



02358088

PLAINS EXPLORATION COMPANY
1135 Petroleum Club Building
Denver, Colorado 80202

RECEIVED

AUG - 3 1967

COLO. OIL & GAS CONS. COMM.

June 1, 1967 Completion Report - - - - - Fink #1

Location: NW NW - Sec. 4 - T17S - R45W, Kiowa County, Colorado

Elevation: 4154 K.B.
4144 Gr.

Casing: 206' of 8 5/8" set at 215' K.B. cemented with 175 sacks common cement 3% HA5.

5451' of 5 1/2" 15.5# set at 5460 with 100 sacks of cement with 2% Gel, 12 1/2# Gilsomite per sack, 1% CFR2, and 12% salt.

Commenced: 6/15/66 (w/r)
6/1/67 (w/pu)

Completed: 7/17/66 (w/r)
6/13/67 (w/pu)

June 1, 1967 Baney Well Service on location at 7:00 p.m. Rig up and rig Welex to run Micro-Seismograph and Gamma logs. Could not get Welex tool to perform, so shut down to wait on repairs.

June 2, 1967 Welex repaired tool and completed logging at 4:00 a.m. Corrected Welex log 6' down the hole to match the "X" marker on Schlumberger open hole log. T.D. 5426' with casing collars 6' lower than pipe tally shows. Swabbed hole dry to 5300'. Halliburton dumped 500 gal. -15% MCA, 3000 gal. treated water and 1100 gal. of water. Rig Welex to perforate with super dyna jets. Perforated 5256' to 5266' with 11 holes (1 hole per ft.) at 1:55 p.m. Perforated 5238' to 5245' with 8 holes and 5227' to 5234' with 8 holes (1 hole per ft.) at 2:45 p.m. Fluid level remained 700' down the hole all thru and after perforating. Halliburton finished loading the hole with 18 bbl. water and pressured to 450 psi to put 75 gal. into formation. Pressure bled to less than 100 psi in 3 minutes. Let set for 6 more minutes and put 40 gallon in at 200 psi. Pressure bled to less than 100 psi in 3 minutes. Let set for 7 more minutes and pumped 24 bbl. at 8 1/2 bbl. per minute with pressure starting at 800 psi and ending at 600 psi. Instant shut in pressure 200 psi, bled to zero in one minute. Hole went on vacuum and fluid top was 300' down hole in 28 minutes. Started swabbing one hour after shut in with fluid top 900' down hole and 160 bbl. of seed water to be recovered. Had 2'4" or 39.50 bbl. water in swab tank and should have 11'9" in swab tank when seed is recovered. Started swabbing at 4:40 p.m. and at 6:40 p.m. had hole swabbed to 5000' with 9'9" in swab tank or 34 bbl. seed to be recovered. Had spots of dead-looking oil on top of pull with water muddy and some live acid. Swabbed to 5200' at 7:00 p.m. Got 200' acid water with some beads dead oil and muddy water. Pulled from 5200' at 7:30. Got 150' muddy acid water with oil diminishing. Pulled from 5200' at 8:00. Got 100' of same. Shut down for overnight fillup with 10'0" in swab tank or 29 bbl. to be recovered.

June 3, 1967 Fluid at 3900' at 8:00 a.m. 1300' fillup in 12 hours. 31.2 bbl. or 2.6 bbl. per hour, caught top 50 gal. in clean drum. Muddy water with acid smell. Had some spots of dead oil but less than last night. Swabbed hole down to 5200' at 9:00 a.m. Water still very muddy with few spots of dead oil. Had 11'10" in swab tank at 9:00 a.m. so all seed is recovered. Start swab test at 9:00 a.m. pulling swab every half hour from 5200'.

<u>Time</u>	<u>Gal. Fluid</u>	<u>Bbl. over seed</u>	<u>Remarks</u>
9:00		3.50	
9:30	80	5.00	Dark Brn. & Blk. muddy water
10:00	80	7.00	More specks of dead oil
10:30	55	8.50	Dead oil specks decreasing
11:00	70	10.50	" " " "
11:30	60	12.00	" " " "
12:00(Noon)	55	13.00	" " " "
12:30	50	14.00	" " " "
1:00	50	15.00	
1:30	50	16.00	No oil specks
2:00	50	17.00	" " " "
2:30	50	19.00	" " " "
3:00	50	20.00	" " " "
3:30	50	21.50	" " " "
4:00	50	22.50	
4:30	45	23.50	Change to dark red muddy water
5:00	45	24.50	" " " " " "
			Small bubbles but does not act like oil
5:30	45	25.50	Less bubbles
6:00	45	26.50	
6:30	45	28.00	
Shut in for night.			Change to Brn. Muddy water

June 4, 1967 Fluid at 4200' at 8:30 a.m. 14 hour fillup 1000 gal. 24 bbl. or 1.7 bbl. per hour. Swabbed top bbl. into test drum. Water was very muddy (dark brown) with specks of material floating on top. Mud that settled out in bottom of test drum while swabbing hole down had quite a bit of fibrous material in it. Hole swabbed down at 9:30 a.m. with top of last pull in test drum. Had total of 53 bbl. over seed and start swab test, pulling every half hour from 5200'.

<u>Time</u>	<u>Gal. Fluid</u>	<u>Bbl. over seed</u>	<u>Remarks</u>
9:30		53.00	
10:00	100	55.50	Dark brn. muddy water
10:30	60	57.00	Lighter brn. muddy water
11:00	55	58.00	" " " "
11:30	50	59.50	" " " "
12:00(Noon)	270	66.00	
2:00	10	56.00	Went to bottom of rat hole-5425'
2:30	35	67.00	Dark red muddy water
3:00	35	68.00	Lighter red muddy water
3:30	35	69.00	" " " "
4:00	35	69.50	Lt. Red(almost brn) muddy water
4:20	0		Lt. Brown muddy water
			Set swab at 5100' at 4:00 p.m.
			No Leak from Above.

June 4, 1967 SWAB TEST - (Continued)

<u>Time</u>	<u>Gal. Fluid</u>	<u>Bbl. over seed</u>	<u>Remarks</u>
4:30	35	70.50	More red with some blk. mud
5:00	30	71.50	Slightly red with some blk. mud
5:30	30	72.00	Yellow muddy water with some blk. mud
6:00	35	72.50	Brown muddy water with some blk. mud

Shut down for night.

June 5, 1967 Fluid at 4400' at 8:00 a.m. 800 gal. fillup in 14 hour. 19 bbl. or 1.35 bbl. per hour. Swabbed top of first and last pulls into test drum while swabbing well down. Got black muddy water with fibrous mud settled out in bottom of drum. Start swab test at 9:00 a.m. Pulling every half hour from 5200'.

<u>Time</u>	<u>Gal. Fluid</u>	<u>Bbl. over seed</u>	<u>Remarks</u>
8:30	840	92.50	Blk. muddy water
9:00	50	93.50	Some specks hard dead oil
9:30	50	94.50	Dark brn. muddy water
10:00	42	95.50	" " " "
10:30	40	96.50	" " " "
11:00	40	97.50	Dark brn. muddy water
11:30	35	98.50	" " " "
12:00(Noon)	35	99.00	" " " "
12:30	35	100.00	" " " "
1:00	35	101.00	" " " "
1:30	35	102.00	Dark brn. muddy water, some specks hard dead oil
2:00	35	102.50	Dark brn. muddy water
2:30	35	103.50	" " " "
3:00	35	104.50	Dark brn. muddy water, gas smell noticed
3:30	35	105.00	Dark brn. muddy water
4:00	35	106.00	" " " "
4:30	35	107.00	" " " "
5:00	35	108.00	" " " "
5:30	35	108.50	" " " "
6:00	35	109.50	Dark brn. muddy water, gas lit 15' before fluid.

Shut down for night.

June 6, 1967 Fluid at 4450' at 8:00 a.m. 750 gal. fillup in 14 hours. 18 bbl. or 1.30 bbl. per hour. Swabbed 800 gal. (19 bbl.) to tank and test drum. Water was very black and top of first pull in test drum left almost 1 gallon of black fibrous material that could be picked up with magnet when dry. Had well swabbed to 5200' at 8:30 a.m. Start swab test at 8:30 a.m. pulling every half hour from 5200'.

<u>Time</u>	<u>Gal. Fluid</u>	<u>Bbl. over seed</u>	<u>Remarks</u>
8:30	800	128.50	Black muddy water, no gas
9:00	75	130.50	" " " , lit gas
9:30	50	131.50	" " " , no gas

June 6, 1967 SWAB TEST - (Continued)

<u>Time</u>	<u>Gal. Fluid</u>	<u>Bbl. over seed</u>	<u>Remarks</u>
10:00	40	132.50	Black muddy water, no gas
10:30	40	133.50	Black muddy water, trapped gas in sample bomb
11:00	35	134.50	Black muddy water, 5' gas 10' ahead of water
11:30	35	135.50	Black muddy water, no gas
12:00(Noon)	35	136.00	" " " , no gas

Water Samples
Perforations 5227-66 (Spergen)
Samples by Halliburton

Bbls. Over Seed	<u>4</u>	<u>18</u>	<u>26</u>	<u>53</u>	<u>94</u>	<u>130</u>
Chlorides	31,251	28,410	25,560	22,728	19,784	19,784
Ph	4	5	5.5	6.5	7.5	7.5
Sp Gr	1.060	1.070	1.065	1.070	1.03	1.025
Iron	Hvy	Hvy	Hvy	Md	Hvy	MHvy
Sulfates	Hvy	Md	Hvy	Hvy	MHvy	Hvy
Cal	2,565	3,078	3,078	2,052	--	--
Mag	1,872	936	1,248	936		

Samples by Richard W. Volk

Bbls. Over Seed	<u>4</u>	<u>18</u>	<u>53</u>	<u>104</u>	<u>137</u>
Chlorides	28,000	26,000	23,000	17,800	16,300

Gas Analysis
(Run through Tilley's Mud Logging Chromatograph)

Well	<u>Fink</u> Perf - 5227-66	<u>Fink</u> Perf 5227-66 #2	<u>Fremont</u> <u>Burnham Dawson</u> Casing head Gas Sample 6-7-67	<u>Fremont</u> <u>Burnham Dawson</u> Gas off oil
Methane	31.4%	30.7%	38.5%	3.5%
Ethane	2.3	--	19.0	8.6
Propane	29.2	30.2	20.7	24.2
Iso Butane	7.7	8.7	5.6	11.2
Normal Butane	22.4	22.2	10.6	22.3
Iso Pentane	3.1	4.2	2.8	16.4
Normal Pentane	3.9	4.0	2.8	13.8

* Percent is figured by adding the units of each gas recorded on the chromatograph and dividing into the units of the specific gas.

June 6, 1967 Ran swab to 5420' at 12:30 p.m. got 225 gal. of black, clear, and green water. Rig Lane-Wells to set Baker model "N" Bridge Plug at 5220'. Set Bridge Plug at 5220' at 1:10 p.m. Ran bailer at 2:00 p.m. Hole dry. Lane-Wells shot 11 "E" bullets at 5142', 46', 48', 54', 55', 56', 57', 76', 78', 80' and 82' at 2:40 p.m. Ran Bailer at 3:00 p.m. Hole dry. Ran Bailer at 3:40 p.m. Hole dry. Lane-Wells shot 21 "E" bullets at 5088', 89', 90', 91', 94', 95', 96', 5116', 18', 20', 22', 24', 40', 41', 43', 44', 49', 50', and 58' at 4:00 p.m. Ran Bailer at 4:20 p.m. Hole dry. Ran bailer at 5:20 p.m. Got 1 pint brownish water. Ran bailer at 6:20 p.m. Hole dry. Ran bailer at 7:00 p.m. Got 1 pint water. Shut rig down for night at 7:00 p.m. Halliburton on location at 10:30 p.m. to acidize the 32 holes from 5088' to 5182' in the St. Louis. Acidized with 1000 gal. 15% MCA, 1000 gal. 15% HCl, 3000 gal. treated water, and 2376 gal. raw water. Staged 16 RCN balls in the 1000 gal. HCl as follows: 5 balls at 250 gal., 5 balls at 500 gal. and 6 balls at 750 gal. Breakdown pressure 650 psi, pumping rate 8 bbls. per minute with final pressure 175 psi and instantaneous shut in pressure 0 psi. Well went on slight vacuum. Shut well in at 11:30 p.m. with 176 bbl. seed to be recovered.

June 7, 1967 Fluid at 1300' at 7:30 a.m. 3900' in pipe is 93 bbl. with 83 bbl. in formation (48 bbl. acid water and 35 bbl. treated water). Swabbed well down to 5050' at 11:00 a.m. Had recovered 101.50 bbl. with 74.50 bbl. still to be recovered. No positive show of oil at this time. Started swab test of St. Louis pulling swab every half hour from 5050'.

<u>Time</u>	<u>Gal.</u>	<u>Seed Left</u>	<u>Remarks</u>
11:00		74.50	
11:30	80	72.50	Treated water no acid odor
Noon	80	70.50	" " " " "
12:30	75	69.00	" " " " "
1:00	75	67.50	" " " " "
1:30	70	66.50	" " " " "
2:00	70	65.50	" " " " " , tank gauge 5' 0 1/2"
2:30	60	64.00	
3:00	50	63.00	
3:30	45	62.00	In test drum - Lit 25' gas, tank gauge 5' 1"
4:00	45	61.00	" " " - Gas increasing
4:30	35	60.50	" " " " "
5:00	26	60.00	" " " " "
5:30	26	59.50	" " " - 500' gas
6:00	20	59.00	" " " - 600' "
6:30	20	58.50	" " " - 700' "

Shut down for night with 58.50 bbl. of seed still to be recovered. (10.50 bbl. treated water and 48 bbl. acid water.)

June 8, 1967 Fluid at 4740' at 7:30 a.m. 13 hour fillup 310 gal. or 24 gal. per hour. 20 psi pressure at surface and gas all the way with first swab pull. Start swab test of St. Louis formation with 51 bbl. of seed still to be recovered. (48 bbl. acid water and 3 bbl. treated water). Ran swab to 5050' at 9:00 a.m. got 65 gal. brown muddy water with some black heavy oil and 1800' of gas.

SWAB TEST - St. Louis

Milk hole at 9:30 and pull swab from 5050' at 10:00 a.m. got 35 gal. brown muddy water with some heavy black oil and 600' of gas.

June 8, 1967 SWAB TEST - St. Louis (Continued)

Milk hole at 10:30 and pull swab from 5050' at 11:00 a.m. Got 35 gal. of same as above with 800' of gas.

Pulled swab from 5050' at 11:30 a.m. Got 15 gal. of same as above with 400' of gas.

Pulled swab from 5050' at Noon. No fluid. No gas.

Pulled swab from 5220' (PBDT) at 12:30 p.m. Got 170 gal. fluid more red than above with no oil show and no burnable gas.

Set swab at 5170' at 12:35 p.m. and pulled at 1:15 p.m. to check upper perms. Got 5 gal. fluid and 900' gas.

Ran swab back to 5170' and pulled at 2:00 p.m. Got 20 gal. fluid and 900' of gas.

Ran swab to 5220' at 2:15 p.m. Got 10 gal. fluid. No gas.

Ran swab at 5130' at 2:15 p.m. and pulled at 3:00 p.m. Got 35 gal. dark red water with 900' gas.

Ran swab to 5130' at 3:00 p.m. and pulled at 3:45 p.m. Got no fluid and 500' gas.

Ran swab to 5220' at 4:00 p.m. No fluid. No gas.

Ran swab to 5110' at 4:00 p.m. and pulled at 4:45 p.m. Got no fluid and 450' of gas.

Ran swab to 5110' at 4:45 and pulled at 5:30 p.m. Got no fluid and 350' of gas.

Ran swab to 5220' at 5:45 p.m. Got 55 gal. of brown muddy fluid with some oil and 25' of gas.

Ran swab to 5110' with 40 gal. fluid on top of swab at 5:45 p.m. and pulled at 6:30 p.m. to check gas from top perms. Got no fluid back and 350' of gas.

Ran swab to 5220' at 6:45 p.m. and got 50 gal. fluid and 350' of gas.

Shut down for night with 40 bbl. of seed still to be recovered in St. Louis.

June 9, 1967 Fluid at 5060' at 7:15 a.m. 12 1/2 hour fillup. 160 gal. or 13 gal. per hour. 10.5 psi of surface at 7:15 a.m. gas all the way to top. Swabbed to 5170'. Got 110 gal. water with show of oil and slight acid smell. Start swab test - milking the hole 45 minutes past the hour and pulling from 5150' 15 minutes past the hour.

SWAB TEST - St. Louis

<u>Time</u>	<u>Gal.</u>	<u>Bbl.</u> <u>Seed Left</u>	<u>Remarks</u>
8:15 a.m.	35	36.00	550' Gas
9:15	20	35.50	450' Gas
10:15	20	35.00	" "
11:15	15	35.00	" "
12:15 p.m.	15	34.00	" "
1:15	15	34.00	" "
2:15	15	33.50	400' "
3:15	15	33.00	375' "
4:15	10	32.75	450' "
5:15	10	32.50	400' "

St. Louis Swab Test after MCA and acid and before acid-frac. 2 pulls from 5220' (PBDT) at 6:00 and 6:15 p.m. to dry up hole. Got one bbl. fluid

June 9, 1967 (Continued)

leaving 31.50 bbl. of seed still to be recovered.
Halliburton on location at 6:00 p.m. but no acid. Shut well in to wait for acid from Dumas, Texas.

June 10, 1967 20,000 gal. 15% Acid Frac

At 2:54 a.m. Halliburton had two H.T. 400 pump trucks connected. They started loading hole and formation started taking fluid at 900 lbs. while pumping about 34 B.P.M. At 800 lbs. they went for a higher gear and reached 36 B.P.M. at 850 lbs. In two minutes the pressure dropped to 750 lbs., but went back to lower gear, so rate dropped to approximately 33 B.P.M. at 700 lbs. When the first eight balls hit bottom the pressure showed about 100 lbs. increase. In 4 minutes the pressure dropped about 100 lbs. The second set of eight balls hit bottom with about a 200 lb. increase, which leveled for about 4 minutes. The last set of eight more balls hit bottom, and the pressure increased 400 lbs. or to 1175 lbs., then showed a slight increase for approximately 4 minutes with the meter showing 30 bbls. per minute. When pumping stopped there was no noticeable Check In Pressure and the well was on a vacuum in about 2 minutes. The job completed at 3:12 a.m. Maximum treating pressure 1200 lbs. Minimum treating pressure 650 lbs. Maximum rate 36 B.P.M. Minimum rate 30 B.P.M. Average rate 32 B.P.M.

Total fluid used 608 bbls., total pumped into formation 484 bbls. Well closed in and trucks disconnected. At 11:00 a.m. 3100' of fluid in hole. Swabed approximately 48 bbls. into test tank. At 11:55 a.m. acid gas blew fluid up hole to 600' from top. Shut down swabbing and let acid gas blow off. Started swabbing again at 12:35 Noon, found fluid about 2000' down hole.

With the 31 bbls. from other job we have a total of 639 bbls. to recover.

2:30 p.m. switched from Halliburton tank to swab tank. Had back 106 bbls. swabbing approximately 30 bbls. per hour from 3000' with good kick back from acid gas.

4:00 p.m. pulled swab from top of perf. Now 148 1/2 bbls. swabbed from hole or approximately 74 bbls. from formation in 5 hours.

At this point looks like formation gave up 15 bbls. per hour while swabbing hole down.

Pulled swab 5 times from top of perf. Then started hourly test.

5:00 to 6:00 p.m.	8.10 bbls.
6:00 to 7:00 p.m.	10.60 bbls.

Now 185.20 bbls. back
111.20 out of formation
No gas to surface

Last pull at 7:00 p.m. left well open to bleed off acid gas.

Now a total of 454 bbls. seed left in hole.

June 11, 1967 7:00 a.m. approximately 2100' of fluid in hole. Started swab out of hole. Gas showed, but would hardly burn, probably mixed with acid gas. Did burn good at last of pull. Very slight scum, size of hand, brownish oily type muck on top of drum from top of fluid from first pull. Put rest of fluid in test tank.

Put 62.60 bbls. in tank swabing to top of perf. 247.80 from hole, 173.80 out of formation. 391 total seed left in hole at 9:30 a.m.

At 11:00 a.m. fluid leveling. Pulling from top of perf. Gas will flash 2500' ahead of swab, but does not burn good any of the way to swab. Spot of brownish scum in center of drum from first fluid ahead of swab. No live oil and no live oil odor.

Test below shows fluid and gas coming from formation after 263 bbls. of the 608 bbls., plus 31 bbls. seed from earlier treatment have been swabed back all but 74 bbls.

	<u>Fluid Bbls.</u>	<u>Oil Show</u>	<u>Burnable Gas Ahead of Swab</u>	<u>Total Fluid Back Bbls.</u>	<u>Fluid From Formation Bbls.</u>	<u>Seed Left In Formation Bbls.</u>	<u>Remarks</u>
1st hr.	6.64	x	500'	269.44	195.44	369.56	
2nd hr.	7.34	x	200'	276.78	202.78	362.22	x very slight
3rd hr.	5.93	x	400'	282.71	208.71	356.29	spotted
4th hr.	8.20	x	400'	290.91	216.91	348.09	scum
5th hr.	5.93	x	400'	296.84	222.84	342.16	Brownish
6th hr.	6.00	x	320'	302.84	228.84	336.16	oily type
7th hr.	4.20	x	425'	307.04	233.04	331.96	muck
8th hr.	8.20	x	600'	315.24	241.24	323.76	34,500 parts per million

8 hrs. swabing averaged 6.55 bbls. per hr.
130 bbls. taken from hole in last 24 hrs.
Left well open for night.

June 12, 1967 7:00 a.m. swab showed 1900' of fluid in hole. 1300' of good burnable gas ahead of swab.

9:00 a.m. put 53.40 bbls. in tank swabing down to top of perf. Of the 639 bbls. total seed we now have back 368.64 bbls. of the amount that was in formation we have back 294.64 bbls. left in formation 270.36 bbls.

Hourly test below after swabing hole down.

1st hr.	8.50	x	500'	377.14	303.14	261.86	
2nd hr.	9.70	x	400'	386.84	312.84	252.16	
3rd hr.	7.00	x	400'	393.84	319.84	245.16	
4th hr.	7.00	x	800'	400.84	326.84	238.16	
5th hr.	5.50	x	450'	406.34	332.34	232.66	
6th hr.	8.20	x	500'	414.54	340.54	224.46	
7th hr.	5.50		500'	420.04	346.04	218.96	
8th hr.	6.00		500'	426.04	352.04	212.96	

[REDACTED]

WATER SAMPLES
from St. Louis
Perforations 5078 - 5182

After 20,000 gal. Acid Frac

<u>Sample #</u>	<u>Bbls. Seed to be Recovered</u>	<u>Chlorides</u>
1	365	34,500
2	323	34,000

GAS ANALYSIS
from St. Louis
Perforations 5078 - 5182
Before - 20,000 Gal. Acid Frac

	<u>Sample #1</u>	<u>Sample #2</u>
Methane	61.0	58
Ethane	19.5	19.8
Propane	14.3	16.1
Isobutane	1.4	1.9
Normal butane	3.6	3.7
Iso pentane	--	--
Normal pentane	--	--

* See Gas Analysis, page 4, for method used to arrive at percentages

Permission from all parties to plug at 5:00 p.m. Dumped approximately 3/4 yard of coarse sand in hole to obtain fillup to approximately 5050', will wait until morning to check fillup and dump 5 sacks of cement.

June 13, 1967 Fillup 5050', dumped 5 sacks cement with pulling unit bailer.


E. E. Duncan
Production Superintendent