GEOLOGICAL DEPARTMENT

UNION GAS CORPORATION

INDEPENDENCE, KANSAS

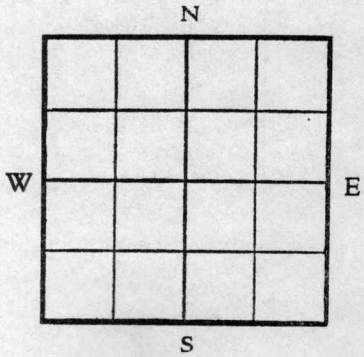
Company Empire Gas and Fuel Company

S. T. R. 31-25-5
County Butler
State Kansas
Lease and Well No. Murphy #70

Contractor

Drilling Commenced 4/25/17 Drilling Completed 6/23/17

Initial Production 200 bbls. Initial Rock Pressure



Location 990' from S. line and 330' from W. line of quarter section.

Casing 12½" 750'
10" 1610' Pulled out
8¼" 2242
6-5/8" 1000
3" 2500

Driller's Record of Formations

Clay yellow soft	15	15	
Lime white hard	25	40	
Lime white hard	65	105	
Slate white soft	10	115	
Slate white soft	15	130	
Red rock hard	10	140	
Slate dark soft	30	170	
Lime white hard	25	195	little water
Sandy lime white hard	10	205	185
Slate dark soft	16	221	
Red rock hard	8	229	
Sand gray soft	14	243	
Slate dark soft	269	512	little water
Lime white hard	7	519	380
Slate black soft	37	556	
Red rock hard	20	576	
Lime white hard	5	581	
Slate dark soft	155	736	
Lime white hard	110	845	
Slate dark soft	48	894	
Lime white hard	28	922	
Slate dark soft	55	977	Small amt.water
Lime white hard	115	1192	1065
Slate dark soft	10	1202	Small amt.water
(Some water and gas at 1225)			1125-1210
Slate and Shells	65	1267	
Lime white hard	15	1282	
Gritty lime white	30	1312	
Lime white hard	200	1512	HFW 1505
Slate dark soft	50	1562	HFW 1535
Lime white hard	8	1570	
Sand white hard	65	1635	
Slate dark soft	125	1760	
Lime white hard	70	1830	
Slate dark soft	160	1990	
Lime white hard	40	2030	
Lime white hard	35	2065	
Lime white hard	45	2110	HFW 2120
Lime white hard	50	2160	
Lime white hard	20	2180	
Slate dark soft	62	2242	
Slate dark soft	48	2290	
Slate Dark soft	115	2405	
Red rock hard	15	2420	
Slate dark soft	39	2459	
Sand brown	49	2508	T. D.

2465 Oil
2481 Oil

Sand record:
Top 2459'. Botton 2508'.

Geological Form 5

31-25-5E

Company Empire

Sec. 31 T. 25 R. 5E

Loc. Appr. SW NW SW NW 1/4

Farm Murphy No. 70

County Butler

Total Depth 2508

Comm. Apr 25, 1917 Comp. June 23, 1917

Shot or Treated

Contractor

Issued

33.31

Lefay filing index

Casing

20 in.		10 in	1610 pulled	3"-2500
15 1/2		8 1/4	2242	
12 1/2	750	6 5/8	1000,1459	
13 3/8		5 3/16	~~pulled~~	

Elevation 1402.0

Production I.P./24 hrs-200 bbls After 18 mos-10 bbls; 2 yrs-10 bbls

Figures Indicate Bottom of Formation

Formation	Depth
Clay	15
Lime	40
Lime	105
Slate	115
Slate	130
Red rock	140
Slate	170
Lime	195
S. L.	205
Slate	221
Red rock	229
Sand	243
Slate	512
Lime	519
Slate	556
Red rock	576
Lime	581
Slate	736
Lime	846
Slate	894
Lime	922
Slate	977
Lime	1192
Slate	1202
Slate & shells	1267
Lime	1282
Gr. lime	1312
Lime	1512
Slate	1562
Lime	1570
Sand	1635
Slate	1760
Lime	1830
Slate	1990
Lime	2030
Lime	2065
Lime	2110
Lime	2160
Lime	2180
Slate	2242
Slate	2290
Slate	2405
Red rock	2420
Slate	2459
Sand	2508
Bottom sand	2508

Remarks:

Little water	185
Little water	380
Small amt of water	1065
Small amt of water	1125-1210
Some water & gas	1225
H.F.W.	1505
H.F.W.	1535
Water	1745
H.F.W.	2120
Oil	2465
Oil	2481

CDH