#### BEFORE THE INDUSTRIAL COMMISSION

#### OF THE STATE OF NORTH DAKOTA

CASE NO. 5869 ORDER NO. 6793

IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE TEMPORARY SPACING FOR THE DEVELOPMENT OF AN OIL AND/OR GAS POOL DISCOVERED BY THE GENERAL ATLANTIC RESOURCES, INC. #41-23 NESS WELL, LOCATED IN THE NE NE OF SECTION 23, T.163N., R.99W., DIVIDE COUNTY, NORTH DAKOTA, DEFINE THE LIMITS OF THE FIELD, AND ENACT SUCH SPECIAL FIELD RULES AS MAY BE NECESSARY.

#### TEMPORARY ORDER OF THE COMMISSION

#### BY THE COMMISSION:

Pursuant to legal notice this cause came on for hearing at 9:00 a.m. on the 26th day of January, 1994, in Bismarck, North Dakota, before an examiner appointed by the Industrial Commission of North Dakota, hereinafter referred to as the "Commission."

NOW, on this 23rd day of February, 1994, the Commission a quorum being present, having considered the testimony adduced and the exhibits received at said hearing, and being fully advised in the premises,

#### FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That geological and engineering evidence presented to the Commission relative to the matter of well spacing indicates that the Ambrose-Red River Pool, as classified and defined in this order, should be developed on a pattern of one well to 160 acres in order to drain efficiently the recoverable oil from said pool, assure rapid development, avoid the drilling of unnecessary wells, and prevent waste in a manner that will protect correlative rights.
- (3) That temporary 160-acre spacing in the Red River Pool in this field will result in the efficient and economical development of the field as a whole and will operate so as to prevent waste and provide maximum ultimate recovery, will avoid the drilling of unnecessary wells, and will protect correlative rights.
- (4) That the unrestricted flaring of gas produced from the Ambrose-Red River Pool could be considered waste, and in order to minimize such, production from the pool should be restricted until the wells producing therefrom are connected to a gas gathering and processing facility.
- (5) That certain special field rules are necessary to prevent waste and protect against the contamination and pollution of surface lands and fresh waters.

#### IT IS THEREFORE ORDERED:

(1) That the following described tracts of land in Divide County, North Dakota, be, and the same are hereby designated the Ambrose Field:

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM ALL OF SECTIONS 13, 14, 15, 22, 23 AND 24,

together with those additional quarter sections or governmental lots corresponding thereto as may be proven productive by wells drilled on lands within one mile of the boundaries of the field as set forth above, provided further that such extensions of the field boundaries shall include only sufficient acreage to form a spacing unit for such wells, and any intervening lands.

- (2) That the Ambrose-Red River Pool be, and the same is hereby defined as that accumulation of oil and gas found in the interval from below the base of the Stony Mountain Formation to the top of the Winnipeg Formation within the limits of the field as set forth above.
- (3) That effective this date, the temporary spacing for the development of the Ambrose-Red River Pool be, and the same is hereby set at one well to 160 acres.
- (4) That all wells hereafter drilled to said pool shall be located not less than 500 feet from a spacing unit boundary nor closer than 1650 feet to a well permitted to or producing from the pool. Wells presently permitted to or producing from the pool that do not conform to this spacing pattern shall be considered exceptions.
- (5) That spacing units for the Ambrose-Red River Pool shall consist of a governmental quarter section, or governmental lots corresponding thereto, as determined by governmental survey.
- (6) That no well shall be drilled hereafter in the Ambrose-Red River Pool except in conformity with the regulations above without special order of the Commission after due notice and hearing.
- (7) That the following rules concerning the casing, tubing and equipping of the wells shall apply to the subsequent drilling and operation of wells in the Ambrose-Red River Pool:
  - (a) The surface casing shall consist of new or reconditioned pipe that has been previously tested to 1000 pounds per square inch. The casing shall be set and cemented at a point not less than 50 feet below the base of the Fox Hills Formation. Sufficient cement shall be used to fill the annular space outside the pipe to the surface of the ground, or the bottom of the cellar, and sufficient scratchers and centralizers shall be used to assure a good cement job. Cement shall be allowed to stand a minimum of 12 hours before drilling the plug or initiating tests;
  - (b) The producing or oil string shall consist of new or reconditioned pipe that has been previously tested to 2000 pounds per square inch. Casing shall be set and cemented at a point not higher than the top of the producing formation, or at a point approved by the Director. Sufficient cement shall be used and applied in such manner as to adequately protect and isolate all formations containing oil and/or gas,

protect the pipe through salt sections encountered, and to isolate the Dakota-Lakota Series. The cement shall be allowed to stand a minimum of 24 hours before drilling the plug or initiating tests. After cementing, the casing shall be tested by application of pump pressure of at least 2000 pounds per square inch. If, at the end of 30 minutes this pressure shall have dropped 150 pounds per square inch or more, the casing shall be repaired. Thereafter, the casing shall again be tested in the same manner. Further work shall not proceed until a satisfactory test has been obtained;

- (c) All well-head fittings and connections shall have a working pressure in excess of that to which they are expected to be subjected; and,
- (d) All wells shall be equipped with tubing; all tubing shall be of sufficient internal diameter to allow the passage of a bottom hole pressure gauge for the purpose of obtaining bottom hole pressure measurements.
- (8) That the gas-oil ratio of each well shall be measured during the months of May and November, and the reservoir pressure of flowing wells shall be measured in the months of May and November, and in pumping wells when the rods are pulled but at least once annually and reported to the Commission within 15 days following the end of the month in which they are determined. Pressure measurements shall be made at or adjusted to a subsea datum of 8750 feet after the well has been shut in for 48 hours. All gas-oil ratios and reservoir pressure determinations shall be made under the supervision of and by methods approved by the Director. The Director is authorized to waive these requirements if the necessity therefor can be demonstrated to his satisfaction.
- (9) That no salt water, drilling mud, crude oil or waste oil shall be stored in pits in this field, except in an emergency, and approved by the Director.
- (10) That multiple completion of wells for the purpose of producing oil and/or gas from the various pools encountered in the Ambrose Field, is hereby authorized, subject to the following requirements:
  - (a) Administrative approval may be given by the Director upon the filing of an application in which the applicant states that the requirements described in (b) through (e) below and other applicable rules and orders of the Commission will be complied with;
  - (b) An approved production packer shall be set between each of the producing horizons in a manner which will effectively isolate each during the production process;
  - (c) Production from each producing horizon shall be through separate continuous strings of tubing installed in such a manner with respect to the production packers as will prevent commingling of production in the well bore;
  - (d) An approved well-head of a type which allows independent suspension and packing of the tubing shall be used; and,
  - (e) All tubing shall be of sufficient internal diameter to allow the passage of a bottom hole pressure gauge for the purpose of obtaining bottom hole pressure measurements.

- (11) That for the purposes of division of production to owners of interests in spacing units established by this order, and proven productive prior to the date hereof, this order shall be retroactive to the date of first production.
- (12) That all wells in the Ambrose-Red River Pool shall be allowed to produce at an unrestricted rate for a period of 60 days commencing on the first day oil is produced through well-head equipment into tanks from the ultimate producing interval after casing has been run; after that, oil production from such wells shall not exceed an average of 200 barrels per day for a period of 60 days; after that, oil production from such wells shall not exceed an average of 150 barrels per day for a period of 60 days, thereafter, oil production from such wells shall not exceed an average of 100 barrels of oil per day; if and when such wells are connected to a gas gathering and processing facility the foregoing restrictions shall be removed, and the wells shall be allowed to produce at a maximum efficient rate.
- (13) That if the flaring of gas produced with crude oil from the Ambrose-Red River Pool causes, or threatens to cause, degradation of ambient air quality, production from the pool shall be further restricted.
- (14) That this order shall cover all of the Ambrose-Red River Pool, common source of supply of crude oil and/or natural gas as herein defined, and shall continue in full force and effect until the 31st day of August, 1995. That the proper spacing for the pool will be considered by the Commission on or before the regularly scheduled meeting in July, 1995.

Dated this 23rd day of February, 1994.

INDUSTRIAL COMMISSION STATE OF NORTH DAKOTA

- /s/ Edward T. Schafer, Governor
- /s/ Heidi Heitkamp, Attorney General
- /s/ Sarah Vogel, Commissioner of Agriculture



Jak 16 (5849)

RESOURCES, INC.

November 1,1993

North Dakota Industrial Commission
Oil & Gas Division
ATTN: Jack Wilborn
600 East Boulevard
Bismarck, North Dakota

RE:

Request for commingling permit and temporary spacing for

#1 Ness 41-23 - NENE Sec. 23 T163N R99W

Divide Co., North Dakota

Dear Mr. Wilborn,

As we discussed over the telephone several weeks ago, General Atlantic Resources Inc. would like to commingle the Duperow and Red River production in this well and requests that 160 acre temporary spacing be established for production testing purposes of the Red River formation.

The well was reworked as approved in the Sundry dated June 1, 1993 with one exception. Instead of plugging the Duperow perforations as outlined in the Sundry, the Duperow perforations were isolated with a packer set at 9101' as detailed on attached wellbore schematic. The reason for this deviation from the Sundry was the decision that the CIBP that had to be drilled to open the Red River pay could be safely drilled with the Duperow perforations open.

A fingerprint analysis was run on the two crude oil samples and is attached. There is strong evidence that the crude oil can be analyzed and allocated to each formation from these samples. If the commingling permit is approved, we suggest fingerprint analysis be run every six months to allocate production volumes.

Attached is a Sundry detailing the work that has been completed to date. Thank you for your attention in this matter and if you have any questions please do not he sitate to call the undersigned at (303)

573-5100,

Bret C. Jameson Operations Engineer

XC:

Joe Gavlick Wellfile



# GENERAL ATLANTIC

# CASIES 5869 \$ 5870

#### RESOURCES, INC.

January 13, 1994

North Dakota Industrial Commission Oil & Gas Division Attn: F.E. Wilborn 600 East Boulevard Bismarck, ND 58505-0840

RE:

Hearing for Temporary Spacing of Pool discovered by the Ness #41-23 well NENE Sec. 23, T163N R99W, Divide Co., ND



Dear Mr. Wilborn,

I regret that there will not be any General Atlantic Resources, Inc. personnel in attendance at the Hearing. The following data is offered to support our request for a (normal) 160 acre spacing for this new pool:

- 1) General Atlantic Resources, Inc. 410 17th Street Suite #1400, Denver CO 80202.
- 2) Normal State definitions are sufficient for this item.
- 3) Attachment #1.
- 4) The geologic formation is the Ordovician Red River. The areal limits are unknown.
- a) Initial reservoir pressure was 5147 psia, from extrapolated Drill Stem test data dated January 6, 1983.
  - b) Attachment #2.
  - c) API gravity is 41 degrees.
  - d) GOR is 533 scf/bo.
  - e) Porosity is 18%.
  - f) Thickness is 6 feet.
  - g) Permeability approx. 1.3 md (DST 1/6/83).
  - h) Sw is approximately 40%.
  - i) Resistivity is 0.04 @ 69 deg. F, (DST 1/6/83).

6)

5)

- a) N/A
- b) N/A.





- c) Temperature 226 degrees F.
- d) Probable water drive.
- e) N/A
- 7) N/A due to unknown areal extent of reservoir.
- 8) N/A
- 9) N/A.
- The Oil is transported and sold to Koch, gas is used on lease and sold to Custom Energy, the Water is hauled to the Balco disposal by KOCH.
- 11) N/A.
- 12) N/A
- 13: Previously filed.

As previously requested in a letter dated November 1, 1993, General Atlantic Resources Inc. would like to commingle the Duperow and Red River production in this well and requests that 160 acre temporary spacing be established for production testing purposes of the Red River formation.

The well was reworked as approved in the Sundry dated June 1, 1993 with one exception. Instead of plugging the Duperow perforations as outlined in the Sundry, the Duperow perforations were isolated with a packer set at 9101' as detailed on attached wellbore schematic, attachment #4. The reason for this deviation from the Sundry was the decision that the CIBP that had to be drilled to open the Red River pay could be safely drilled with the Duperow perforations open since the Duperow would hold a hydrostatic column of fluid.

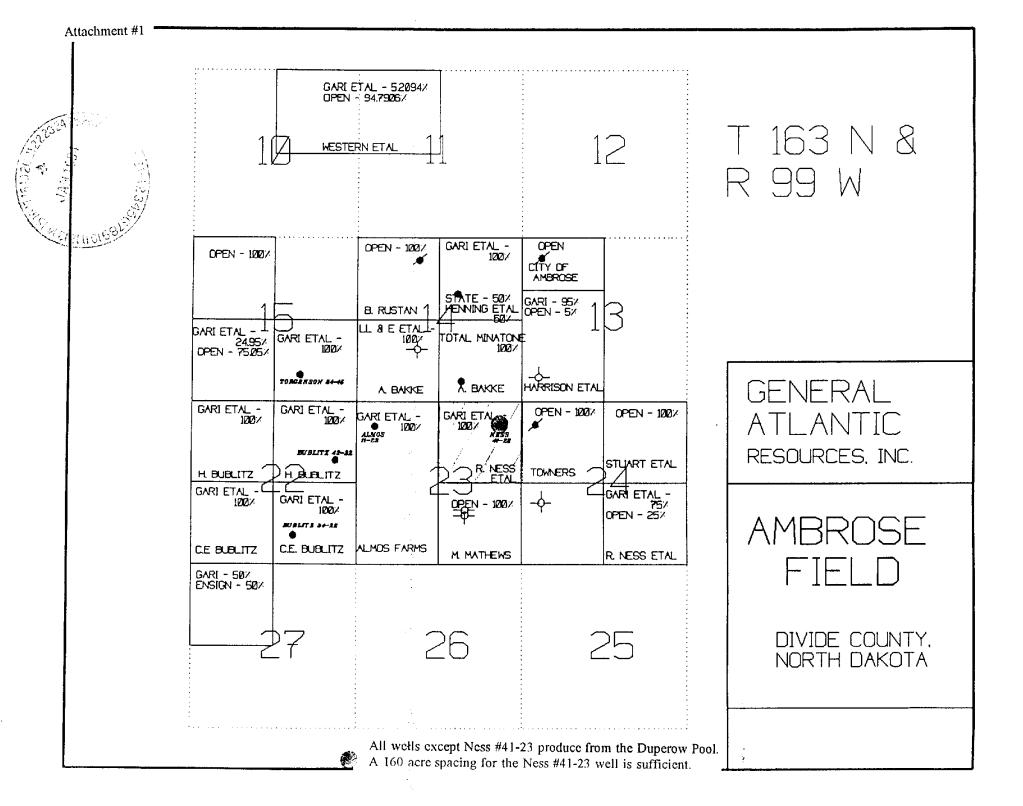
A fingerprint analysis was run on the two crude oil samples and is attached. There is strong evidence that the crude oil can be analyzed and allocated to each formation from these samples. If the commingling permit is approved, we suggest fingerprint analysis be run every six months to allocate production volumes.

I hope this data is useful. Please call the undersigned at (303) 573-5100 if you have further questions concerning this matter.

Sincerely

Bret C. Jameson

xc: Well file Ralph Yeatts



Production Disposition History
Production Find Disposition History
Production History For #1 NESS #41-23 For 1993

Production Month
Production Month
Production Month

	Production Month	Days On	Beg. Oil Balance (Bols)	Gross Oil Production (Bbls)	Total Oil Sales (Bbis)	Other Dil Usage	End. <b>D</b> i Eal <b>ance</b>	c. ag	e Gross Ga: Y Production	-121 00	-40 0360	Gas	Gas Plant			
•	January	31	218.97	192.74	0.00	(85(s) 0.00	(Bbls)		(Mcf)	n Sales (Mcf)	On Lease (Mcf)	Flared (Mcf)	Inlet Volume (Mcf)	Averag BTU	Production	Remarks
l.	February March	28	411.65	175.00	448.00	0.00	411.65 138.65		767.00	707.00	0.00	0.00	0.00	0	(Bbls)	
ľ	QUARTERLY TOTALS	31	138.65	183.73	0.00	0.00	322.38		1123.00	652.00	471.00	0.00	0.00	0	2.00 4.00	
•	April	90		551.47	448.00	0.00		0.0	1181.00	686.00	475.00	0.00	0.00	0	6.00	
	May	30	322.38	177.42	0.00	0.00	+99.80	0.0	3071 <sub>-00</sub>	2105.00	966.00	0.00	0.00		12.00	•
	June	31 30	499.80	168,24	438.02	0.00	230.02	38.3	1105.00	177.00 0.00	130.00	0.00	0.00	0	6.00	
	QUARTERLY TOTALS	91	230.02	164.74	0.00	0.00	394.76	0.0	697.00	208.00	0.00	0.00	629.00	0	12.00	
	July	31	394.76	510.40 154.74	438.02	0.00			2109.00	385.00	369.00 499.00	0,00	697.00	0	5.00	
	August	31	105.86	183.75	443.64	0.00	175.86	37.2	797.00	0.00	653.00	0.00	1326.00		23.00	
	September	22	289.61	123.61	0.00 228.13	0.00	259.61	0.0	691.00	0.00	572.00	0.00	797.00	0	2.00	
	QUARTERLY TOTALS	84		462.10	671.77	0.00	185.09	37.2	555.00	0.00	451.00	0.00	691.00 555.00	0	2.00	
	October Recompleted to Red River November 10/7 thru 10/25/93	9	185.09	544.04	0.00	0.00	729.13		2043.00	0.00	1676.00	0.00	2043.00	0	0.00	
	First Red River Production QUARTERLY TOTALS  10/23/93	<b>3</b> 0	729.13	1271.36	1654.78	0.00	_	0.0 37.2	51.00	0.08	487.00	0.00	F4	0	4.00 733.13	
<b>3</b> 00	YEARLY TOTALS	39 304		1815.40 3339.37	1654.78	0.00		J1 . C	678.00 .	13.00	565.00	0.00	678.00	ָ כ	2649.00	
				22.00,	3212.57	0.0ე			729.00 7952.00	13.00 2503.00	1052,00 4193,00	0.00 0.00	729.00 4098.00	3	3382.13 3421.13	18 - 20



CASE = 5870

January 21,1994

North Dakota Industrial Commission Oil & Gas Division ATTN: Jack Wilborn 600 East Boulevard Bismarck, North Dakota

RE:

Request for commingling permit and temporary spacing for #1 Ness 41-23 - NENE Sec. 23 T163N R99W Divide Co., North Dakota

Dear Mr. Wilborn,

As we discussed over the telephone today I am sending this FingerPrint Analysis I must have forgotten to include in my letter dated January 13, 1994. This is in reference to General Atlantic Resources Inc. desire to commingle the Duperow and Red River production in this well and our request that 169 acre temporary spacing be established for production testing purposes of the Red River formation.

Thank you for your attention in this matter and if you have any questions please do not hesitate to call the undersigned at (303) 573-5100.

Bret C. Jameson Operations Engineer

Wellfile (w/ attachments)

# ASTRO-CHEM LAB, INC.

P. O. BOX 372 • WILLISTON, ND 58802-0972

0ctober 20, 1993

PEGEIVED

OFERATIONS

General Atlantic Resources 410 17th St., Suite 1400 Building 410

Denver, CO 80202 Attn: Brett Jameson

Dear Sir:

Crude oil from the Ness 41-23 well located at NENE 23-163N-99W in Divide County from the Ambrose field was submitted for "FINGERPRINT" analysis to determine if an altocation of production to formations could be made from a co-produced oil sample. Duperow (8,496' - 8,530') was submitted on September 23, 1393 and Red River (10,925' - 10,931') was submitted on October 15, 1993. The results are as follows:

#### I. Ratios of compounds to each other.

BL	ENDS				
Red River	Duperow	C17: ISO	C18:ISO	Pristane:Phytane	C17:C18
0	100	1.21	1.41	1.66	1.43
25	75	2.80	2.00	1.65	2.31
50	50	5.00	2.74	1.60	2.93
75	25	6.93	3.25	1.60	3.42
100	0	7.75	3.92	1.80	3.56

The ratios C17:ISO, C18:ISO and C17:C18 could be used to allocate production.

#### II. Normalized percentages of Isoprenoids.

Isoprenoid #	Red River	Duperow
13	12.33	26.23
14	13.50	16.75
15	13.30	14.02
16	19.66	16.75
18	17.59	10.95
19	15.18	9.56
20	8.44	5.74

General Atlantic Resources October 20, 1993 page 2 Brett Jameson

Also enclosed is a graph of those normalized Isoprenoids.

If you have any questions or need further assistance, please do not hesitate to call.

Thank you for allowing Astro-Chem to be of service.

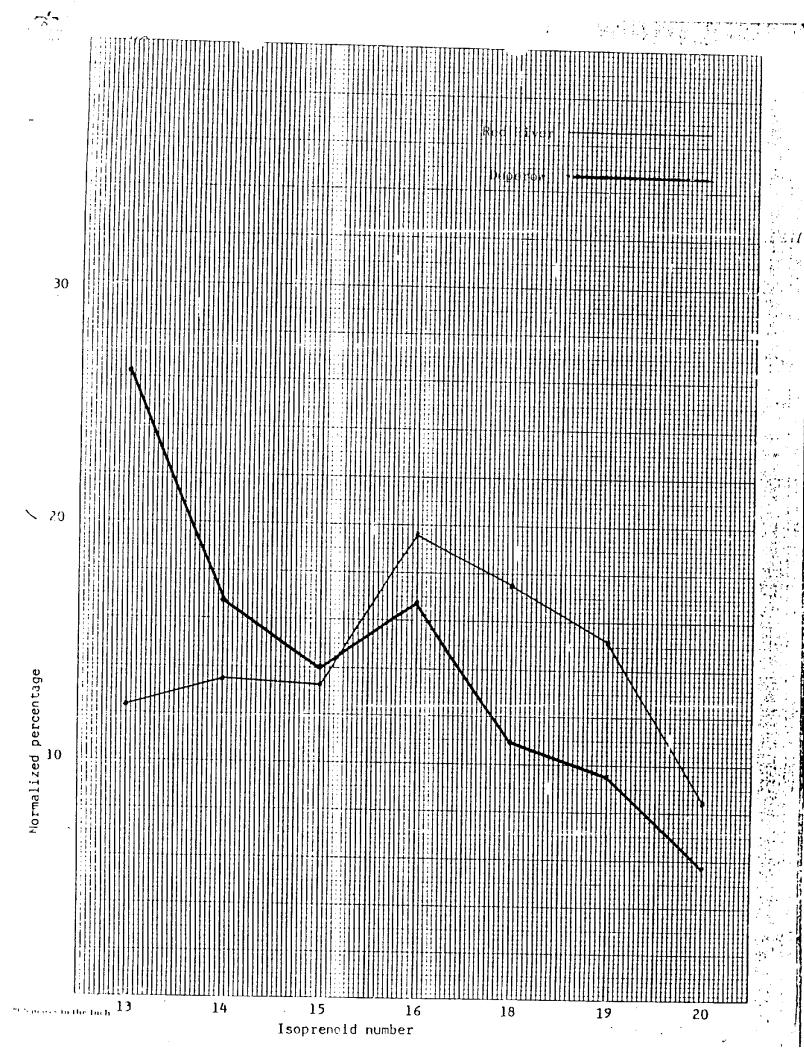
Sincerely,

David Zander
Astro-Chem Lab

DZ:ch

F-93-2742; 3017

cc: Dan's Production Service



DENDIZE

STATE	OF	NORTH	DAKOTA	
COUNTY	OI	F BURLI	EIGH	

#### AFFIDAVIT OF MAILING

I, Donna Bauer, being duly sworn upon oath, depose and say: That on the <a href="Ist day">1st day</a> of <a href="March, 1994">March, 1994</a>, I enclosed in separate envelopes true and correct copies of the attached Order No. <a href="6793">6793</a> of the North Dakota Industrial Commission, and deposited the same with the United States Postal Service in Bismarck, North Dakota, with postage thereon fully paid, directed to the following persons, all of whom appeared at the hearing of the Industrial Commission in Case No. 5869:

Fleck, Mather & Strutz Ltd. 400 E. Broadway Suite 600 P. O. Box 2798 Bismarck, ND 58502

Mr. Lawrence Bender Pearce & Durick P. O. Box 400 Bismarck, ND 58502

Mr. Bret C. Jameson Operations Engineer General Atlantic Resources Inc. 410 17th Street Suite 1400 Denver, CO 80202

Mr. David Zander Astro-Chem Lab Inc. P. O. Box 972 Williston, ND 58802-0972

Donna Bauer
Oil & Gas Division

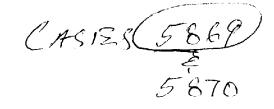
On this day of Mach, 1994, before me personally appeared to me known as the person described in and who executed the foregoing instrument and acknowledged that she executed the same as her free act and deed.

Notary Public

State of North Dakota County of Burleigh My Commission expires

# GENERAL ATLANTIC





#### RESOURCES, INC.

January 13, 1994

North Dakota Industrial Commission Oil & Gas Division Attn: F.E. Wilborn 600 East Boulevard Bismarck, ND 58505-0840

RE:

Hearing for Temporary Spacing of Pool discovered by the Ness #41-23 well NENE Sec. 23, T163N R99W, Divide Co., ND



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5)

- a) Initial reservoir pressure was 5147 psia, from extrapolated Drill Stem test data dated January 6, 1983.
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- d) GOR is 533 scf/bo.
- e) Porosity is 18%
- f) Thickness is 6 feet.
- g) Permeability approx. 1.3 md (DST 1/6/83).
- h) Sw is approximately 40%.
- i) Resistivity is 0.04 @ 69 deg. F, (DST 1/6/83).

6)

- a) N/A
- b) N/A.





- c) Temperature 226 degrees F.
- d) Probable water drive.
- c) N/A
- 7) N/A due to unknown areal extent of reservoir.
- 8) N/A
- 9) N/A.
- 10) The Oil is transported and sold to Koch, gas is used on lease and sold to Custom Energy, the Water is hauled to the Balco disposal by KOCH.
- 11) N/A.
- 12) N/A
- 13) Previously filed.

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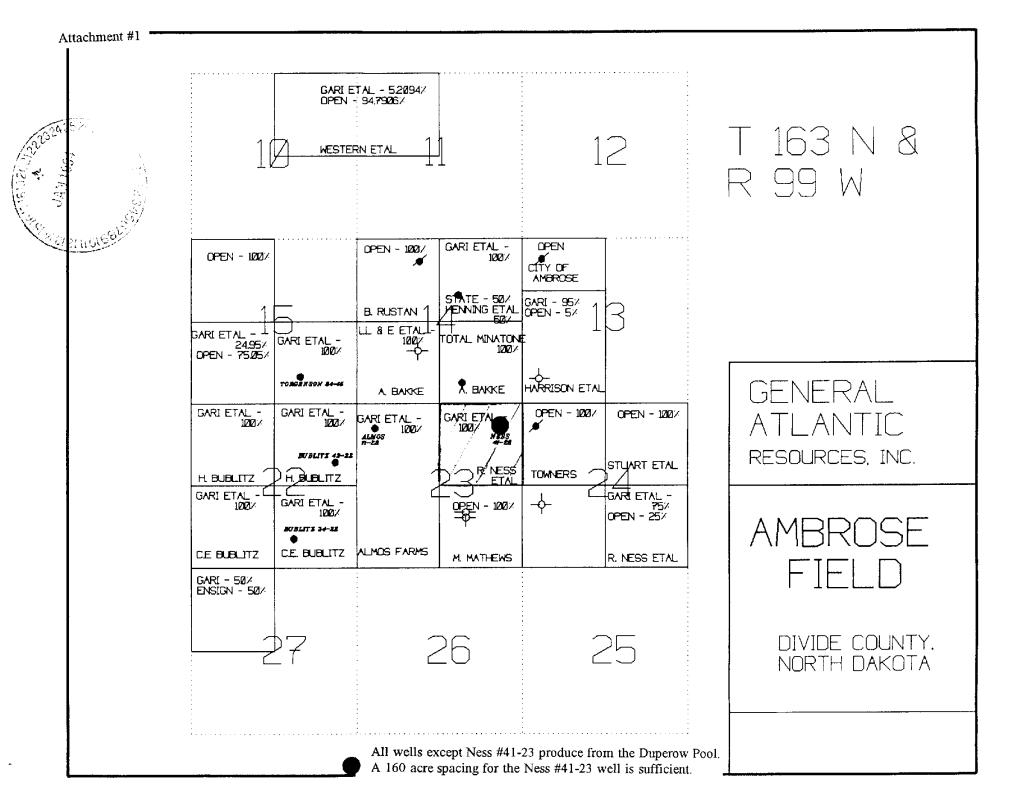
I hope this data is useful. Please call the undersigned at (303) 573-5100 if you have further questions concerning this matter.

Sincerely

Bret C. Jameson

xc:

Well file Ralph Yeatts



Remarks

GENERAL ATLANTIC RESOURCES, IN - Production/Disposition History Report Date: 01-19-1994 - Page 1 (Gas At State Pressure) Production History For #1 NESS #41-23 For 1993 Company I.D.#= ND-076-01 (API#= 00231)

Production Month	Days On	Beg. Oil Balance (Bols)	Gross Oil Production (Bbls)	Total Oil Sales (Bbls)	Other Oil Usage (Bbls)	End. Oil Balance (Bbls)	Average Gravity		Total Gas Sales (Mcf)	Gas Used On Lease (Mcf)	Gas Flared (Mcf)	Gas Plant Inlet Volume (Mcf)	Average BTU	Water Production (Bbls)	R
January	31	218.91	192.74	0.00	0.00	411.65	0.0	767.00	767.00	0.00	0.00	0.00	0	2.00	
February	28	411.65	175.00	448.00	0.00	138.65	37.0	1123.00	652.00	471.00	0.00	0.00	0	4.00	
March	31	138.65	183.73	0.00	0.00	322.38	0.0	1181.00	<b>68</b> 6,00	495.00	0.00	0.00	0	6.00	
QUARTERLY TOTALS	90		551.47	448.00	0.00			3071.00	2105.00	966.00	0.00	0.00		12.00	
April	30	322.38	177.42	0.00	0.00	499.80	0.0	307.00	177.00	130.00	0.00	0.00	0	6.00	
May	31	499.80	168.24	438.02	0.00	230.02	38.3	1105.00	0.00	0.00	0.00	629.00	0	12.00	
June	30	230.02	164.74	0.00	0.00	394.76	0.0	697.00	208.00	369.00	0.00	697.00	0	5.00	
QUARTERLY TOTALS	91		510.40	438.02	0.00			2109.00	385.00	499.00	0.00	1326.00		23.00	
July	31	394.76	154.74	443.64	0.00	105.86	37.2	797.00	0.00	653.00	0.00	797.00	0	2.00	
August	31	105.86	183.75	0.00	0.00	289.61	0.0	691.00	0.00	572.00	0.00	691.00	0	2.00	
September	22	2 <b>89.</b> 61	123.61	228.13	0.00	185.09	37.2	555.00	0.00	451.00	0.00	555.00	0	0.00	
QUARTERLY TOTALS	84		462.10	671.77	0.00			2043.00	0.00	1676.00	0.00	2043.00		4.00	
October Recompleted to	9	185.09	544.04	0.00	0.00	729.13	0.0	51.00	0.00	487.00	0.00	51.00	0	733.13	
Red River November 10/7 thru 10/25/93 First Red River freebuc		729.13	1271.36	1654.78	0.00	345.71	37.2	678.00	13.00	565.00	0.00 ,	678.00	0	2649.00	
QUARTERLY TOTALS YEARLY TOTALS	39 304		1815.40 3339.37	1654.78 3212.57	0.00 0.00			729.00 7952.00	13.00 <b>2</b> 503.00	1052.00 4193.00	0.00 0.00	729.00 4098.00		3382.13 3421.13	



CASE #5870

January 21,1994

North Dakota Industrial Commission Oil & Gas Division ATTN: Jack Wilborn 600 East Boulevard Bismarck, North Dakota

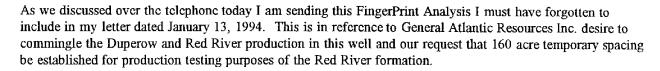
RE:

Request for commingling permit and temporary spacing for

#1 Ness 41-23 - NENE Sec. 23 T163N R99W

Divide Co., North Dakota

Dear Mr. Wilborn,



Thank you for your attention in this matter and if you have any questions please do not hesitate to call the undersigned at \$303) 573-5100.

Bree C. Jameson Operations Engineer

Wellfile (w/ attachments)

# ASTRO-CHEM LAB, INC. P. O. BOX 972 • WILLISTON, ND 58802-0972

October 20, 1993

RECEIVED OCT 25 1993

General Atlantic Resources 410 17th St., Suite 1400 Building 410 Denver, CO 80202 Attn: Brett Jameson

Dear Sir:

Crude oil from the Ness 41-23 well located at NENE 23-163N-99W in Divide County from the Ambrose field was submitted for "FINGERPRINT" analysis to determine if an allocation of production to formations could be made from a co-produced oil sample. Duperow (8,496' - 8,530') was submitted on September 23, 1993 and Red River (10,925' - 10,931') was submitted on October 15, 1993. The results are as follows:

#### I. Ratios of compounds to each other.

BLI					
Red River	Duperow	C17: ISO	C18: ISO	Pristane:Phytane	C17:C18
0	100	1.21	1.41	1.66	1.43
25	75	2.80	2.00	1.65	2.31
50	50	5.00	2.74	1.60	2.93
75	25	6.93	3.25	1.60	3.42
100	0	7.75	3.92	1.80	3.56

The ratios C17: ISO, C18: ISO and C17: C18 could be used to allocate production.

#### II. Normalized percentages of Isoprenoids.

Isoprenoid #	Red River	Duperow
13	12.33	26.23
14	13.50	16.75
15	13.30	14.02
16	19.66	16.75
18	17.59	10.95
19	15.18	9.56
20	8.44	5.74

General Atlantic Resources October 20, 1993 page 2 Brett Jameson

Also enclosed is a graph of those normalized Isoprenoids.

If you have any questions or need further assistance, please do not hesitate to call.

Thank you for allowing Astro-Chem to be of service.

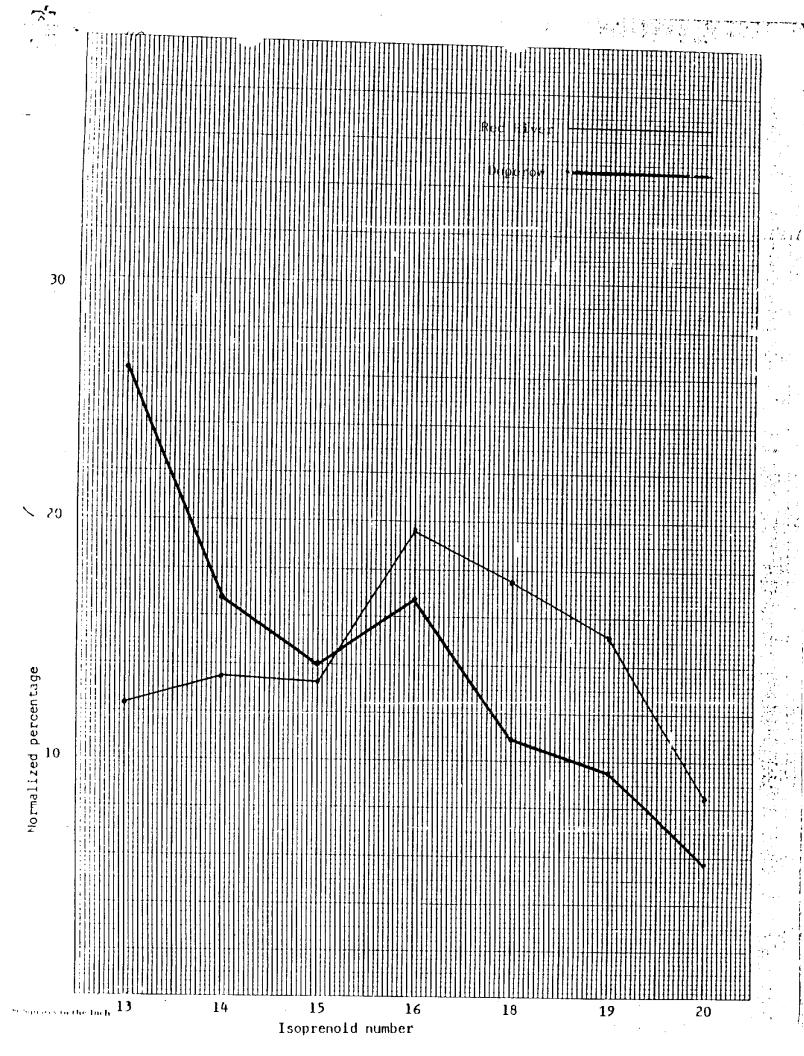
Sincerely,

David Zander Lab

DZ:ch

F-93-2742; 3017

cc: Dan's Production Service



## NORTH DAKOTA INDUSTRIAL COMMISSION

# OIL AND GAS DIVISION

Wesley D. Norton DIRECTOR

F E Wilborn ASSISTANT DIRECTOR

Clarence G. Carlson GEOLOGIST Charles Koch ENGINEERING DEPT

Doren Dannewitz FIELD SUPERVISOR

Glenn Wollan RECLAMATION SUP

December 21, 1993

General Atlantic Resources, Inc. 410 17th Street, Suite 1400 Denver, CO 80202

#### Gentlemen:

The temporary spacing for the development of an oil and/or gas pool discovered by the Ness #41-23 well, located in the NE NE of Section 23, T.163N., R.99W., Divide County, North Dakota, will be considered at the North Dakota Industrial Commission hearing on January 26, 1993.

As you have been previously informed, all exhibits to be used at the hearing are to be prefiled in our office approximately five (5) days prior to the date of hearing.

Thank you for your assistance in this matter.

Sincerely,

F.E. Wilborn

Deputy Enforcement Officer

7.8. Willborn/Hr

FEW/th enc.



State of North Dakota, County of Divide, ss:

# Notice of publication

#### NORTH DAKOTA INDUSTRIAL COMMISSION BISMARCK, NORTH DAKOTA

The State of North Dakota by its industrial Commission hereby gives notice pursuant to law and the rules and regulations of said Commission fromulgated thereunder of the following public hearing to be held at 2:00 a.m. on January 26, 1994, Bryndild Haugland Room, State Capitol, Bismarck, North Dakota. For the pursue of this hearing, the Commission, any member thereof acting as examiner, or an Examiner appointed by the Commission will receive testimony and exhibits.

ATTENTION PERSONS WITH DISABILITIES: If you plan to attend the hearing and will need special acilities or assistance relating to a disability, please contact the North Dakota Industrial Commission at 01-224-3722 by January 12, 1994.

# STATE OF NORTH DAKOTA TO:

All named parties and persons aving any right, title, interest, or laim in the following cases and otices to the public. CASE NO. 869: ON A MOTION OF THE

COMMISSION TO CONSIDER THE TEMPORARY SPACING FOR THE DEVELOPMENT OF AN OIL AND/OR GAS POOL DIS-COVERED BY THE GENERAL ATLANTIC RESOURCES INC. #41-23 NESS WELL LOCATED IN THE NE NB OF SECTION 23, T.163N., R.99W., DIVIDE COUN-TY, NORTH DAKOTA, DEFINE THE LIMITS OF THE FIELD, AND ENACT SUCH SPECIAL FIELD RULES AS MAY BE NECES-SARY, CASE NO. 5870: ON A MO-TION OF THE COMMISSION TO CONSIDER THE APPLICATION GENERAL ATLANTIC RESOURCES, INC. FOR AN ORDER PERMITTING PRODUC-TION FROM THE AMBROSE-DUPEROW AND RED RIVER POOLS TO BE COMMINGLED IN THE WELLBORE OF THE NESS #41-23 WELL, LOCATED IN THE NE NE OF SECTION 23, T.163N., R.99W., DIVIDE COUNTY, NORTH DAKOTA.

Signed by, Edward T. Schafer, Governor Chairman ND Industrial Commission

# Affidavit of Publication

Dakota, published in the city of Cro Notice of publicat	• .		
a printed copy of which is here a	attached, was published in The	Journal on the follow	ving dates:
	Line	s @ = \$	
	Line	s @ = \$	
	Line	s @ = \$	
December 29, 1993	10 Column Inches	s @ <u>3.50</u> = \$	35.00
	Column Inches	s @ = \$	
	Column Inches	s @ = \$	
Notary/Affidavit Fee		\$	***
Notary/Affidavit Fee			35.00
	May 1	Steven J. Andri	st, Publishe
Subscrib	ed and sworn to before me	December 29, 1	993

Donna Molander

Notary Public, State of North Dakota My Commission Expires December 14, 1994

### THE BISMARCK TRIBUNE

P.O. BOX 1498 BISMARCK, NORTH DAKOTA 58502-1498 (701) 223-2500 IN STATE (800) 472-2273

IND COMM-OIL & G AS DIV 50U

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RELIEF

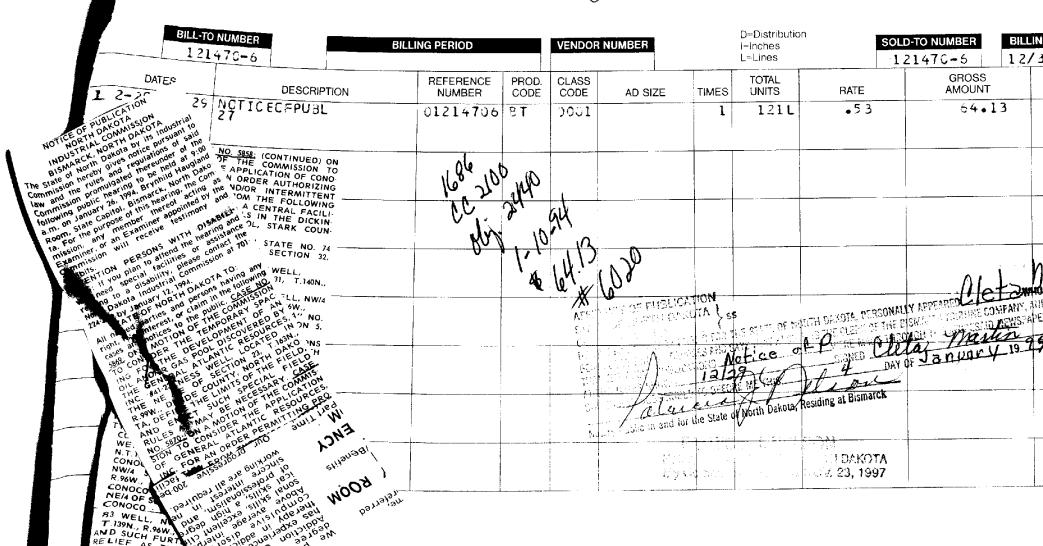
AS THE PROPRIATE

Signed by, Signed by, Signed by, Signed by, Signed by, Schafer, Win 2011 e Edward T. Schafer, Win 25 cept Chairman, ND Indust 25 cept commission

BOULEVARD ND 58505

AV

# LEGAL PUBLICATIONS



**PAYMENT TERMS** 

Due 10th of month following charges

AMOUNT Thank DUË You!