

Doc. No. 07-0241
And No. 07-0242
Consol.

Exhibit TLP-2.7

July 20, 2007

To: Charles Connaughton
From : Ted Kronas *Ted Kronas*
Subject: Manlove Field Reservoir Volume Calculations

Calculations of Manlove Field reservoir volumes were made utilizing end of injection season shut-in field pressures and gas saturations as developed from neutron surveys for 1997 and 2006 in order to investigate mobile and trapped gas volumes. Those volumes are listed as Figure 1.

Season	Total Inventory as Calculated (Bscf)	Total Inventory Actual (Bscf)	Total Inventory Difference Actual Minus as Calculated (Bscf)	Percent Error of as Calculated Total Inventory (%)	Volume as Calculated (Stg=29.1%) (Bscf)
1997	159.12	147.91	11.21	7.6%	44.13
2006	175.34	166.00	9.35	5.6%	54.20

Figure 1 Manlove Field Volume Calculations

Stg is trapped gas saturation. The value of 29.1% is an average of data points taken from Core Petrophysics, Inc “Trapped Gas Study (preliminary report)” dated July 20, 1992. This data determined trapped gas saturation (Stg) by low rate brine injection. The final report of this data is unavailable or never issued. This report is attached at the end of this document.

The last two columns in Figure 1 were developed by subtracting the trapped gas saturation, as identified in the column, from the gas saturation as determined from neutron surveys on a foot-by-foot basis. If the result was negative in this calculation then gas saturation was forced to zero. Volumes determined in this manner would indicate non-trapped gas volumes in the reservoir at the two corresponding dates.

The procedure for calculating the reservoir volumes are as follows:

- 1) Determine bottom hole pressure (BHP) at the center of the gas interval in each well utilizing a calculated curve in Oil Field Manager (OFM) software from the surface tubing shut-in pressure at the end of the injection season.
- 2) Determine the compressibility factor (Z), as above.
- 3) Determine bulk volume hydrocarbon (BVHC), oftentimes referred to as Gas-Ft by multiplying 100% liquid filled porosity times gas saturation and summing the volumes throughout the depth of each individual well. This procedure is processed in the log analysis package Well Data Systems (WDS).

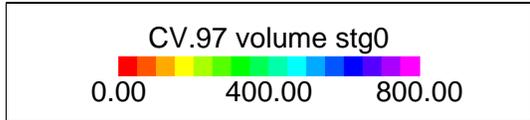
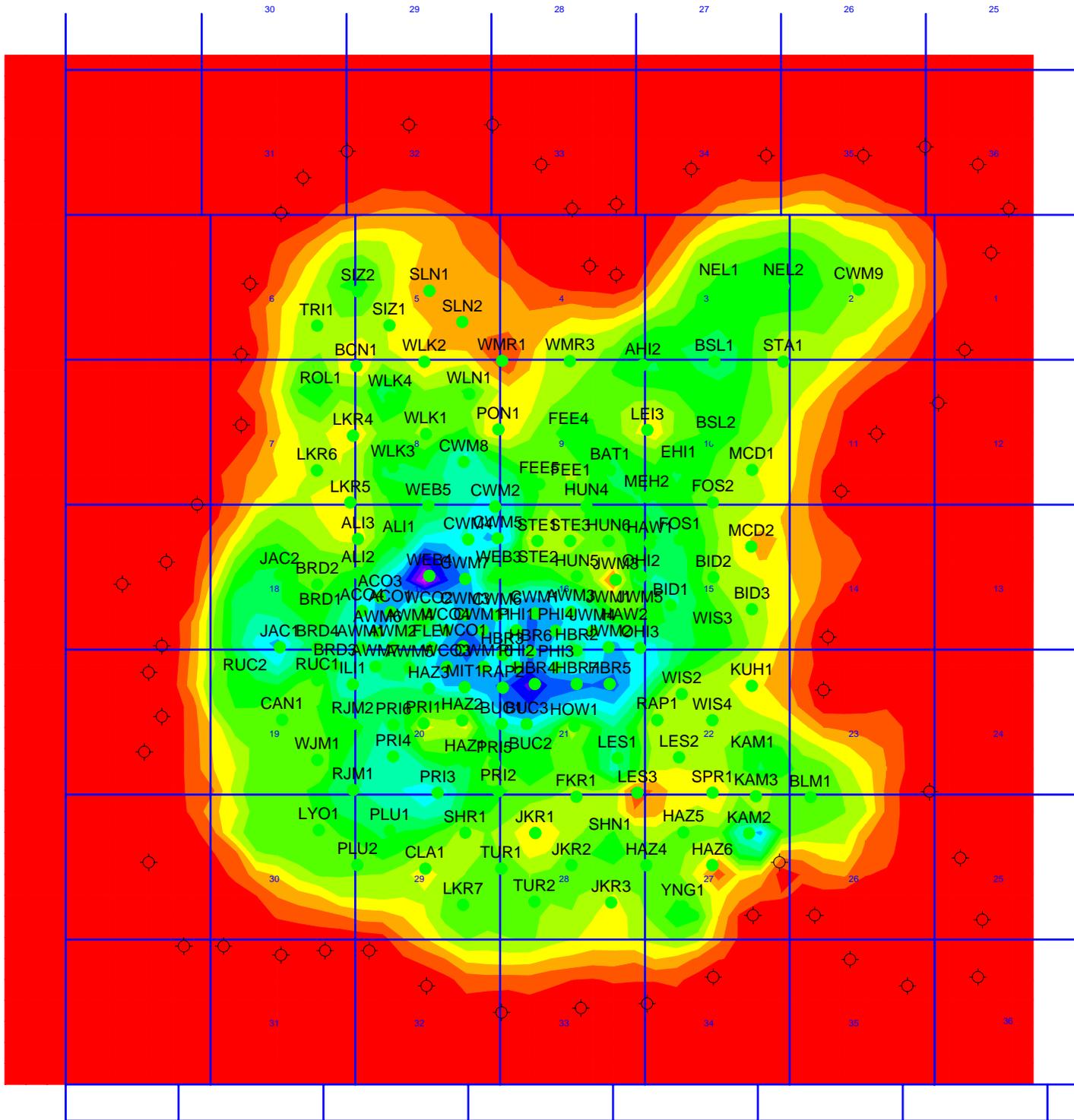
- 4) Grid Map the following equation in OFM. The output volume listed in the grid output window of the OFM software package is the calculated volume in standard cubic feet. The equation is:

$$\text{Volume (Scf)} = \text{BVHC} * \text{BHP} / \text{Z} * 0.064$$

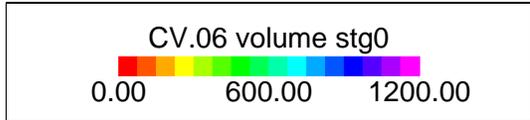
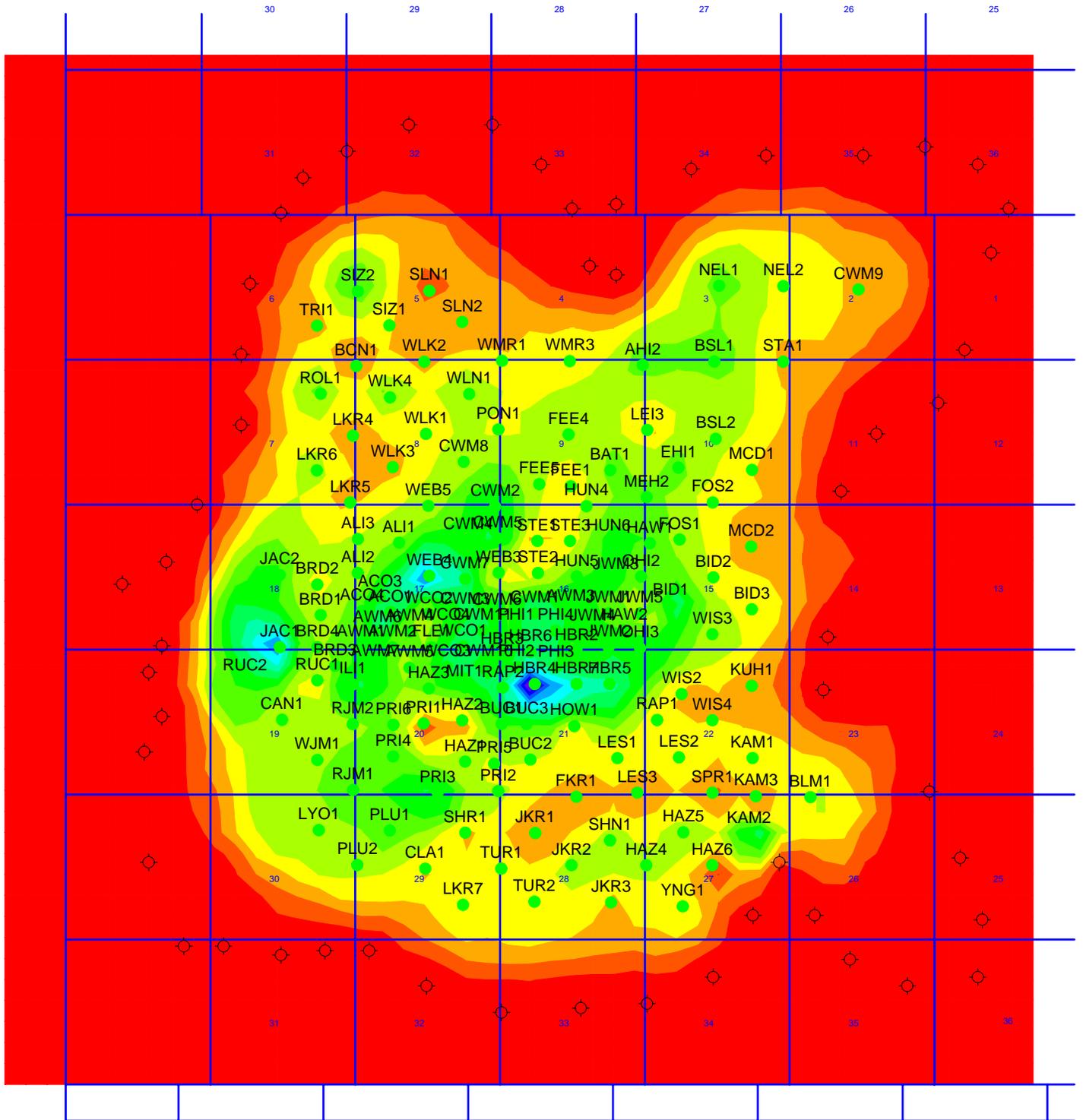
Neutron data is collected sporadically in the field. The gas saturations used at any particular date is the gas saturation as developed during that season. However, if any wells were not surveyed in the analysis season then the most recent gas saturation, going back in time, is utilized.

The following grid maps and grid map output windows indicate the work that was done in OFM to determine the listed volumes as reported in figure 1.

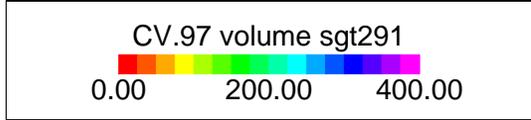
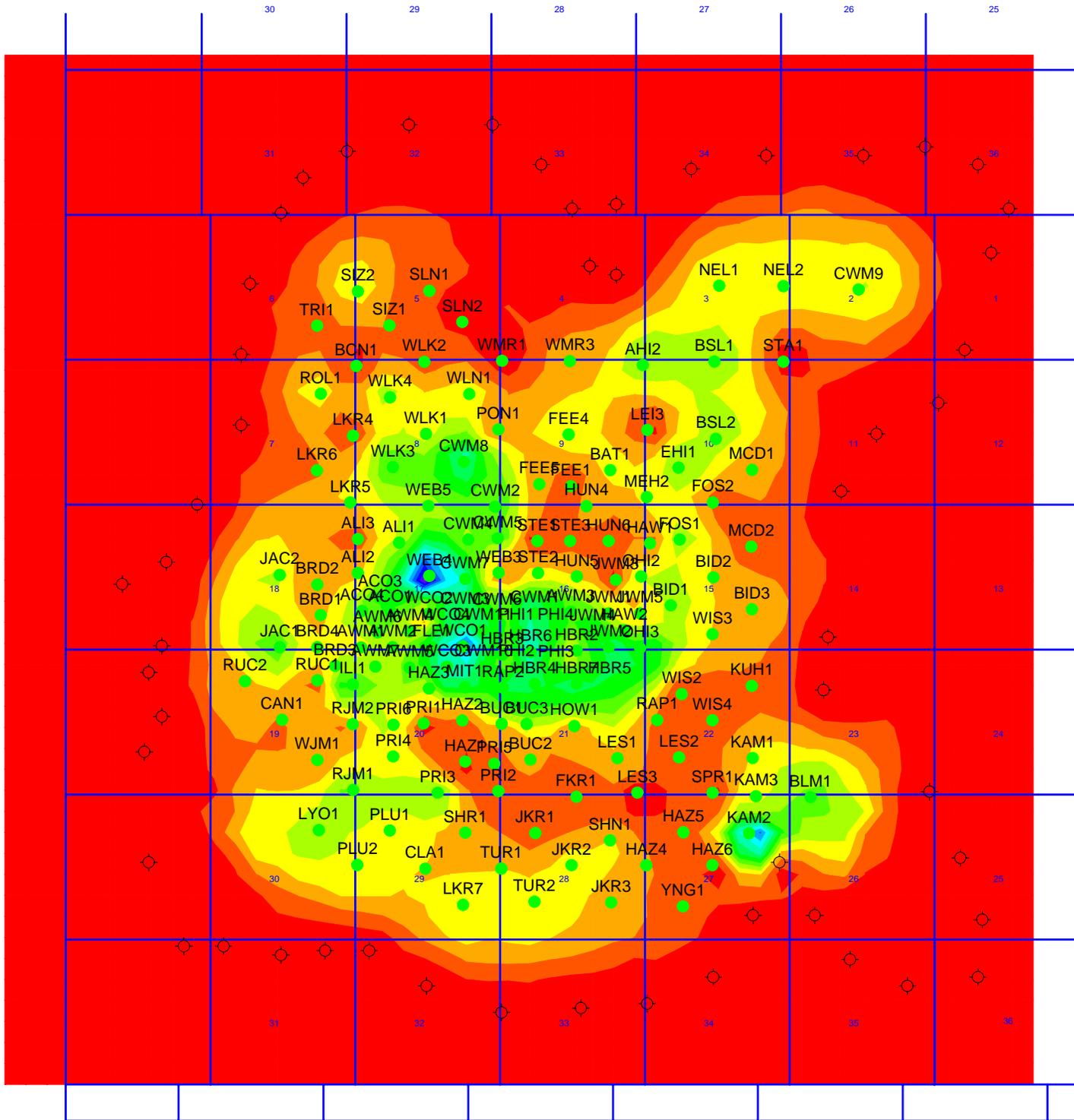
1997 Total Inventory (Stg = 0%)



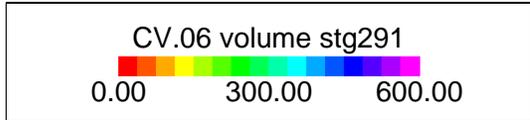
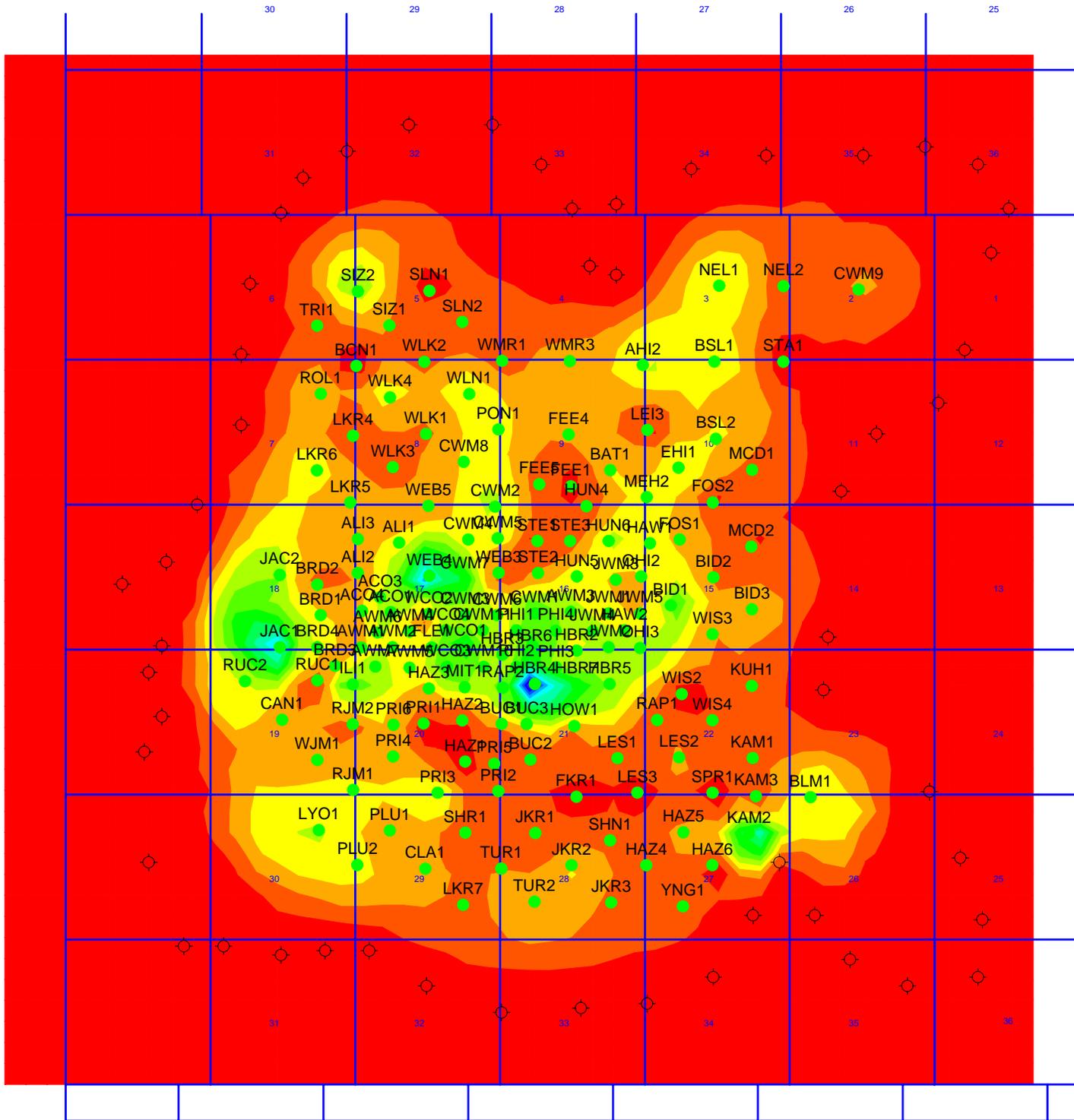
2006 Total Inventory (Stg = 0%)



1997 Inventory (Stg = 29.1%)



2006 Inventory (Stg = 29.1%)



1997 Total Inventory (Stg = 0%)

Total Cells: 2500
Dx: 750
Dy: 750
Valid Cells: 2500

Sum: 282880
Area: 1.40625e+009
Average: 113.152

Volume: 1.5912e+011

2006 Total Inventory (Stg = 0%)

Total Cells: 2500
Dx: 750
Dy: 750
Valid Cells: 2500

Sum: 311719
Area: 1.40625e+009
Average: 124.688

Volume: 1.75342e+011

1997 Inventory (Stg = 29.1%)

Total Cells: 2500
Dx: 750
Dy: 750
Valid Cells: 2500

Sum: 78452.4
Area: 1.40625e+009
Average: 31.381

Volume: 4.41295e+010

2006 Inventory (Stg = 29.1%)

Total Cells: 2500
Dx: 750
Dy: 750
Valid Cells: 2500

Sum: 96351.2
Area: 1.40625e+009
Average: 38.5405

Volume: 5.41976e+010



PEOPLES GAS, LIGHT AND COKE CO.

J. WILLIAMS NO. 4

TRAPPED GAS STUDY

(Preliminary Report)

This report is based entirely upon core samples, soils, solids liquids, or gases, together with related observational data, provided solely by the client. The conclusions, inferences, deductions and opinions rendered herein reflect the examination, study and testing of these items, and represent the best judgement of Petrophysical Properties, Inc. Any reliance on the information contained herein concerning the profitability or productivity on any well, sand, or drilling activity is at the sole risk of the client, and Petrophysical Properties, Inc., neither extends nor makes any warranty or representation whatsoever with respect to same. This report has been prepared for the exclusive and confidential use of the client and no other party.



PEOPLES GAS, LIGHT AND COKE COMPANY
 J. WILLIAMS NO. 4
 MANLOVE FIELD
 CHAMPAIGN CO., ILLINOIS

FORMATION : MT. SIMON
 DRLG FLUID : WATER BASE
 LOCATION :
 CORES : CONVENTIONAL

FILE NO. : 2-920714-1
 DATE : JULY 20, 1992
 API NO. :
 ANALYSTS : TG, HP, CC, HS

TRAPPED GAS STUDY

SMPL NO.	DEPTH (ft)	Kair mD(1)	POR (%)	K/Phi Sq rt	GR DEN (g/cc)	Kbrine mD(2)	Kair mD(3)	Swi (%)	Kbrine mD(4)	Stg (%)	LITHOLOGY
46	4013.2	14.360	9.43	12.3	2.648	3.09	3.29	57.5	1.52	31.2	Sd, buff, w ind, fg-peb
66	4027.1	28.200	11.50	15.7	2.636	3.70	4.44	50.2	1.73	35.6	Sd, buff, w ind, vfg-peb
71	4031.0	14.000	7.57	13.6	2.648	5.60	2.31	52.5	3.51	31.6	Sd, buff, w ind, vfg-peb
79	4040.4	94.000	10.13	30.5	2.650	27.80	29.60	49.9	18.75	27.3	Sd, buff, w ind, vf-cg
86	4045.2	299.000	8.07	60.9	2.649	152.00	45.60	46.3	53.00	38.0	Sd, buff, w ind, f-cg
112	4061.5	713.000	14.23	70.8	2.647	330.00	401.00	32.0	102.00	28.7	Sd, buff, w ind, vf-fg, cg lam(4)
115	4063.7	150.000	10.97	37.0	2.644	65.00	52.00	42.8	7.67	27.0	Sd, buff, w ind, vf-fg, vsshy, s bioturb
120	4067.6	506.000	8.68	76.4	2.655	148.00	97.00	56.7	61.00	21.9	Sd, buff, w ind, vf-mg cg-peb lam(4)
142	4081.7	94.000	11.04	29.2	2.645	13.34	20.00	50.7	4.66	37.1	Sd, buff, w ind, fg, f-mg, lam(4), vs pyr
178	4111.1	3.240	14.36	4.8	2.630	0.64	0.27	81.3	0.28	17.0	Sd, buff, w ind, vf-fg, s carb lam(2), vs pyr
180	4113.1	59.000	8.82	25.9	2.645	21.50	12.59	54.9	4.29	29.2	Sd, buff, w ind, vf-cg, f-cg lam(4), vs pyr
193	4125.2	215.000	12.84	40.9	2.647	73.90	51.00	52.8	26.70	24.6	Sd, buff, w ind, vf-fg, vfg-peb lam(4), vs pyr

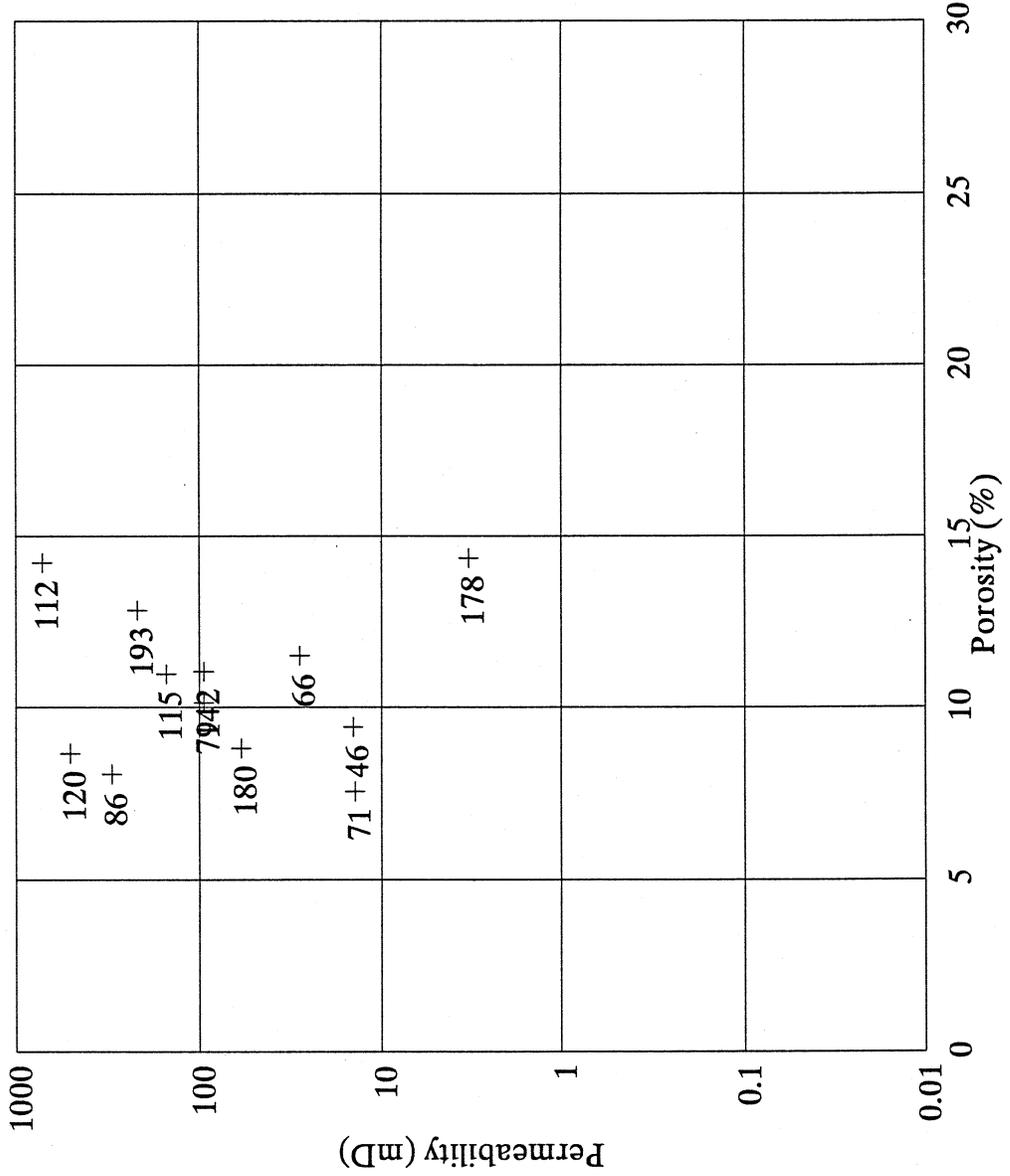
- (1) air permeability @ 400 psig net confining stress (ncs)
- (2) brine permeability (100000 ppm NaCl) @ 2250 psig ncs
- (3) air permeability @ Swi @ 2250 psig ncs
- (4) brine permeability @ Stg @ 2250 psig ncs

Initial water saturation (Swi) established by low rate gas injection.
 Trapped gas saturation (Stg) established by low rate brine injection.



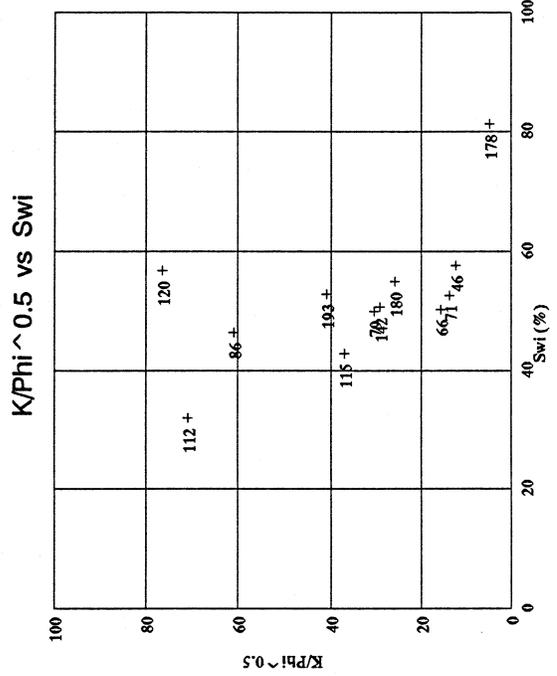
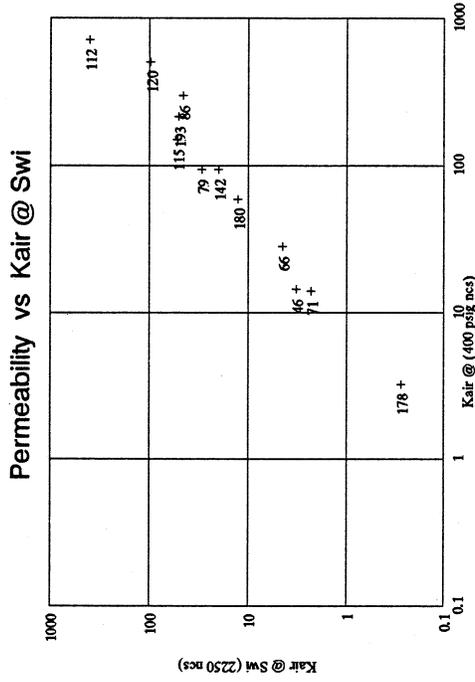
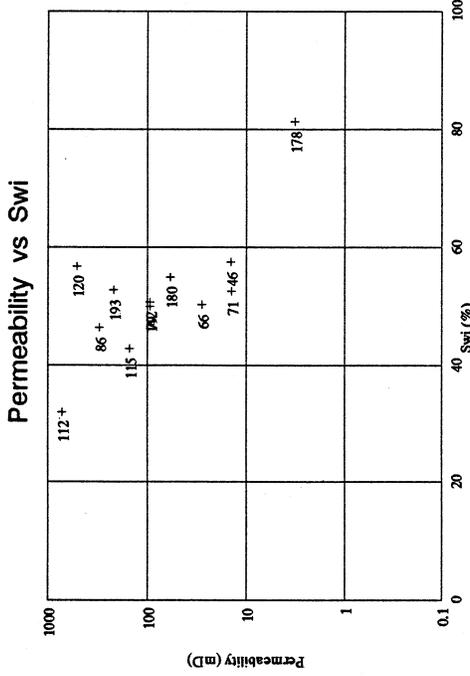
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PERMEABILITY vs POROSITY



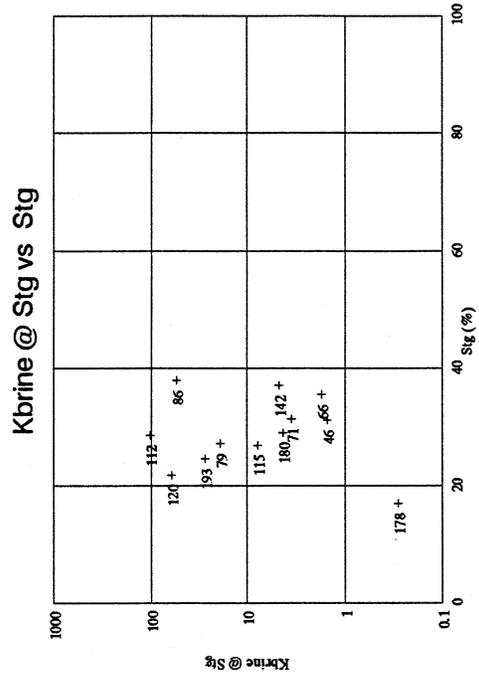
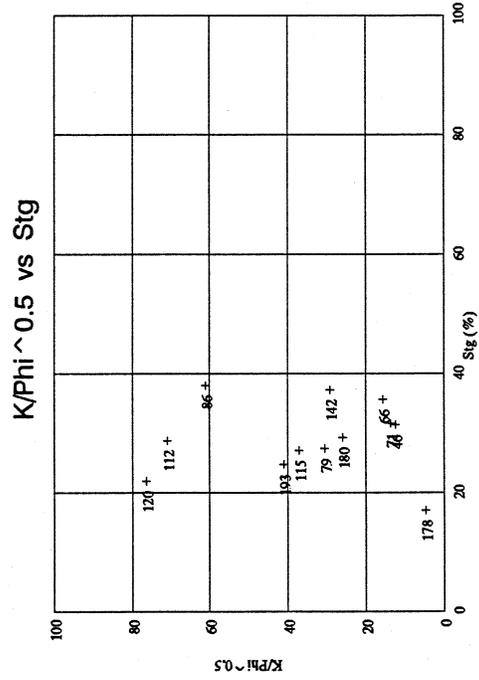
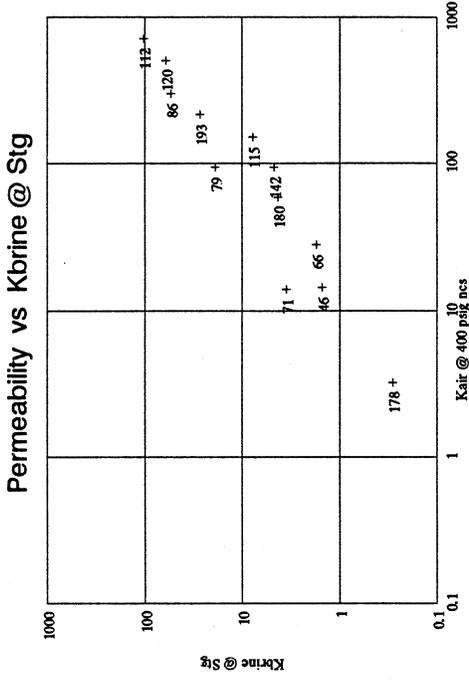
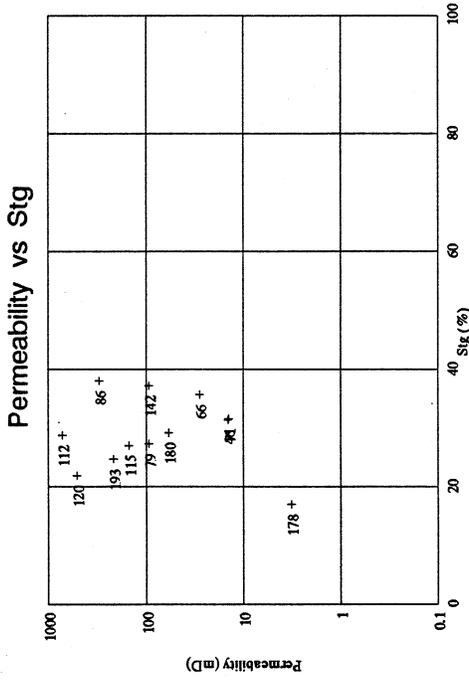


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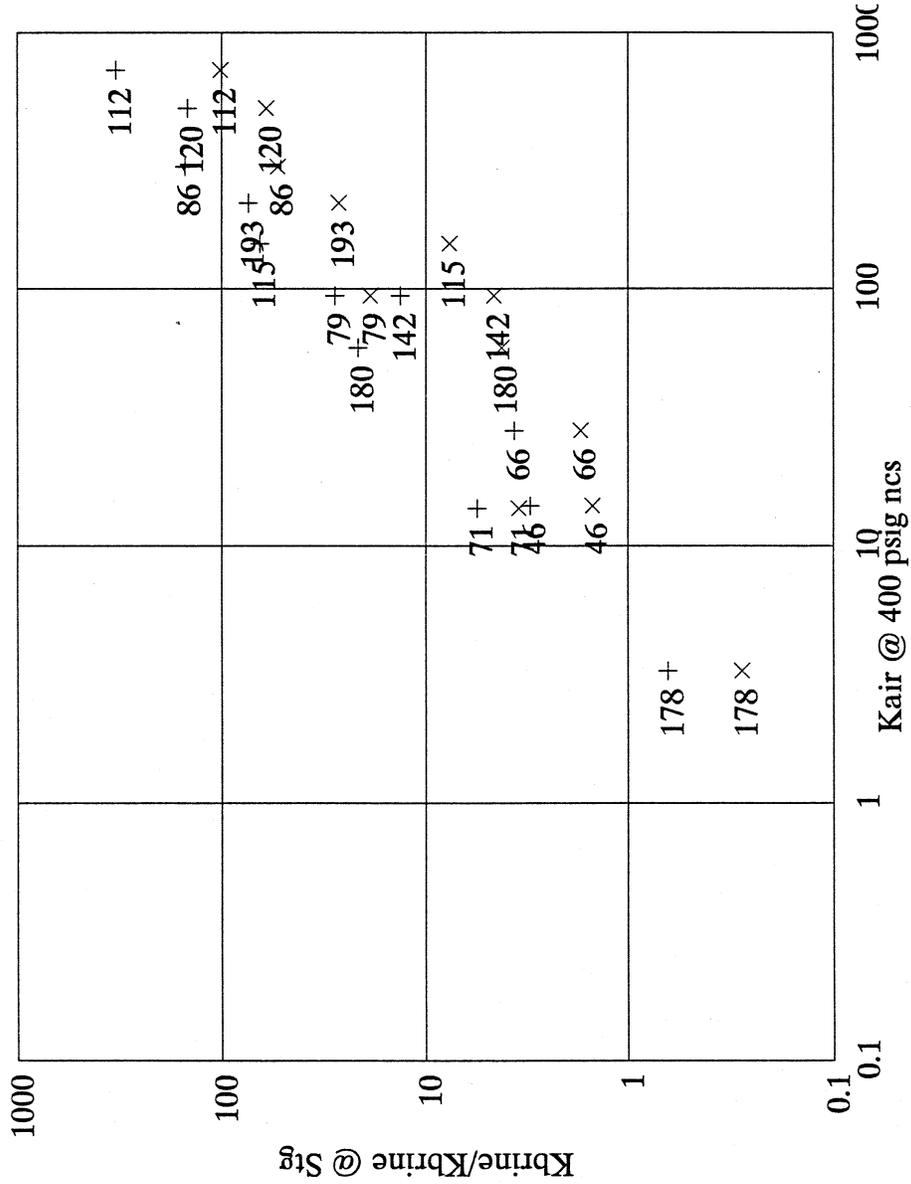
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BRINE PERMEABILITY VS PERMEABILITY



x Kbrine @ Stg @ 2250 ncs + Kbrine @ 2250 ncs

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**Verification of Increased Recoverable and Non-Recoverable Gas
As Presented in "Manlove Field Reservoir Volume Calculations"
By Mr. Ted Kronas dated July 20, 2007**

SUMMARY AND CONCLUSIONS: In the above document, values are calculated for field total gas volume and trapped gas volume in 1997 and 2006. This trapped gas is non-recoverable cushion gas. The changes in these values indicate where gas saturation has changed as inventory has increased.

The changes show that trapped gas as a percent of inventory decreased during this period. It is concluded that most of the growth took place in parts of the reservoir already saturated with gas rather than in virgin aquifer. This minimized the gas trapped during the growth, and it allowed the peak decline to be extended and working gas to increase.

It is also concluded that the cushion gas injected during the period was sufficient to maintain or increase reservoir performance. The only requirement for sustained performance with the additional hub working gas is the yearly allocation of cushion gas to support the added hub volume.

METHODS AND PROCEDURES: Peoples Gas routinely verifies gas inventories using data from Neutron logging surveys from which gas saturations are derived in conjunction with mapped field pressure data. The product of gas saturation, porosity and thickness are mapped. A rectangular grid is imposed. For each grid, this product is the volume of gas in place at reservoir conditions. The value is converted to surface volumes using the pressure mapped for each grid. There is some variation in these calculated values and measured inventory values, but the values typically agree within +/- 10 to 15 percent.

This procedure was used to investigate the increase in non-trapped gas volume by subtracting trapped gas saturation from the logged gas saturations. These non-trapped volumes were subtracted from inventory to estimate gas entering the aquifer and becoming trapped.

Core Petrophysics ran tests on 12 core samples in 1992. The tests included a determination of trapped gas saturation in samples initially saturated with irreducible water and gas. For the 12 samples, the average maximum trapped gas saturation was 29.1 percent. Actual trapped gas saturations are probably somewhat lower.

Peoples determined total inventory and mobile gas inventory in 1997 and 2006 using the gridding procedure described above. Mobile gas was determined by subtracting the average trapped gas saturation of 29.1 percent from each grid. The results are shown below:

<u>GAS IN PLACE - Bscf</u>	<u>1997</u>	<u>2006</u>	<u>Difference</u>
INVENTORY VALUES	147.91	166.00	18.09
GRIDDED VALUES	159.12	175.34	16.22
<u>Sg Trapped = 29.1%</u>			
NON-TRAPPED GRIDDED	44.13	54.20	10.07
ADJ. NON-TR. GRIDDED	41.02	51.31	10.29
TRAPPED GAS	106.89	114.69	7.80
PERCENT TRAPPED	72.27	69.09	-3.18

The first two lines of the table compare gas in place determined from the gridding procedure with inventory values in 1997 and 2006. Gridded values are in acceptable agreement with inventory values. The match is not exact which is expected, but it is well within acceptable limits. Actual inventory grew by 18.09 Bscf during this period.

The lower four lines are values derived after the average trapped gas saturation has been subtracted from gridded values. The non-trapped gridded values (line 3) are from the mapping and gridding procedure. These values are adjusted in line 4 by the ratio of gridded total inventory to actual inventory. Trapped gas, the next to last line in the table, is the difference between total inventory and the non-trapped volume. This trapped gas is non-recoverable cushion gas.

The table shows that inventory increased 18.09 Bscf during this period, while the trapped gas inventory increased by 7.80 Bscf. More significantly, the trapped gas as a percent of inventory decreased during this period.

It is concluded that most of the growth took place in parts of the reservoir already saturated with gas rather than in virgin aquifer. Trapped gas was minimized in the growth. This allowed the peak decline to be extended and working gas to increase.

The decrease in the percentage of trapped gas indicates that the cushion gas injected during the period was sufficient to maintain or increase reservoir performance as observed in the field. The additional hub working gas volumes are essentially layered on top of the current working gas and base gas. The only requirement for sustained performance is the yearly allocation of cushion gas during injection to support the added hub volume.



Charles R. Connaughton, P. E., TX, LA (not licensed in Illinois)
Reservoir Consultant -- July 23, 2007