

# OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS - PHONE HE1-2650

February 5, 1966

Mack C. Colt, Inc.  
P.O. Box 427  
Iola, Kansas

Gentlemen:


Enclosed herewith are the results of tests run on the Rotary core taken from the Haynes Lease, Well No. X-37, Allen County, Kansas, and submitted to our laboratory on January 31, 1966.

This core was sampled and the samples sealed in cans by a representative of Oilfield Research Laboratories.

Your business is greatly appreciated.

Very truly yours,

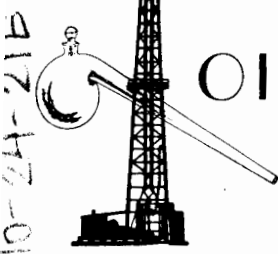
OILFIELD RESEARCH LABORATORIES



Carl L. Pate

CLP:rf

5 c.



10-24-21B  
X-37  
Haynes



## OILFIELD RESEARCH LABORATORIES

-LOG-

Company Mack C. Colt, Inc. Lease Haynes Well No. X-37

<u>Depth Interval,</u>	<u>Description</u>
<u>Feet</u>	

638.0 - 643.8 - Gray shale.

643.8 - 650.8 - Gray sandy shale.

650.8 - 651.3 - Brown shaly sandstone.

651.3 - 652.0 - Gray sandy shale.

652.0 - 652.5 - Brown shaly sandstone.

652.5 - 654.2 - Brown, fine grained sandstone.

654.2 - 654.7 - Gray shale.

654.7 - 661.8 - Brown, slightly shaly sandstone.

661.8 - 662.0 - Gray shale.

662.0 - 665.5 - Brown, fine grained sandstone.

665.5 - 670.0 - Light brown, shaly sandstone with a vertical fracture from 668.0 to 669.7.

670.0 - 670.4 - Gray shale.

670.4 - 670.8 - Brown, fine grained sandstone.

670.8 - 671.7 - Gray shale.

671.7 - 671.9 - Brown, fine grained sandstone.

671.9 - 672.4 - Gray sandy shale.

672.4 - 672.6 - Brown sandstone.

672.6 - 673.2 - Gray shale.

673.2 - 674.2 - Brown, slightly shaly and carbonaceous sandstone.

674.2 - 675.0 - Gray shale.

675.0 - 676.1 - Light brown, fine grained sandstone with a vertical fracture from 675.6 to 676.1.

676.1 - 677.0 - Finely laminated, shaly sandstone with a vertical fracture from 676.1 to 676.6.

## OILFIELD RESEARCH LABORATORIES

LOG (Continued)

<u>Depth Interval,</u>	<u>Description</u>
<u>Feet</u>	

677.0 - 679.2 - Brown, fine grained sandstone.

679.2 - 680.8 - Gray sandy shale.

680.8 - 681.7 - Brown, fine grained sandstone.

681.7 - 682.0 - Gray shaly sandstone.

682.0 - 703.7 - Dark, fine grained, carbonaceous sandstone with a vertical fracture from 693.0 to 694.0.

703.7 - 705.0 - Gray, slightly calcareous, shaly sandstone with a vertical fracture from 703.9 to 705.0.

705.0 - 707.1 - Dark, carbonaceous sandstone with a vertical fracture from 705.0 to 705.8.

707.1 - 711.5 - Dark and gray, carbonaceous, laminated, shaly sandstone with a vertical fracture from 707.4 to 708.8.

711.5 - 711.6 - Coal.

711.6 - 715.0 - Gray shale.

715.0 - 718.0 - Gray sandy shale.

Oilfield Research Laboratories

RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Mack C. Colt, Inc.

Lease

Haynes

Well No.

X-37

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content Bbbs. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X md.
			Oil	Water	Total			Ft.	Cum. Ft.		
1	651.1	16.4	41	54	95	521	24.	0.5	0.5	260	12.00
2	652.1	18.7	51	46	97	739	92.	0.5	1.0	369	46.00
3	653.1	21.2	38	43	81	624	119.	1.1	2.1	686	130.90
4	654.1	22.8	38	46	84	671	156.	0.6	2.7	403	93.60
5	655.1	22.6	41	41	82	719	139.	0.9	3.6	647	125.20
6	656.1	22.0	36	44	80	614	202.	1.0	4.6	614	202.00
7	657.1	23.0	38	48	86	676	116.	1.0	5.6	676	116.00
8	658.1	20.1	36	52	88	560	36.	1.0	6.6	560	36.00
9	659.1	22.4	40	51	91	695	109.	1.0	7.6	695	109.00
10	660.1	25.9	42	38	80	843	76.	1.0	8.6	843	76.00
11	661.1	20.8	39	47	86	629	81.	1.2	9.8	754	97.20
12	662.1	22.8	34	47	81	601	88.	0.6	10.4	361	52.80
13	663.1	20.9	42	54	96	681	67.	1.0	11.4	681	67.00
14	664.1	22.8	40	44	84	706	84.	1.0	12.4	706	84.00
15	665.1	21.6	37	45	82	619	101.	0.9	13.3	557	90.90
16	666.1	20.4	34	50	84	538	33.	1.1	14.4	592	36.30
17	667.1	21.2	33	51	84	542	49.	1.0	15.4	542	49.00
18	668.1	21.0	37	44	81	601	33.	1.0	16.4	601	33.00
19	669.1	19.9	34	58	92	524	24.	1.4	17.8	734	33.60
20	670.6	21.0	43	45	88	699	91.	0.4	18.2	279	36.40
21	671.8	20.2	40	44	84	626	77.	0.2	18.4	125	15.40
22	672.5	20.5	38	52	90	604	96.	0.2	18.6	121	19.20
23	673.3	21.6	41	38	79	686	92.	0.5	19.1	343	46.00
24	674.1	22.6	33	35	68	579	68.	0.5	19.6	289	34.00

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Mack C. Colt, Inc.

Lease

Haynes

Well No.

X-37

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content Bbls. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X md.
			Oil	Water	Total			Ft.	Cum. Ft.		
25	675.1	17.8	36	57	93	496	95.	1.1	20.7	546	104.50
26	677.1	21.7	37	50	87	623	71.	0.6	21.3	374	42.60
27	678.1	16.5	33	63	96	421	37.	1.0	22.3	421	37.00
28	679.1	17.4	36	60	96	485	30.	0.6	22.9	391	18.00
29	681.1	21.2	37	40	77	608	292.	0.9	23.8	547	263.00
30	682.1	21.4	42	47	89	696	10.	0.6	24.4	418	6.00
31	683.1	23.4	64	28	92	1,162	4.3	1.0	25.4	1,162	4.30
32	684.1	19.8	50	47	97	768	24.	1.0	26.4	768	24.00
33	685.1	23.6	55	28	83	1,008	22.	1.0	27.4	1,008	22.00
34	686.1	24.1	57	28	85	1,064	184.	1.0	28.4	1,064	184.00
35	687.1	24.2	60	23	83	1,128	61.	1.0	29.4	1,128	61.00
36	688.1	21.2	59	34	93	969	6.5	1.0	30.4	969	6.50
37	689.1	23.4	52	28	80	944	21.	1.0	31.4	944	21.00
38	690.1	20.9	64	29	93	1,038	1.3	1.0	32.4	1,038	1.30
39	691.1	24.0	65	19	84	1,210	15.	1.0	33.4	1,210	15.00
40	692.1	22.4	62	26	88	1,077	21.	1.0	34.4	1,077	21.00
41	693.1	24.4	65	23	88	1,229	8.0	1.0	35.4	1,229	8.00
42	694.1	21.8	68	30	98	1,149	7.4	1.0	36.4	1,149	7.40
43	695.1	23.4	63	29	92	1,144	2.7	1.0	37.4	1,144	2.70
44	696.1	23.8	46	31	77	849	1.7	1.0	38.4	849	1.70
45	697.1	21.6	48	26	74	803	37.	1.0	39.4	803	37.00
46	698.1	24.3	67	18	85	1,262	37.	1.0	40.4	1,262	37.00
47	699.1	24.8	61	22	83	1,172	2.9	1.0	41.4	1,172	2.90
48	700.1	24.3	63	22	85	1,188	5.2	1.0	42.4	1,188	5.20

Oilfield Research Laboratories

RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Mack C. Colt, Inc.

Lease

Haynes

Well No.

X-37

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content Bbls. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X md.	
			Oil	Water	Total			Ft.	Cum. Ft.			
49	703.1	21.3	47	33	80	777	2.5	1.0	43.4	777	2.50	
50	705.1	11.3	62	24	86	539	Imp.	0.6	44.0	323	0.00	
51	706.1	22.1	44	30	74	755	1.6	1.5	45.5	1,132	2.40	
52	708.0	20.7	57	33	90	915	1.0	1.0	46.5	915	1.00	
53	709.1	21.1	45	26	71	736	0.46	1.0	47.5	736	0.46	
								Total	-----	38,182		

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Mack C. Colt, Inc. Lease Haynes Well No. X-37

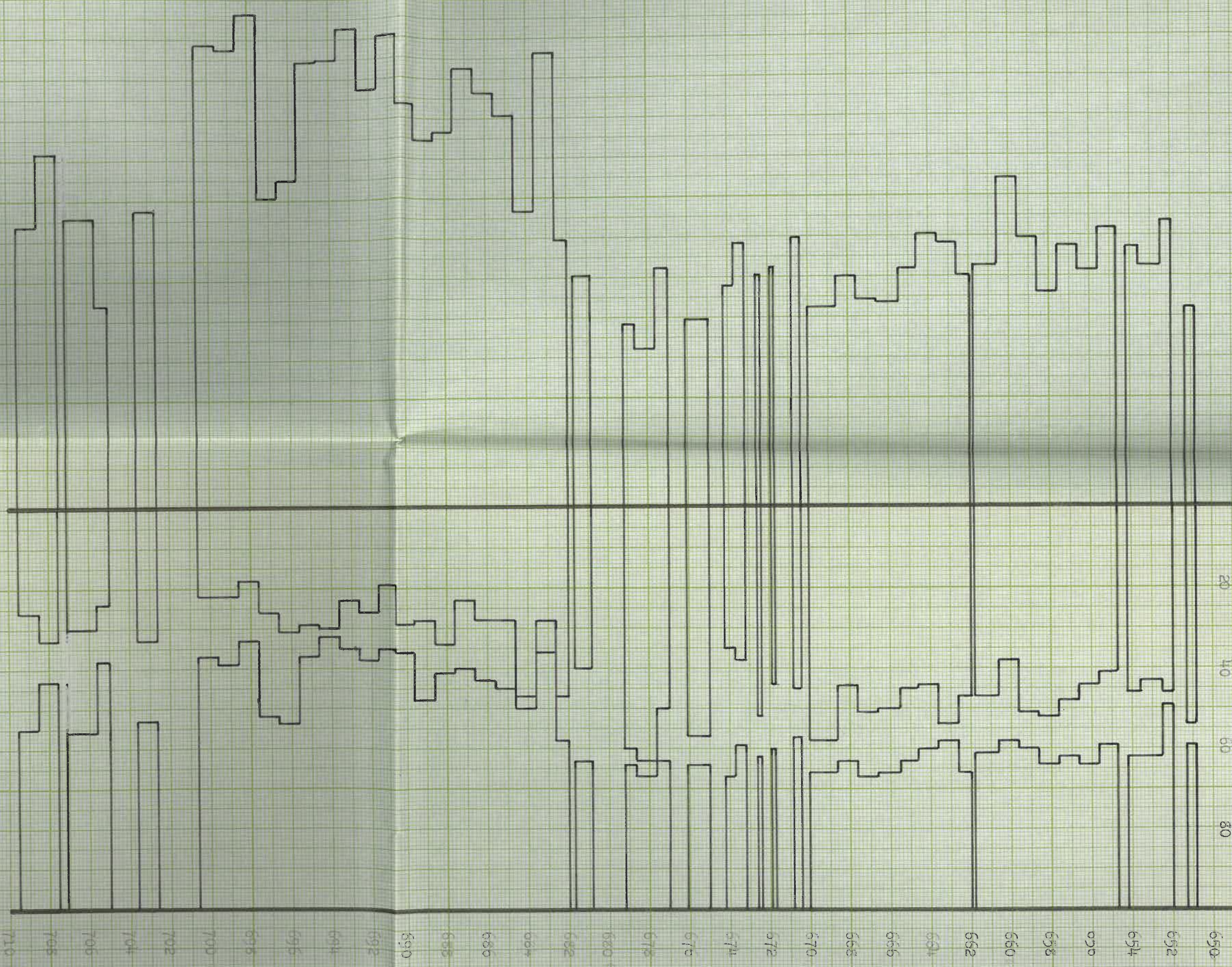
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.	Total Oil Content Bbls./Acre
650.8 - 665.5	13.3	21.8	39.3	46.4	100.6	1,338.60	8,812
665.5 - 681.7	10.5	20.0	35.7	50.7	73.1	768.00	5,905
682.0 - 709.5	23.7	22.4	56.8	28.3	20.5	474.36	23,465
650.8 - 709.5	47.5	21.9	47.2	38.3	55.0	2,580.96	38,182

3513. /A. 171.



PERCENT

PERCENT

1200 1000 800 600 400 200 90 20 70 40 50 30 80 10

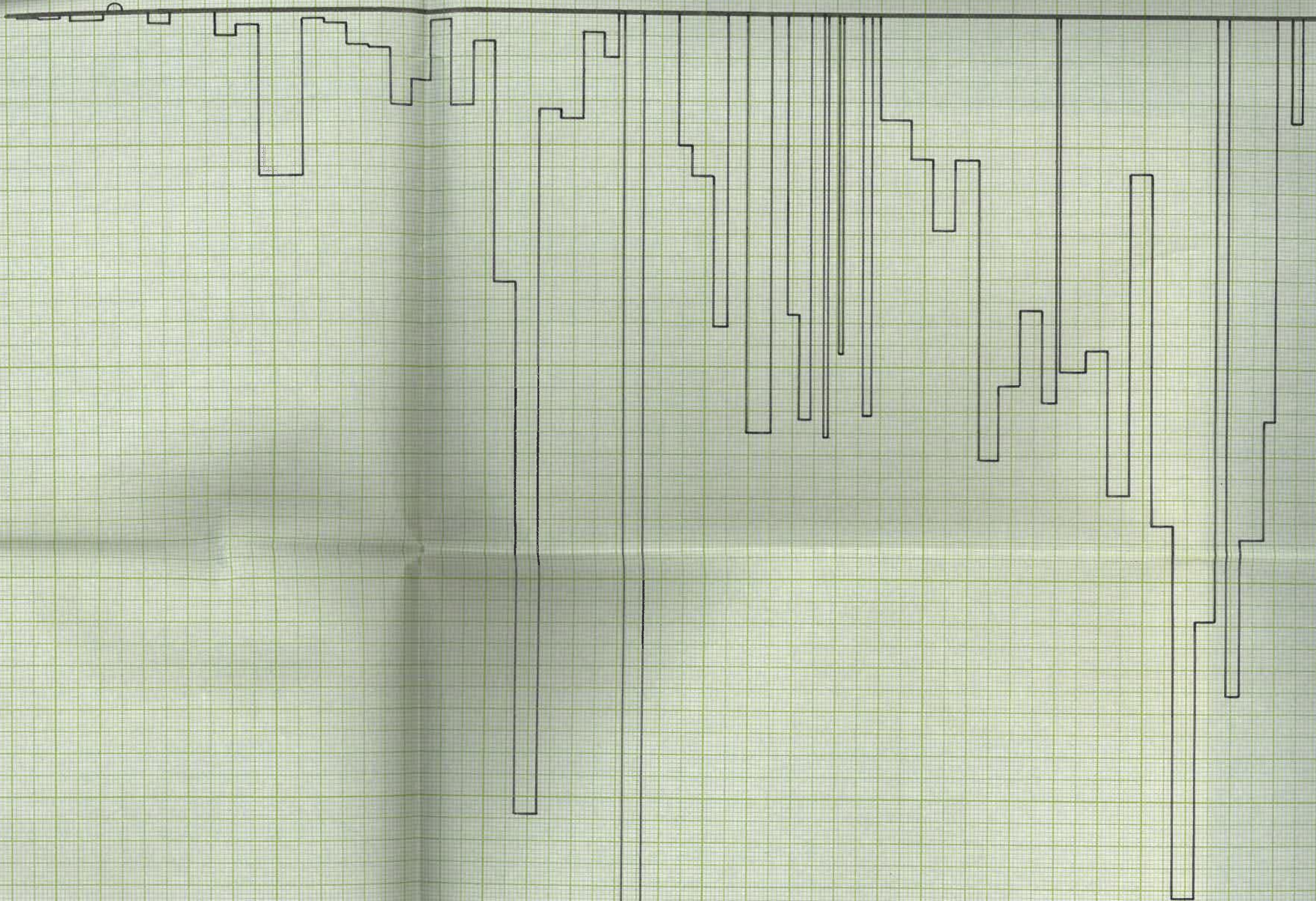



 SANDSTONE  
 SEMI SANDSTONE

 CARBONACEOUS SANDSTONE  
 CARBONACEOUS SHALY SANDSTONE

**MACK C. COL.**  
HAYNES LEAST  
ALLEN COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE POROSITY, PERCENT	AVG. OIL SATURATION PERCENT	AVG. VA SATURAT PERCENT
550.8 - 559.5	17.3	21.8	35.3	46.1
655.5 - 661.7	10.5	20.0	35.7	50.7
682.0 - 709.5	25.7	22.8	56.8	28.3



 CALCAREOUS SILTY SANDSTONE  
 VERTICAL FRACTURE

 SANDY SHALE  
 SHALE  
 IMPERMEABLE TO AIR

AVG. OIL CONTENT BBL/S./A. FT.	TOTAL OIL CONTENT BBL/S./ACFE	AVG. AIR PERMEABILITY, MILLIDARCS
662	8,812	100.6
562	5,995	73.1
990	23,465	20.5
804	58,182	55.0

COLT, INC.  
 NO. X-37