual cell at the reservoir temperature of 170°F., and was found to have a retrograde dew point pressure of 3990 psig. This is essentially the same as the original reservoir pressure, 4000 psig.

A constant-volume depletion was performed, and the maximum retrograde liquid observed was 6.0 percent of the volume at the dew point. At the current reservoir pressure of 3370 psig, the retrograde liquid volume was very small, approximately 0.4 percent. We interpret this to mean that the original reservoir fluid was a single-phase gas system, and that some retrograde liquid has accumulated in the reservoir at this time.

The separator gas and liquid compositions were measured by gas chromatography and low temperature fractional distillation, respectively. The well stream composition was calculated on the basis of the producing gas-liquid ratio. All of the compositional data are presented on page two.

It was a pleasure to perform this reservoir fluid study for you. Please let u. know if you have any questions or comments concerning the data or if we may be of any further assistance.

Very truly yours,

CORE LABORATORIES, INC.

James R. Fortner

James R. Fortner
Assistant Manager
Reservoir Fluid Analysis

JRF:JB:bt
5 cc: Addressee

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

File RFL 80709

Company Nucorp Energy, Inc. Date Sampled September 27, 1980

Well State 23 No. 1 County Lea

Field East Caprock Penn State New Mexico

FORMATION CHARACTERISTICS

Formation Name	Pennsylvanian		
Date First Well Completed	February	, 1980	
Original Reservoir Pressure (Approx.)	4000	PSIG @	Ft.
Original Produced Gas-Liquid Ratio (Approx.)	6318		SCF/Bbl
Production Rate	192		Bbls/Day
Separator Pressure and Temperature		PSIG	°F.
Liquid Gravity at 60°F.	54		°API
Datum			Ft. Subsea

WELL CHARACTERISTICS

Elevation	4335.3 GL		Ft.
Total Depth	11264		Ft.
Producing Interval	10353-10361		Ft.
Tubing Size and Depth	2-3/8	In. to 10244	Ft.
Open Flow Potential			MMSCF/Day
Last Reservoir Pressure	3370	PSIG @ 10200	Ft.
Date	September 23	, 1980	
Reservoir Temperature*	168	°F. @ 10200	Ft.
Status of Well	Shut in 5 days		
Pressure Gauge	Amerada		

SAMPLING CONDITIONS

Flowing Tubing Pressure		1510	PSIG
Flowing Bottom Hole Pressure		2465	PSIG
Primary Separator Pressure		715	PSIG
Primary Separator Temperature		72	°F.
Secondary Separator Pressure			PSIG
Secondary Separator Temperature			°F.
Field Stock Tank Liquid Gravity		63.6	°API @ 60°F.
Primary Separator Gas Production Rate		1660	MSCF/Day
Pressure Base	14.65	PSIA	
Temperature Base	60	°F.	
Compressibility Factor (F_{pv})	1.096		
Gas Gravity (Laboratory)	0.721		
Gas Gravity Factor (F_g)	0.9122		
Separator Liquid Production Rate @ 72°F.		156.3	Bbls/Day
Primary Separator Gas/Separator Liquid Ratio		10621	SCF/Bbl
	or	94.15	Bbls/MMSCF
Sampled by		Clementson Engrs., Inc.	

REMARKS:
*Temperature extrapolated to 10357 Ft. = 170°F.

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

File RFL 80709

Well State 23 No. 1

HYDROCARBON ANALYSES OF SEPARATOR PRODUCTS AND CALCULATED WELL STREAM

Component	Separator Liquid Mol Percent	Separator Gas Mol Percent	Separator Gas GPM	Well Stream Mol Percent	Well Stream GPM
Hydrogen Sulfide	0.00	0.00		0.00	
Carbon Dioxide	0.17	0.33		0.31	
Nitrogen	0.13	2.77		2.49	
Methane	19.81	77.28		71.20	
Ethane	12.01	11.36	3.021	11.43	3.039
Propane	15.23	5.49	1.502	6.52	1.784
iso-Butane	3.71	0.66	0.215	0.98	0.319
n-Butane	9.84	1.36	0.426	2.26	0.708
iso-Pentane	3.58	0.27	0.098	0.62	0.226
n-Pentane	4.10	0.26	0.094	0.67	0.241
Hexanes	5.70	0.12	0.049	0.71	0.290
Heptanes plus	25.72	0.10	0.045	2.81	1.450
	100.00	100.00	5.450	100.00	8.057
Properties of Heptanes plus					
API gravity @ 60°F.	49.5				
Specific gravity @ 60/60°F.	0.7818			0.782	
Molecular weight	128	103		128	

Calculated separator gas gravity (air=1.000) = 0.721

Calculated gross heating value for separator gas = 1213 BTU per cubic foot of dry gas @ 14.65 psia and 60°F.

Primary separator gas collected @ 715 psig and 72 °F.

Primary separator liquid collected @ 715 psig and 72 °F.

Primary separator gas/separator liquid ratio 10621 SCF/Bbl @ 72°F.

Primary separator gas/well stream ratio 894.06 MSCF/MMSCF

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

File RFL 80709

Well State 23 No. 1

PRESSURE-VOLUME RELATIONS OF RESERVOIR FLUID AT 170°F.
(Constant Composition Expansion)

Pressure PSIG		Relative Volume	Deviation Factor Z
5000		0.8945	0.928
4700		0.9197	0.897
4400		0.9495	0.867
4315		0.9595	0.859
3990	Dew Point Pressure	1.0000	0.829
3850		1.0202	
3700		1.0448	
3500		1.0823	
3250		1.1367	
2950		1.2265	
2600		1.3718	
2100		1.7173	
1800		2.0443	
1660		2.2447	
1400		2.7279	
1200		3.2497	
1070		3.7076	
905		4.4765	

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

File RFL 80709

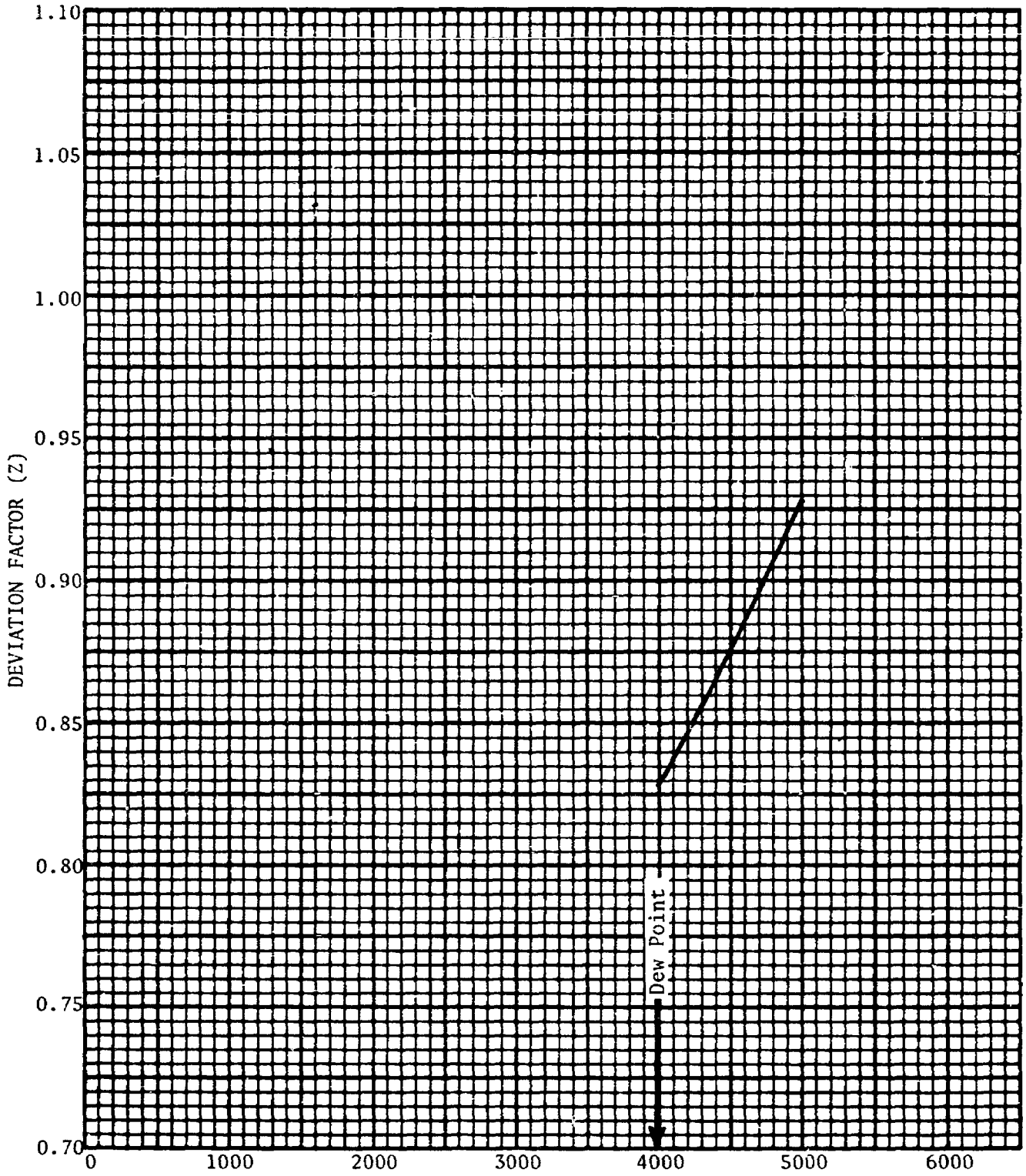
Well State 23 No. 1

RETROGRADE CONDENSATION DURING GAS DEPLETION AT 170°F.

Pressure PSIG		Retrograde Liquid Volume Percent of Hydrocarbon Pore Space
3990	Dew Point Pressure	0.0
3850		Trace
3700		0.1
3500		0.2
3300	First Depletion Level	0.4
2700		2.8
2200		5.2
1700		6.0
1200		5.9
700		5.5
0		4.0

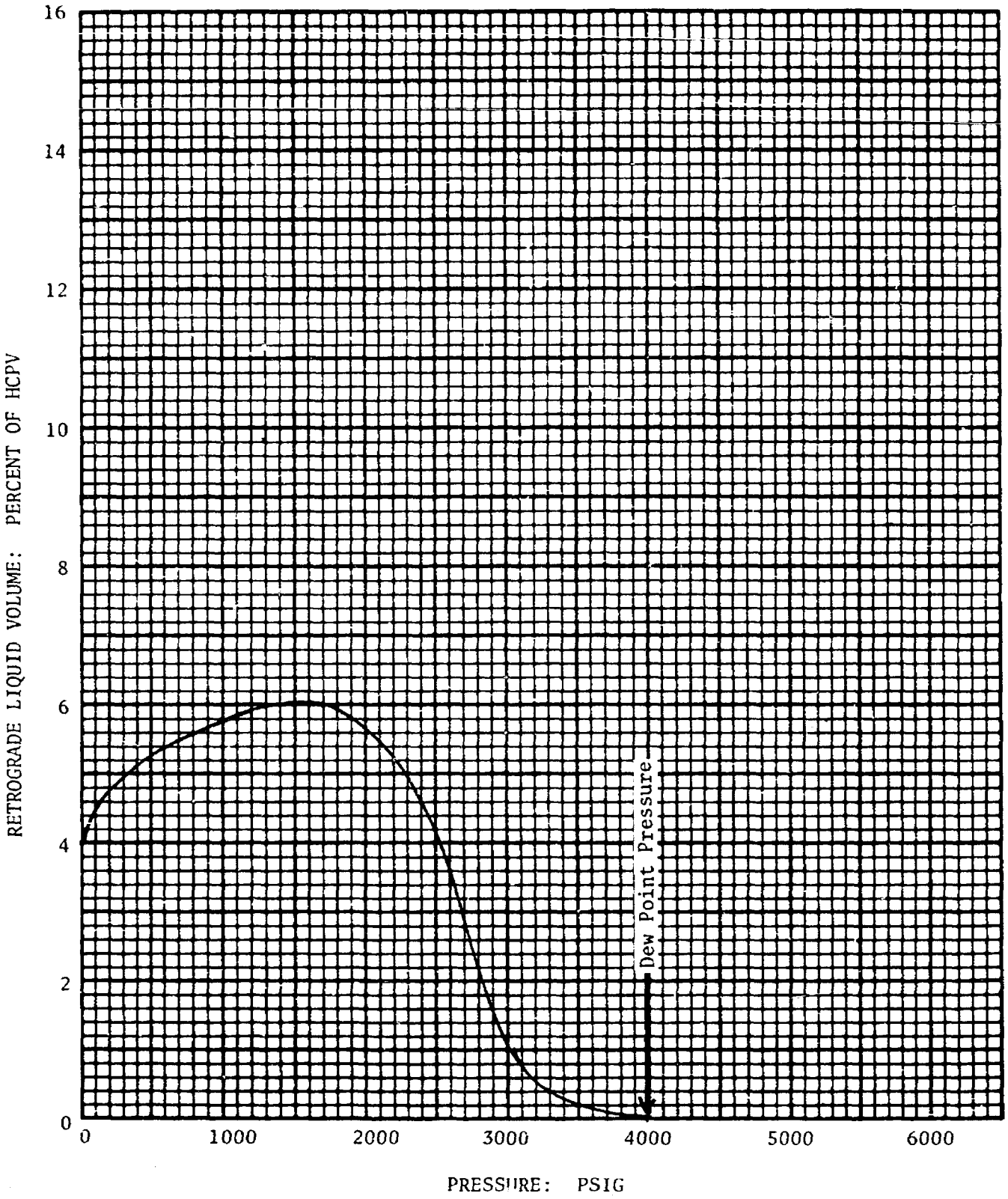
DEVIATION FACTOR Z AT 170°F.

Company NUCORP ENERGY, INC. **Formation** PENNSYLVANIAN
Well STATE 23 NO. 1 **County** LEA
Field EAST CAPROCK PENN **State** NEW MEXICO



RETROGRADE LIQUID VOLUME DURING DEPLETION AT 170°F.

Company NUCORP ENERGY, INC. **Formation** PENNSYLVANIAN
Well STATE 23 NO. 1 **County** LEA
Field EAST CAPROCK PENN **State** NEW MEXICO



...ATION AND ACREAGE ...

Operator: NUCORP ENERGY INC. State: ...

Well No.	Unit Letter	Section	Township	Range
1	K	23	South	East

Actual Footage Location of Well: 1980 feet from South line and 1980 feet from West line

Ground Level Elev.: 4335.3 Producing Formation: ...

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

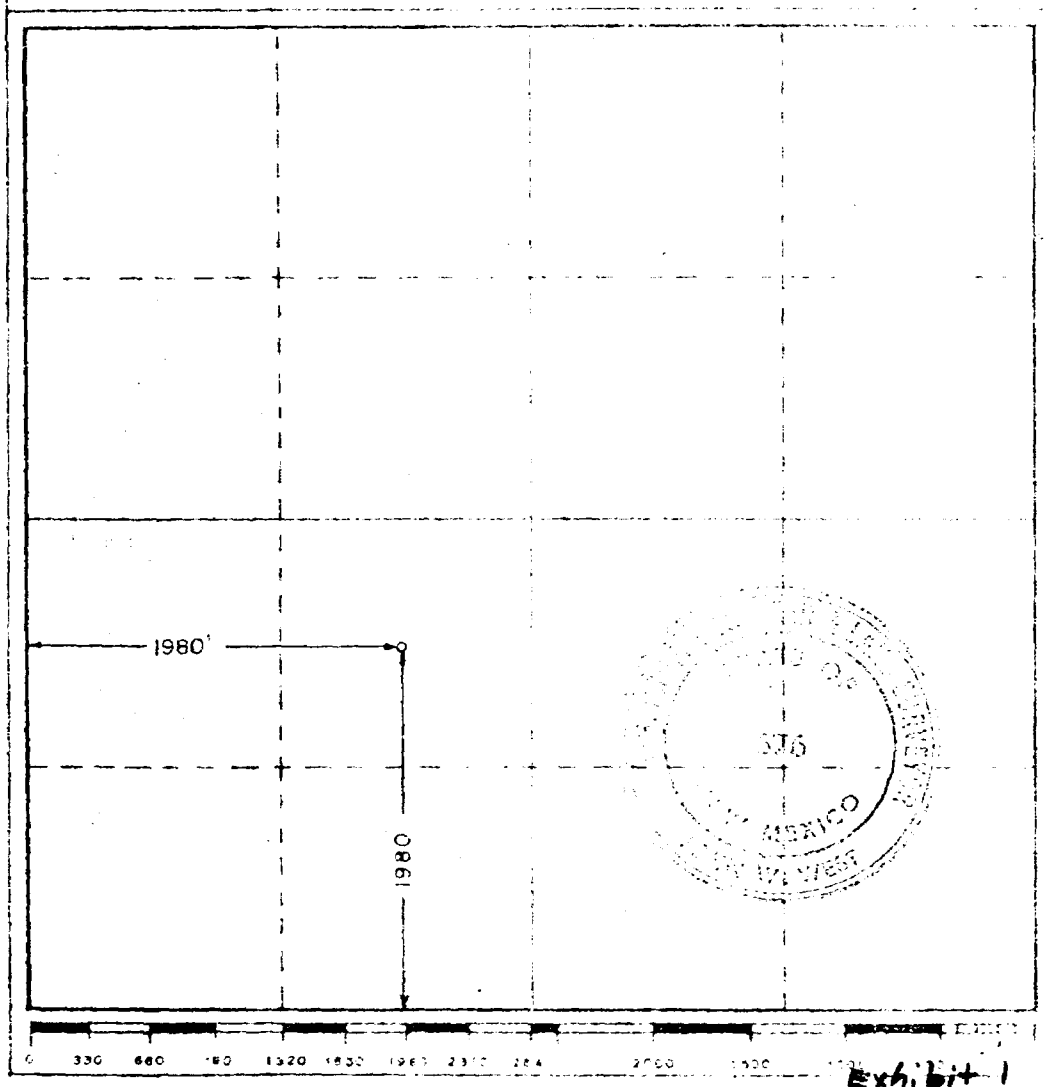
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling etc?

☐ Yes ☐ No If answer is "yes," type of consolidation ...

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) ...

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: ...

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 knowledge and belief.

November 10, 1979

Date Surveyed: ...

Registered Professional Engineer and/or Land Surveyor: JOHN W WEST 676
PATRICK A ROMERO 6668
Ronald J. Eidson 3239

Exhibit 1
Case D04>

NUCORP ENERGY, INC.

STATE 23-1

LEA COUNTY, NEW MEXICO

	Monthly Oil Allowable	Actual Bbls. Produced	Gas Produced MCF
April	5760	2294	17953
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June	5760	4428	43975
July	5952	4411	45714
August	5952	4496	43994
September	3060	3003	N/A
Total	32,436	24,153	193,456

Exhibit 2
Case 7047

Clementson
PETROLEUM AND NATURAL GAS
Engineers, Inc.

D-309 PETROLEUM CENTER
SAN ANTONIO, TEXAS 78209

TELEPHONE NO. 824-6192

October 7, 1980

For : NUCORP ENERGY, INC.
700 Crown Tower
8700 Crownhill Boulevard
San Antonio, TX 78209

Test Dates: September 19-23, 1980

Well: State No. 23 - Well No. 1

Field : East Caprock Pen Field

BOTTOM HOLE PRESSURE BUILDUP TEST

Date	Time	Hours	PSIG @ 10200'
9-19	12:00 NN	--	2509
	1:30 pm	0.0	2494
		.0167	2564
		.0333	2586
		.0667	2684
		.1333	2761
		.2500	2927
		.5000	3043
9-19	2:30 pm	1.0	3100
		2.0	3127
		3.0	3141
		4.0	3149
9-19	7:30 pm	6.0	3162
		8.0	3173
		10	3180
9-20	1:30 am	12	3191
		15	3191
		18	3198
		21	3206
9-20	1:30 pm	24	3213
		28	3216
		32	3223
9-21	1:30 am	36	3226
		40	3231
		44	3236
9-21	1:30 pm	48	3242
		54	3248
		60	3253
		66	3258
9-22	10:30 am	69	3261

Remarks:

Instruments to bottom; well is flowing.
Well shut-in.

Test Depth = 10200'

Amerada 10,000# BHP Gauge
Serial No. 45313

Perforations = 10,353-61

Instruments off bottom

(Continued on page two)

Exhibit 3
Case 7047

Clementson

PETROLEUM AND NATURAL GAS

Engineers, Inc.

TELEPHONE NO. 824-6192

D-309 PETROLEUM CENTER
SAN ANTONIO, TEXAS 78209

October 7, 1980

For : NUCORP ENERGY, INC.

Test Dates: September 19-23, 1980

Well: State No. 23 - Well No. 1

Field : East Caprock Pen Field

BOTTOM HOLE PRESSURE BUILDUP TEST

Date	Time	Hours	PSIG @ 10200'	Remarks:
9-22	3:00 pm	73.5	3263	Instruments on bottom.
		78.5	3265	
		84.5	3267	
9-23	10:00 am	91.5	3268	Instruments off bottom.

Certified: CLEMENTSON ENGINEERS, INC.

F. C. Clementson

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

Reservoir Fluid Study

for

NUCORP ENERGY, INC.

Exhibit 4
Case 7047

State 23 No. 1 Well
East Caprock Penn Field
Lea County, New Mexico

7501 STEMMONS FREEWAY, BOX 47547, DALLAS, TEXAS 75247 · 214/631-8270

CORE LABORATORIES, INC.

October 13, 1980

P. L. Moses
Manager
Reservoir Fluid Analysis

Nucorp Energy, Inc.
700 Crown Tower
8700 Crown Hill Blvd.
San Antonio, TX 78209

Attention: Mr. R. H. Denman

Subject: Reservoir Fluid Study
State 23 No. 1 Well
East Caprock Penn Field
Lea County, New Mexico
Our File Number: RFL 80709

Gentlemen:

Samples of separator gas and liquid were collected from the subject well on September 27, 1980, and were delivered to our laboratory in Dallas. A reservoir fluid study was performed using these samples, and the results are presented in this report.

The separator products were physically recombined in the producing gas-liquid ratio of 10621 standard cubic feet of separator gas per barrel of separator liquid. The mixture was examined in a visual cell at the reservoir temperature of 170°F., and was found to have a retrograde dew point pressure of 3990 psig. This is essentially the same as the original reservoir pressure, 4000 psig.

A constant-volume depletion was performed, and the maximum retrograde liquid observed was 6.0 percent of the volume at the dew point. At the current reservoir pressure of 3370 psig, the retrograde liquid volume was very small, approximately 0.4 percent. We interpret this to mean that the original reservoir fluid was a single-phase gas system, and that some retrograde liquid has accumulated in the reservoir at this time.

The separator gas and liquid compositions were measured by gas chromatography and low temperature fractional distillation, respectively. The well stream composition was calculated on the basis of the producing gas-liquid ratio. All of the compositional data are presented on page two.

It was a pleasure to perform this reservoir fluid study for you. Please let us know if you have any questions or comments concerning the data or if we may be of any further assistance.

Very truly yours,

CORE LABORATORIES, INC.

James R. Fortner

James R. Fortner
Assistant Manager
Reservoir Fluid Analysis

JRF:JB:bt
5 cc: Addressee

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

File RFL 80709

Company Nucorp Energy, Inc. Date Sampled September 27, 1980

Well State 23 No. 1 County Lea

Field East Caprock Penn State New Mexico

FORMATION CHARACTERISTICS

Formation Name	Pennsylvanian
Date First Well Completed	February, 1980
Original Reservoir Pressure (Approx.)	4000 PSIG @ Ft.
Original Produced Gas-Liquid Ratio (Approx.)	6318 SCF/Bbl
Production Rate	192 Bbls/Day
Separator Pressure and Temperature	PSIG °F.
Liquid Gravity at 60°F.	54 °API
Datum	Ft. Subsea

WELL CHARACTERISTICS

Elevation	4335.3 GL Ft.
Total Depth	11264 Ft.
Producing Interval	10353-10361 Ft.
Tubing Size and Depth	2-3/8 In. to 10244 Ft.
Open Flow Potential	MMSCF/Day
Last Reservoir Pressure	3370 PSIG @ 10200 Ft.
Date	September 23, 1980
Reservoir Temperature*	168 °F. @ 10200 Ft.
Status of Well	Shut in 5 days
Pressure Gauge	Amerada

SAMPLING CONDITIONS

Flowing Tubing Pressure	1510	PSIG
Flowing Bottom Hole Pressure	2465	PSIG
Primary Separator Pressure	715	PSIG
Primary Separator Temperature	72	°F.
Secondary Separator Pressure		PSIG
Secondary Separator Temperature		°F.
Field Stock Tank Liquid Gravity	63.6	°API @ 60°F.
Primary Separator Gas Production Rate	1660	MSCF/Day
Pressure Base	14.65 PSIA	
Temperature Base	60 °F.	
Compressibility Factor (F_{pv})	1.096	
Gas Gravity (Laboratory)	0.721	
Gas Gravity Factor (F_g)	0.9122	
Separator Liquid Production Rate @ 72°F.	156.3	Bbls/Day
Primary Separator Gas/Separator Liquid Ratio	10621	SCF/Bbl
or	94.15	Bbls/MMSCF
Sampled by	Clementson Engrs., Inc.	

REMARKS:
*Temperature extrapolated to 10357 Ft. = 170°F.

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

File RFL 80709

Well State 23 No. 1

HYDROCARBON ANALYSES OF SEPARATOR PRODUCTS AND CALCULATED WELL STREAM

Component	Separator Liquid Mol Percent	Separator Gas Mol Percent	Separator Gas GPM	Well Stream Mol Percent	Well Stream GPM
Hydrogen Sulfide	0.00	0.00		0.00	
Carbon Dioxide	0.17	0.33		0.31	
Nitrogen	0.13	2.77		2.49	
Methane	19.81	77.28		71.20	
Ethane	12.01	11.36	3.021	11.43	3.039
Propane	15.23	5.49	1.502	6.52	1.784
iso-Butane	3.71	0.66	0.215	0.98	0.319
n-Butane	9.84	1.36	0.426	2.26	0.708
iso-Pentane	3.58	0.27	0.098	0.62	0.226
n-Pentane	4.10	0.26	0.094	0.67	0.241
Hexanes	5.70	0.12	0.049	0.71	0.290
Heptanes plus	25.72	0.10	0.045	2.81	1.450
	100.00	100.00	5.450	100.00	8.057

Properties of Heptanes plus				
API gravity @ 60°F.	49.5			
Specific gravity @ 60/60°F.	0.7818			0.782
Molecular weight	128	103		128

Calculated separator gas gravity (air=1.000) = 0.721

Calculated gross heating value for separator gas = 1213 BTU per cubic foot of dry gas @ 14.65 psia and 60°F.

Primary separator gas collected @ 715 psig and 72 °F.

Primary separator liquid collected @ 715 psig and 72 °F.

Primary separator gas/separator liquid ratio 10621 SCF/Bbl @ 72°F.

Primary separator gas/well stream ratio 894.06 MSCF/MMSCF

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

File RFL 80709

Well State 23 No. 1

PRESSURE-VOLUME RELATIONS OF RESERVOIR FLUID AT 170°F.
(Constant Composition Expansion)

Pressure PSIG		Relative Volume	Deviation Factor Z
5000		0.8945	0.928
4700		0.9197	0.897
4400		0.9495	0.867
4315		0.9595	0.859
3990	Dew Point Pressure	1.0000	0.829
3850		1.0202	
3700		1.0448	
3500		1.0823	
3250		1.1367	
2950		1.2265	
2600		1.3718	
2100		1.7173	
1800		2.0443	
1660		2.2447	
1400		2.7279	
1200		3.2497	
1070		3.7076	
905		4.4765	

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

File RFL 80709

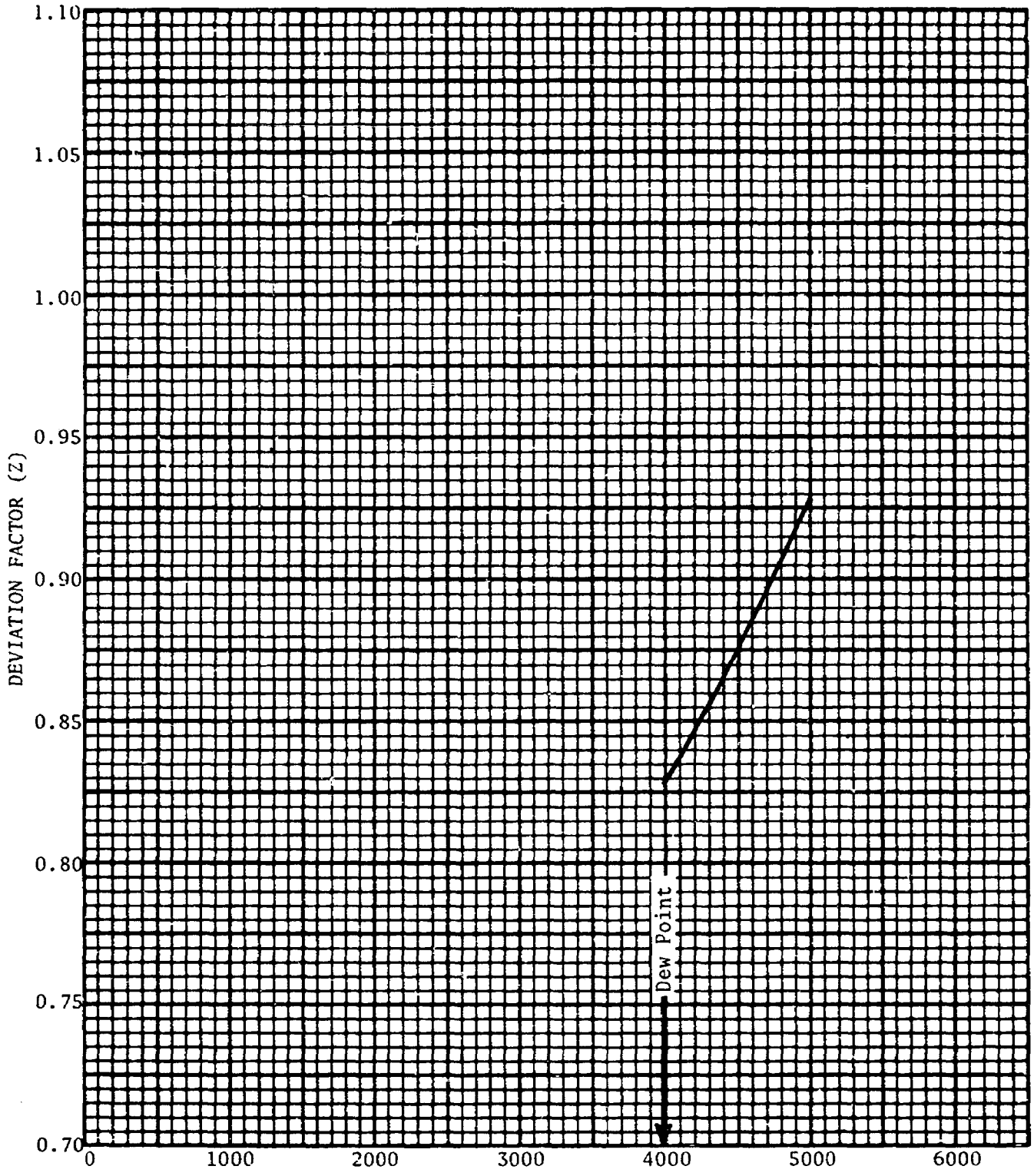
Well State 23 No. 1

RETROGRADE CONDENSATION DURING GAS DEPLETION AT 170°F.

Pressure PSIG		Retrograde Liquid Volume Percent of Hydrocarbon Pore Space
3990	Dew Point Pressure	0.0
3850		Trace
3700		0.1
3500		0.2
3300	First Depletion Level	0.4
2700		2.8
2200		5.2
1700		6.0
1200		5.9
700		5.5
0		4.0

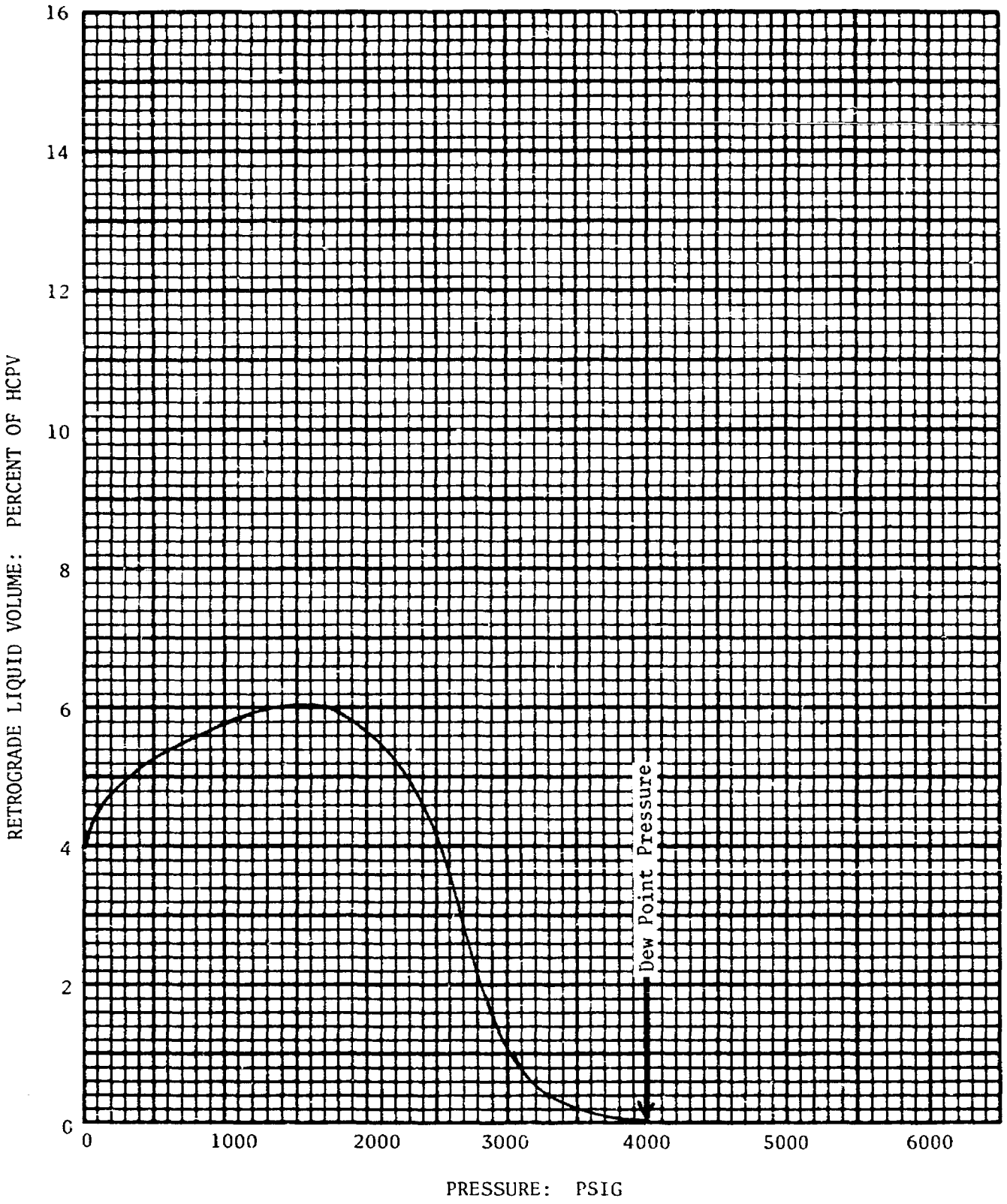
DEVIATION FACTOR Z AT 170°F.

Company NUCORP ENERGY, INC. **Formation** PENNSYLVANIAN
Well STATE 23 NO. 1 **County** LEA
Field EAST CAPROCK PENN **State** NEW MEXICO



RETROGRADE LIQUID VOLUME DURING DEPLETION AT 170°F.

Company NUCORP ENERGY, INC. Formation PENNSYLVANIAN
Well STATE 23 NO. 1 County LEA
Field EAST CAPROCK PENN State NEW MEXICO



Dockets Nos. 34-80 and 35-80 are tentatively set for October 29 and November 12, 1980. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 15, 1980

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

ALLOWABLE: (1) Consideration of the allowable production of gas for November, 1980, from fifteen prorated pools in Lea, Eddy, and Chaves Counties, New Mexico.

(2) Consideration of the allowable production of gas for November, 1980, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.

CASE 7044: Application of Harvey E. Yates Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Travis Penn Unit Area, comprising 400 acres, more or less, of State and Federal lands in Township 18 South, Range 28 East.

CASE 7045: Application of Texas Oil & Gas Corp. for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Atoka and Upper Morrow production in the wellbore of its Superior Federal Com. Well No. 1 located in Unit G of Section 8, Township 20 South, Range 29 East.

CASE 7046: Application of Cotton Petroleum Corporation for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Chacra and Pictured Cliffs production in the wellbores of wells in the South Blanco-Pictured Cliffs Pool located in Sections 1, 2, 3, 4, 9, 10, 11, 13, 23, and 24, Township 24 North, Range 4 West.

CASE 7047: Application of Nucorp Energy Inc. for a special gas-oil ratio limitation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a special gas-oil ratio limitation of 10,000 to one, retroactive to April 18, 1980, for the East Caprock-Pennsylvanian Pool.

CASE 7033: (Continued from October 1, 1980, Examiner Hearing)

Application of Adams Exploration Inc. for three non-standard proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of three 80-acre non-standard proration units in the Vada-Pennsylvanian Pool, comprising the following acreage: SE/4 NE/4 and NE/4 SE/4 of Section 12, N/2 NE/4 of Section 12, and S/2 SE/4 of Section 2, all in Township 9 South, Range 34 East.

CASE 7048: Application of Public Lands Exploration, Inc. for a pilot steam enhanced oil recovery project, Guadalupe County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot steam enhanced oil recovery project in the Santa Rosa formation by re-entering 2 wells and drilling 3 wells, all located in Unit A of Section 15, Township 11 North, Range 25 East.

CASE 7036: (Continued from October 1, 1980, Examiner Hearing)

Application of J. Gregory Merrion for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pictured Cliffs formation underlying the SE/4 of Section 34, Township 25 North, Range 6 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7049: Application of J. Gregory Merrion for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pictured Cliffs formation underlying the SW/4 of Section 35, Township 25 North, Range 6 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7050: Application of Maddox Energy Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp-Pennsylvanian formations underlying the N/2 of Section 23, Township 24 South, Range 28 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7051: Application of Petro Lewis Corporation for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Blinebry and Drinkard production in the wellbore of its L. G. Warlick "B" Well No. 2 located in Unit G of Section 19, Township 21 South, Range 37 East.

CASE 7052: Application of Gulf Oil Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the S/2 of Section 36, Township 18 South, Range 31 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7024: (Continued from September 17, 1980, Examiner Hearing)

Application of Southland Royalty Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 35, Township 18 South, Range 29 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7038: (Continued from October 1, 1980, Examiner Hearing)

Application of Natura Energy Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the San Andres formation underlying the NE/4 NE/4 of Section 6, Township 19 South, Range 39 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7053: Application of Amax Chemical Corporation for the amendment of Order No. R-111-A, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-111-A to extend the boundaries of the Potash-Oil Area to include the SE/4 NE/4 and NE/4 SE/4 of Section 24, Township 19 South, Range 29 East, and the S/2 NW/4 of Section 19, Township 19 South, Range 30 East.

CASE 7054: In the matter of the hearing called by the Oil Conservation Division on its own motion for an order creating, abolishing, and extending the vertical and horizontal limits of certain pools in Chaves, Eddy, Lea, and Roosevelt Counties, New Mexico:

(a) CREATE a new pool in Chaves County, New Mexico, classified as a gas pool for Abo production and designated as the East Bitter Lakes-Abo Gas Pool. The discovery well is Boyd Operating Company Blakemore Federal Well No. 1 located in Unit D of Section 20, Township 9 South, Range 26 East, NMPM. Said pool would comprise:

TOWNSHIP 9 SOUTH, RANGE 26 EAST, NMPM
Section 20: NW/4

(b) CREATE a new pool in Chaves County, New Mexico, classified as a gas pool for Wolfcamp production and designated as the East Bitter Lakes-Wolfcamp Gas Pool. The discovery well is Boyd Operating Company Blakemore Federal Well No. 1 located in Unit D of Section 20, Township 9 South, Range 26 East, NMPM. Said pool would comprise:

TOWNSHIP 9 SOUTH, RANGE 26 EAST, NMPM
Section 20: W/2

(c) CREATE a new pool in Chaves County, New Mexico, classified as an oil pool for Fusselman production and designated as the South Elkins-Fusselman Pool. The discovery well is Enserch Exploration, Inc. J. G. O'Brien Well No. 1 located in Unit E of Section 31, Township 7 South, Range 29 East, NMPM. Said pool would comprise:

TOWNSHIP 7 SOUTH, RANGE 29 EAST, NMPM
Section 31: NW/4

(d) ABOLISH the Cary-San Andres Pool in Lea County, New Mexico, described as:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
Section 17: NW/4

(e) EXTEND the Anderson Ranch-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 32 EAST, NMPM
Section 3: Lots 9, 10, 15 and 16

(f) EXTEND the Angell Ranch Atoka-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 27 EAST, NMPM
Section 13: S/2

(g) EXTEND the Blinebry Oil and Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM
Section 29: SW/4

(h) EXTEND the Boyd-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 24 EAST, NMPM
Section 13: N/2

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM
Section 1: W/2
Section 14: N/2

(i) EXTEND the Brown Queen-Grayburg Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 10 SOUTH, RANGE 26 EAST, NMPM
Section 25: SE/4 SW/4 and S/2 SE/4

(j) EXTEND the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 27 EAST, NMPM
Section 25: N/2

(k) EXTEND the Burton Flat-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 28 EAST, NMPM
Section 17: S/2
Section 20: N/2

(l) EXTEND the vertical limits of the Comanche Stateline Tansill-Yates Pool in Lea County, New Mexico, to include the Seven Rivers formation and redesignate said pool as the Comanche Stateline Tansill-Yates-Seven Rivers Pool, and extend the horizontal limits of said pool to include therein:

TOWNSHIP 26 SOUTH, RANGE 36 EAST, NMPM
Section 27: W/2 NW/4

(m) EXTEND the Indian Flats-Delaware Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 28 EAST, NMPM
Section 2: S/2 NE/4

(n) EXTEND the Jenkins-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 35 EAST, NMPM
Section 32: NW/4

(o) EXTEND the L E Ranch-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 10 SOUTH, RANGE 28 EAST, NMPM
Section 29: N/2 NW/4
Section 30: N/2 NE/4

(p) EXTEND the Malaga-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 24 SOUTH, RANGE 28 EAST, NMPM
Section 15: N/2

(q) EXTEND the South Millman-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 28 EAST, NMPM
Section 8: All

(r) EXTEND the West Osudo-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 35 EAST, NMPM
Section 14: W/2
Section 23: All

(s) EXTEND the Penasco Draw-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM
Section 6: W/2

(t) EXTEND the Penasco Draw San Andres-Yeso Associated Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 24 EAST, NMPM
Section 1: W/2 NW/4 and NW/4 SW/4
Section 13: NW/4 NW/4
Section 14: NE/4 NE/4

(u) EXTEND the South Peterson-Pennsylvanian Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 6 SOUTH, RANGE 33 EAST, NMPM
Section 2: Lots 1 and 2

(v) EXTEND the Rabbit Flats-Queen Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 10 SOUTH, RANGE 27 EAST, NMPM
Section 30: SE/4 SE/4

(w) EXTEND the Railroad Mountain-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 28 EAST, NMPM
Section 11: W/2 SW/4
Section 14: NW/4 NW/4

(x) EXTEND the Richard Knob Atoka-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 24 EAST, NMPM
Section 36: E/2

(y) EXTEND the Shugart Yates-Seven Rivers-Queen-Grayburg Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 31 EAST, NMPM
Section 2: S/2 S/2

(z) EXTEND the Twin Lakes-San Andres Associated Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 28 EAST, NMPM
Section 26: SE/4 SE/4
Section 35: E/2 NE/4 and NE/4 SE/4

(aa) EXTEND the Wantz-Abo Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
Section 3: SE/4

KELLAHIN and KELLAHIN
Attorneys at Law
500 Don Gaspar Avenue
Post Office Box 1769
Santa Fe, New Mexico 87501

Jason Kellahin
W. Thomas Kellahin

Karen Aubrey

Telephone 982-4285
Area Code 505

September 9, 1980

Mr. Joe Ramey
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Case 7047

Re: Nucorp Energy

Dear Joe:

Please set the enclosed application for hearing on October 15 1980.

Very truly yours,

W. Thomas Kellahin

Encl.
cc: Mr. Dick Denman

WTK:jm

STATE OF NEW MEXICO

DEPARTMENT OF ENERGY AND MINERALS

OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION
OF NUCORP ENERGY INC. FOR APPROVAL
OF A SPECIAL GAS-OIL RATIO LIMIT
FOR THE CAPROCK PENN EAST POOL,
LEA COUNTY, NEW MEXICO

Case 7047

A P P L I C A T I O N

COMES NOW NUCORP ENERGY INC., and applied to the New Mexico Oil Conservation Division for a Special Gas-Oil Ratio Limit for the Caprock Penn East Pool, Lea County, New Mexico of 10,000 cubic feet of gas per barrel of oil retroactive to April 18, 1980 and in support thereof would show:

1. Applicant is the operator of the State "23" Well No. 1, Unit K, Section 23, T12S, R36E, NMPM, Lea County, New Mexico.

2. That the subject well is the discovery well in the Caprock Penn East Pool and was completed with first sales on April 18, 1980.

3. That Order No. R-199 dated August 19, 1952 exempted the Caprock field in Lea County, New Mexico for Rule 506(d) of the New Mexico Oil Conservation Division Rules and Regulations.

4. That the subject well is capable of effectively and efficiently producing gas and oil at a GOR limit in excess of the state wide 2,000-1 limit.

5. Applicant requests that the subject well and proration unit be granted a special ORR limit not to exceed 10,000 to 1.

6. That the subject well is the only well in this pool.

7. That approval of the application will protect correlative rights, prevent waste and be in the best interests of conservation.

WHEREFORE applicant requests that the application be set for hearing and that after notice and hearing the application be granted as requested.

KELLAHIN KELLAHIN

By: W. Thomas Kellahin

W. Thomas Kellahin
P.O. Box 1769
Santa Fe, New Mexico 87501
(505) 982-4285

ROUGH

dr/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 7047

Order No. R-6503

APPLICATION OF NUCORP ENERGY INC.
FOR A SPECIAL GAS-OIL RATIO LIMITATION,
LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 15, 19 80, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this _____ day of October, 19 80, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Nucorp Energy Inc. seeks a special gas-oil ratio limitation of 10,000 to one, retroactive to April 18, 1980, for the East Caprock-Pennsylvanian Pool, Lea County, New Mexico.

(3) That said East Caprock-Pennsylvanian Pool is currently a one-well pool of unknown ~~extent~~ extent being developed only by applicant's State 23 Well No. 1 located in Unit K of Section 23, Township 12 South, Range 32 East, NMPM, Lea County, New Mexico.

East Caprock-Pennsylvanian Pool

(4) That the evidence presently available indicates that said ~~pool~~ may be produced at a limiting gas-oil ratio of 10,000 to one without waste.

(5) That the applicant, on or before ~~January~~ March 1, 1981, should submit data to the Director of the Division as to the size of the reservoir being drained by said ~~Big Eddy~~ State 23 Well No. ~~68~~, and demonstrating that the ~~Fenton-Bone Spring~~ East Caprock-Pennsylvanian Pool may continue to be produced at a gas-oil ratio of 10,000 to one without waste.

(6) That the Director of the Division should be permitted to reopen this case, at his option, for further testimony relative to the proper gas-oil ratio limitation or spacing unit size following receipt of the data required in Finding No. (5) above.

(7) That the application for ~~pool creation and~~ special gas-oil ratio limitation should be approved effective May 1, 1980.

IT IS THEREFORE ORDERED:

(1) That effective May 1, 1980, a special gas-oil ratio of 10,000 cubic feet of gas per barrel of oil ~~~~ is hereby established for the East Caprock-Pennsylvanian Pool, as heretofore defined and described, in Lea County, New Mexico.

IT IS FURTHER ORDERED:

(1) That the applicant, on or before ~~January~~ March 1, 1981, shall submit data to the Director of the Division demonstrating that the ~~Fenton Bone Spring~~ East Caprock-Pennsylvanian Pool may continue to be produced at a gas-oil ratio of 10,000 to one without waste and establishing the size of the reservoir being drained by ~~said Big Eddy Well No. 68~~ State 23 Well No. 1.

(2) That following receipt of the data required in Finding No. (5) of this order the Director of the Division may, at his option, reopen this case for further testimony relative to the proper gas-oil ratio limitation or spacing unit size.

(3) Jurisdiction