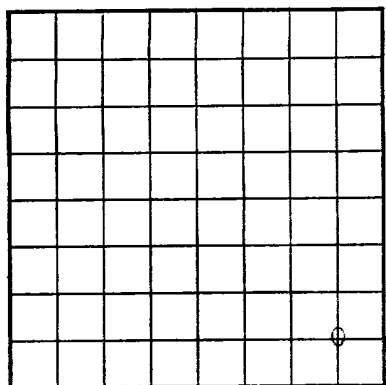


Form 9-390

U. S. LAND OFFICE Dante Fe
SERIAL NUMBER 972292
LEASE OR PERMIT TO PROSPECT Harrington



LOCATE WELL CORRECTLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

Company General American Oil Co. of Texas Address Box 426, Loop Hill, Tex.
Lessor or Tract Harrington Field Wildcat State New Mexico
Well No. 1 Sec. 4 T. 27N R. 5W Meridian RTN County Chaves
Location 660 ft. {N.} of 2 Line and 660 ft. {E.} of 3 Line of Section Elevation 6582 KE
(Surface floor relative to sea level)
The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.
Signed W. A. Brouskop
Date May 10, 1952 Title Asst. Field Supt.

The summary on this page is for the condition of the well at above date.

Commenced drilling Sept. 25, 1951 Finished drilling April 10, 1952
Well completed April 21, 1952.

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from 7703' to 7800' (Broken) No. 4, from _____ to _____
No. 2, from _____ to _____ No. 5, from _____ to _____
No. 3, from _____ to _____ No. 6, from _____ to _____

IMPORTANT WATER SANDS

No. 1, from _____ to _____ No. 3, from _____ to _____
No. 2, from _____ to _____ No. 4, from _____ to _____

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated		Purpose
							From—	To—	
<u>2 1/2"</u>	<u>13#</u>	<u>8rd</u>		<u>669.79'</u>	<u>Float</u>				<u>Surface</u>
<u>2 1/2"</u>	<u>26#</u>	<u>8rd</u>		<u>7713.50'</u>	<u>Float (Baker Triple)</u>				<u>Production</u>
<u>2 3/8"</u>	<u>4.7#</u>	<u>8rd</u>		<u>7775.07'</u> (Landed at <u>7787.438'</u>)			<u>7757'</u>	<u>7787'</u>	<u>Production</u>

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
<u>2 1/2"</u>	<u>664'</u>	<u>550</u>	<u>Pump & Plug</u>	<u>Circulated</u>	<u>ceant to surface.</u>
<u>7"</u>	<u>7726'</u>	<u>250</u>	<u>Pump & Plug</u>	<u>1.0795</u>	<u>Circulated to surface.</u>

PLUGS AND ADAPTERS

Heaving plug—Material _____ Length _____ Depth set _____
Adapters—Material _____ Size _____

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out
<u>5"</u>	<u>Ind. East.</u>	<u>Liquid Nitro</u>	<u>180 qts</u>	<u>4-14-52</u>	<u>7754'-7802'</u>	
<u>4 1/2"</u>	<u>Temp. Co.</u>	<u>"</u>	<u>72</u>	<u>"</u>	<u>7801'-7826'</u>	<u>7881'</u>
<u>4 1/2"</u>	<u>"</u>	<u>"</u>	<u>92</u>	<u>"</u>	<u>7827'-7842'</u>	
<u>4 1/2"</u>	<u>"</u>	<u>"</u>	<u>270 qts</u>	<u>"</u>	<u>7843'-7881'</u>	
TOTAL						

TOOLS USED

Rotary tools were used from Surface feet to 7881 feet, and from _____ feet to _____ feet
Cable tools were used from _____ feet to _____ feet, and from _____ feet to _____ feet

DATES

April 24, 1952 Tested on April 26, 1952.
Put to producing April 27, 1952.

The production for the first 24 hours was _____ barrels of fluid of which _____ % was oil; _____ % emulsion; _____ % water; and _____ % sediment. Gravity, °Bé. _____

If gas well, cu. ft. per 24 hours 2,600,000 Gallons gasoline per 1,000 cu. ft. of gas _____
Rock pressure, lbs. per sq. in. 2604#

EMPLOYEES

W. A. Strain, J. Blankenship, Driller J. Burns, E. E. Scharr, Driller
L. A. Mabry, R. M. Young, Driller W. E. Dear, F. Hibbs
J. A. Tillery, H. L. ..., Driller G. S. ..., Driller
G. A. ...

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
<u>0</u>	<u>31</u>	<u>31</u>	<u>Cellar.</u>
<u>21</u>	<u>685</u>	<u>664</u>	<u>Shale & Sand.</u>
<u>605</u>	<u>716</u>	<u>31</u>	<u>Sandy Shale.</u>
<u>716</u>	<u>740</u>	<u>24</u>	<u>Sand.</u>
<u>740</u>	<u>824</u>	<u>84</u>	<u>Shale.</u>
<u>824</u>	<u>905</u>	<u>81</u>	<u>Sandy Shale.</u>
<u>905</u>	<u>958</u>	<u>53</u>	<u>Sand.</u>
<u>958</u>	<u>1055</u>	<u>97</u>	<u>Shale.</u>
<u>1055</u>	<u>1077</u>	<u>22</u>	<u>Sand.</u>
<u>1077</u>	<u>1106</u>	<u>29</u>	<u>Sandy Shale.</u>
<u>1106</u>	<u>1206</u>	<u>10</u>	<u>Sand.</u>
<u>1206</u>	<u>1580</u>	<u>374</u>	<u>Sandy Shale.</u>
<u>1580</u>	<u>1650</u>	<u>70</u>	<u>Sand.</u>
<u>1650</u>	<u>1736</u>	<u>86</u>	<u>Shale.</u>
<u>1736</u>	<u>1758</u>	<u>22</u>	<u>Sand.</u>
<u>1758</u>	<u>1767</u>	<u>9</u>	<u>Shale.</u>
<u>1767</u>	<u>1833</u>	<u>66</u>	<u>Sand.</u>
<u>1833</u>	<u>1932</u>	<u>99</u>	<u>Shale.</u>
<u>1932</u>	<u>2022</u>	<u>91</u>	<u>Sand and Sandy Shale.</u>
<u>2022</u>	<u>2066</u>	<u>43</u>	<u>Shale.</u>
<u>2066</u>	<u>2082</u>	<u>16</u>	<u>Sand.</u>
<u>2082</u>	<u>2130</u>	<u>48</u>	<u>Sandy Shale.</u>
<u>2130</u>	<u>2172</u>	<u>42</u>	<u>Sand.</u>

(OVER)

[illegible]

HISTORY OF OIL OR GAS WELL

FORMATION RECORD—Continued

Subscription price, Five Dollars per Annum in Advance. Single Copies, Fifteen Cents.
Entered as Second-Class Matter, October 3, 1917. Postpaid at Special Rate of \$3.75 per Annum.
Acceptance for mailing at Special Rate of Postage provided for in Post Office Department Circular No. 1110, October 3, 1917.
Postage paid at Chicago, Ill., and at additional mailing offices.
Postmaster: Send address changes in advance.

Published by THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 535 North Dearborn Street, Chicago, Ill.
Editor: J. C. LITTLE, M.D., 535 North Dearborn Street, Chicago, Ill.
Business Manager: J. C. LITTLE, M.D., 535 North Dearborn Street, Chicago, Ill.
Copyright, 1919, by The American Medical Association
Printed by THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 535 North Dearborn Street, Chicago, Ill.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300
301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400
401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500
501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600
601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700
701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800
801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900
901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000

FORMATION RECORD

[illegible]

1962

FORMATION

RECEIVED

MAY 23 1952

U. S. GEOLOGICAL SURVEY
FARMINGTON, N. M.

CORE NO. 3 5092.5'-5109.5' (Continued)

FROM	TO	TOTAL FEET	FORMATION
5098.8	5100.3	1.5	60% fine, light gray sandstone with dark gray, shaly sandstone and black shale wavy stringers.
5100.3	5100.9	.6	Dark gray, shaly sandstone and black shale.
5100.9	5102.6	1.7	50% fine, light gray sandstone with dark gray, shaly sandstone and black shaly wavy stringers.
5102.6	5108.6	6.0	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with a few very thin black shale partings. Vertical fracturing. Bleeding very small amount of gas.
5108.6	5109.5	.9	50% fine, light gray sandstone with dark gray, shaly sandstone and black shale stringers. Some vertical fracturing.

CORE NO. 4 5109.5'-5132.5'. Recovered 23'

5109.5	5110.4	.9	Dark gray, shaly sandstone and black shale.
5110.4	5113.7	3.3	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone. Vertical fracturing. Bleeding small amount of gas.
5113.7	5114.2	.5	Dark gray, shaly sand and black shale.
5114.2	5114.9	.7	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with a 1" black shale stringer and a few very thin black shale partings. Vertical fracturing. Bleeding a slight amount of gas.
5114.9	5118	3.1	Dark gray, shaly sand with black shale stringers and partings.
5118	5120.4	2.4	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone. Vertical fracturing. Bleeding very small amount of gas.
5120.4	5120.7	.3	Black shale and dark gray, shaly sandstone.
5120.7	5122.3	1.6	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone. Vertical fracturing. Bleeding very slight amount of gas.
5122.3	5125.2	2.9	Dark gray, shaly sand with wavy black shale stringers.
5125.2	5126.4	1.2	Fine, angular-sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and Pepper) sandstone. Vertical fracturing. Bleeding very small amount of gas.
5126.4	5132.5	6.1	Dark gray, shaly sandstone with wavy black shale stringers and partings.

CORE NO. 5 5132.5'-5145.5'. Recovered 3'

5132.5	5136	3.5	50% fine, angular - sub-angular, well cemented slightly calcareous, cross-bedded, light gray (salt and Pepper) sandstone with dark gray, shaly sandstone and black shale.
5136	5139.5	3.5	90% fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with black shale and shaly sandstone stringers. Some vertical fracturing. Bleeding very small amount of gas.
5139.5	5142.1	2.6	Dark gray, shaly sandstone and black shale with few light gray sandstone stringers.

RECEIVED

MAY 30 1952

OIL CON. COM.

DIST 2

FORMATION RECORD

RECEIVED

FORMATION

TOTAL FEET

TO

FROM

MAY 23 1952

U. S. GEOLOGICAL SURVEY

FARMINGTON, N. M.

CORE NO. 3 2082.5'-2109.5' (Continued)

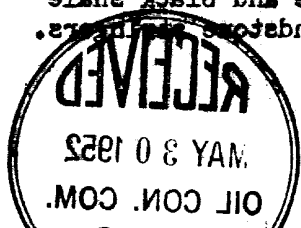
2088.8	2100.3	1.5	50% fine, light gray sandstone with dark gray, shaly sandstone and black shale wavy stringers.
2100.3	2100.9	.6	Dark gray, shaly sandstone and black shale.
2100.9	2102.6	1.7	50% fine, light gray sandstone with dark gray, shaly sandstone and black shale wavy stringers.
2102.6	2108.6	6.0	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with a few very thin black shale partings. Vertical fracturing. Bleeding very small amount of gas.
2108.6	2109.5	.9	50% fine, light gray sandstone with dark gray, shaly sandstone and black shale stringers. Some vertical fracturing.

CORE NO. 4 2109.5'-2132.5' Recovered 23'

2109.5	2110.4	.9	Dark gray, shaly sandstone and black shale.
2110.4	2113.7	3.3	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone. Vertical fracturing. Bleeding small amount of gas.
2113.7	2114.2	.5	Dark gray, shaly sand and black shale.
2114.2	2114.9	.7	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with a few very thin black shale stringers and a few vertical fracturing. Bleeding a slight amount of gas.
2114.9	2118	3.1	Dark gray, shaly sand with black shale stringers and partings.
2118	2120.4	2.4	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone. Vertical fracturing. Bleeding very small amount of gas.
2120.4	2120.7	.3	Black shale and dark gray, shaly sandstone.
2120.7	2122.3	1.6	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone. Vertical fracturing. Bleeding very slight amount of gas.
2122.3	2125.2	2.9	Dark gray, shaly sand with wavy black shale stringers.
2125.2	2126.4	1.2	Fine, angular-sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone. Vertical fracturing. Bleeding very small amount of gas.
2126.4	2132.5	6.1	Dark gray, shaly sandstone with wavy black shale stringers and partings.

CORE NO. 5 2132.5'-2152.5' Recovered 23'

2132.5	2136	3.5	50% fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with dark gray, shaly sandstone and black shale.
2136	2139.2	3.2	50% fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with black shale and shaly sandstone stringers. Some vertical fracturing. Bleeding very small amount of gas.
2139.2	2142.1	2.6	Dark gray, shaly sandstone and black shale with few light gray sandstone stringers.



RECEIVED

FROM

TO

TOTAL FEET

FORMATION

MAY 23 1952

U. S. GEOLOGICAL SURVEY
FARMINGTON, N. M.

CORE NO. 5 5132.5'-5165.5' (Continued)

5142.1	5142.9	.8	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with a few very thin black shale partings. Vertical fracturing. Bleeding very small amount of gas.
5142.9	5143.4	.5	Dark gray, shaly sand and black shale.
5143.4	5144.0	.6	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone. Vertical fracturing. Bleeding very small amount of gas.
5144	5146.5	2.5	Dark gray, shaly sand and black shale with a few light gray sandstone stringers.
5146.5	5147.0	.5	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with a few very thin black shale partings. Vertical fracturing.
5147	5147.6	.6	Black shale and dark gray, shaly sandstone with a few stringers of fine gray sandstone.
5147.6	5148.6	1.0	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with a few black shale partings. Vertical fracturing. Bleeding very small amount of gas.
5148.6	5149.7	1.1	90% fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with black shale stringers and partings. Vertical fracturing. Bleeding very small amount of gas.
5149.7	5150.6	.9	Dark gray, shaly sand and black shale.
5150.6	5151.7	1.1	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with one thin black shale stringer. Bleeding very small amount of gas.
5151.7	5155.0	3.3	Dark gray, shaly sandstone and black shale with 30% fine, gray sandstone as stringers. Vertical fracturing.
5155.	5160.5	5.5	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray sandstone with a few black shale partings. Vertical fracturing. Bleeding very small amount of gas.
5160.5	5162.9	2.4	Black shale and dark gray, shaly sandstone with 10% fine, light gray sandstone as stringers.
5162.9	5165.5	2.6	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with one thin black shale parting. Bleeding very small amount of gas.

CORE NO. 6 5165.5'-5214'. Recovered 48.5'

5165.5	5166.2	.7	Fine, light gray sandstone with a few very thin black shale partings.
5166.2	5166.6	.4	Black shale and dark gray, shaly sandstone.
5166.6	5172.4	5.8	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with a few black shale partings and stringers. Bleeding very small amount of gas.
5172.4	5172.6	.2	Dark gray, shaly sand.
5172.6	5172.9	.3	Fine, light gray sandstone.
5172.9	5174.2	1.3	Dark gray, shaly sandstone and black shale with 25% fine, light gray sandstone.

RECEIVED

MAY 30 1952
OIL CON. COM.
DIST. 3

FORMATION

TEST JATOT

OT

NOTE

2001 8 8 YAM

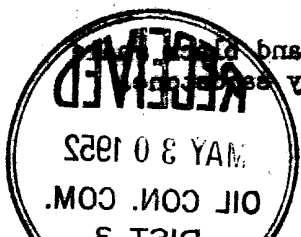
~~FARMINGTON, N. H.~~
~~U. S. GEOLOGICAL SURVEY~~

CONF NO. 2 2135.2-2162.2 (Continued)

Section	Thickness (feet)	Remarks
1	2142.1	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with a few very thin black shale partings. Vertical fracturing. Bleeding very small amount of gas.
2	2143.4	Dark gray, shaly sand and black shale.
3	2144.0	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone. Vertical fracturing. Bleeding very small amount of gas.
4	2146.2	Dark gray, shaly sand and black shale with a few light gray sandstone stringers.
5	2147.0	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with a few very thin black shale partings. Vertical fracturing.
6	2147.6	Black shale and dark gray, shaly sandstone with a few stringers of fine gray sandstone. Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with a few black shale partings. Vertical fracturing. Bleeding very small amount of gas.
7	2148.2	90% fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with black shale stringers and partings. Vertical fracturing. Bleeding very small amount of gas.
8	2149.7	Dark gray, shaly sand and black shale.
9	2150.6	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with one thin black shale stringer. Bleeding very small amount of gas.
10	2151.7	Dark gray, shaly sandstone and black shale with 30% fine, gray sandstone as stringers. Vertical fracturing.
11	2152.0	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray sandstone with a few black shale partings. Vertical fracturing. Bleeding very small amount of gas.
12	2153.9	Black shale and dark gray, shaly sandstone with 10% fine, light gray sandstone as stringers.
13	2155.2	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone with one thin black shale parting. Bleeding very small amount of gas.

COPIES NO. 6 2162.51-2514. Recovered 48.51.

No.	Description	Thickness Feet	Dip
5175.9	Dark gray, shaly sandstone and black shale partings	5174.2	1.3
5175.8	Fine, light gray sandstone.	5175.9	.3
5175.4	Dark gray, shaly sand.	5175.6	.5
	Bleeding very small amount of gas.		
	Few black shale partings and stringers.		
	Gray (salt and pepper) sandstone with a slightly calcareous, cross-bedded, light fine, angular - sub-angular, well cemented,	5175.4	2.8
5166.5	Black shale and dark gray, shaly sandstone.	5166.6	.4
5166.2	Thin black shale partings.		
5165.2	Fine, light gray sandstone with a few very	5166.2	.7





CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

COMPANY EPNG CENTRAL AMERICAN OIL COMPANY DATE 11-16-51 FILE PRML-38
 WELL HENDERSON NO. 1 CORES DIAMOND ANALYSTS LBY - RRL
 FIELD WILDCAT FORMATION AS NOTED ELEVATION
 COUNTY HTO ABILETA DRILG. FLUID OIL EMULSION LOCATION SEC. 1-27N-04E
 STATE NEW MEXICO REMARKS SERVICE NO. 1 AND NO. 2

This analysis, graphs or interpretations are based on observations and material supplied by the client to whom, and for whom, complete and responsible data should be made. The responsibility for accuracy of data and for the validity of the analysis and interpretation is the responsibility of the client. The analysis and interpretation are based on the data supplied and are not a guarantee of results. The analysis and interpretation are based on the data supplied and are not a guarantee of results.

CORE ANALYSIS AND INTERPRETATION

COMPLETION COREGRAPH

PERMEABILITY 0-0 MILLIDARCY TOTAL WATER 0-0 PERCENT PORE SPACE
 POROSITY X-X PERCENT OIL SATURATION X-X PERCENT PORE SPACE

DEPTH FEET	PERMEABILITY MILLIDARCY	POROSITY %	RESIDUAL LIQUID SATURATION % PORE SPACE		PROBABLE FOOD
			OIL	TOTAL	
13	70.5	0.0	5.6	0.0	66.7
14	10.5	0.2	20.1	0.0	16.8
15	10.5	0.0	6.8	0.0	51.4
16	50.5	0.07	1.6	0.0	75.2
17	51.5	0.0	1.7	0.0	14.8
18	52.5	0.0	5.8	0.0	25.9
19	53.5	0.0	1.6	0.0	23.9
20	54.5	0.0	3.8	0.0	20.5
21	55.5	1.9	7.3	0.0	30.1
22	56.5	1.3	22.3	0.0	30.5
23	70.5	0.1	6.1	0.0	29.5
24	80.5	0.3	10.8	0.0	28.1
25	81.5	0.0	6.5	0.0	27.7
26	70.5	0.0	1.1	0.0	29.1
27	60.5	0.0	1.6	0.0	11.5
28	60.5	0.0	8.7	0.0	20.8
29	60.5	0.5	20.5	0.0	22.6
30	60.5	1.8	9.0	0.0	25.5
31	60.5	0.5	8.3	0.0	20.5
32	60.5	0.3	5.7	0.0	10.1
33	60.5	0.6	9.2	0.0	51.2
34	60.5	0.1	20.3	0.0	11.6
35	60.5	0.3	8.8	0.0	20.5
36	70.5	0.0	8.3	0.0	32.5
37	73.5	1.0	9.2	0.0	22.8
38	72.5	0.3	22.0	0.0	23.3
39	73.5	1.0	9.1	0.0	30.3
40	74.5	0.0	8.1	0.0	22.1
41	75.5	0.9	9.1	0.0	30.1
42	76.5	1.6	11.5	0.0	10.8
43	77.5	1.9	11.7	0.0	10.1
44	78.5	0.8	12.9	0.0	53.6
45	79.5	0.7	5.3	0.0	62.3
17.2		16.7			115.6
Core. 17.1		11			11.7
Core. 4.6		12.3			62.3
Core. 0.0		3.4			12.7



FORMATION RECORD

RECEIVED

MAY 23 1952

U. S. GEOLOGICAL SURVEY

FARMINGTON, N. M.

FROM	TO	TOTAL FEET	FORMATION
<u>CORE NO. 6 5165.5'-5214' (Continued)</u>			
5174.2	5175.5	1.3	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone. Vertical fracturing. Bleeding very small amount of gas.
5175.5'	5176	.5	Black shale and dark gray, shaly sandstone grading into fine, light gray sandstone.
5176	5205	29.0	Fine, angular - sub-angular, well cemented, slightly calcareous, cross-bedded, light gray (salt and pepper) sandstone. Vertical fracturing. Scattered secondary deposition of Selenite along fractures. Bleeding very small amount of gas.
5205	5214	9.0	Medium-coarse, angular - sub-angular, well cemented, silicious, cross-bedded, dark gray sandstone with a 1" black shale stringer and a few black shale partings. Vertical fracturing. Irregularly scattered areas of core (approximately 30% of total) showed mud penetration and were bleeding a fair amount of gas. Balance of core was bleeding a slight amount of gas.

CORE NO. 7 5214'-5238'. Recovered 24'.

5214	5223.9	9.9	Medium-coarse, angular - sub-angular, well cemented, silicious, cross-bedded, dark gray, sandstone. Some vertical fracturing. Irregularly scattered areas of core (approximately 30%) showed mud penetration and these areas were bleeding a fair amount of gas. Balance of core was bleeding a small amount of gas.
5223.9	5228.7	4.8	Black, carbonaceous shale with a few coal partings.
5228.7	5235.4	6.7	Dark gray-black, shaly sand and sandy shale with coal partings.
5235.4	5238	2.6	Medium, angular - sub-angular, well cemented, brownish gray sandstone with few black shale partings. Vertical fracturing. Bleeding fair amount of gas.
5238	5244	6	Sand
5244	5595	351	Shale with Sand and Coal stringers.
5595	5597	2	Sand

CORE NO. 8 5597'-5613'. Recovered 16'.

5597	5611.5	14.5	Very fine, angular - sub-angular, well cemented, very slightly calcareous, light gray sandstone with few thin black shale and coal partings. Few small coal fragments. Vertical fracturing. Core bleeding very slight amount of gas (less than Pictured Cliffs or Cliff House).
5611.5	5612.1	.6	Same as above except that sandstone was very fine-medium grained and contained embedded small pyrite crystals. 1" black shale stringer at top. Bleeding very slight amount of gas.
5612.1	5613	.9	Same as interval described from 5597'-5611.5' with vertical fracturing. Bleeding very slight amount of gas.

CORE NO. 9 5613'-5647'. Recovered 34'.

5613	5647	34.0	Very fine, angular - sub-angular, well cemented, slightly calcareous, light gray sandstone with few thin black shale partings. Top 1.5' showed vertical fracturing. Core bleeding fair amount of gas throughout (comparable to Pictured Cliffs).
------	------	------	--

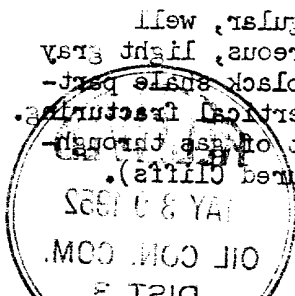
MAY 30 1952

OIL CON. COM.

DIST. 3

FORMATION RECORD

FORMATION	TOTAL FEET	FROM	TO
CORE NO. 9 5513'-5517'. Recovered 34'. Very fine, angular - sub-angular, well cemented, slightly calcareous, light gray sandstone with few thin black shale partings. Top 1.5' showed vertical fracturing. Gore bleeding fair amount of gas (comparable to Pictured Cliffs). 34.0			
CORE NO. 8 5517'-5527'. Recovered 10'. Same as interval described from 5517'-5511.5' stringer at top. Bleeding very slight small pyrite crystals. 1" black shale fine-medium grained and contained embedded same as above except that sandstone was very Cliffs or Cliff House). slight amount of gas (less than Pictured Vertical fracturing. Gore bleeding very partings. Few small coal fragments. stone with few thin black shale and coal very slightly calcareous, light gray sand- Very fine, angular - sub-angular, well cemented, 14.5			
5527 5524 5522 Sand Shale with sand and coal stringers. Sand			
5528 5525.4 5528.7 5523.9 Bleeding fair amount of gas. shale partings. Vertical fracturing. brownish gray sandstone with few black Medium, angular - sub-angular, well cemented, with coal partings. Dark gray-black, shaly sand and sandy shale partings. Black, carbonaceous shale with a few coal Bleeding a small amount of gas. amount of gas. Balance of core was tion and these areas were bleeding a fair (approximately 30%) showed mud penetra- ing. Irregularly scattered areas of core gray, sandstone. Some vertical fractur- cemented, silicious, cross-bedded, dark Medium-coarse, angular - sub-angular, well			
CORE NO. 7 5214'-5238'. Recovered 24'. Gas. of core was bleeding a slight amount of Bleeding a fair amount of gas. Balance of total) showed mud penetration and were tered areas of core (approximately 30% Vertical fracturing. Irregularly scat- stringer and a few black shale partings. gray sandstone with a 1" black shale cemented, silicious, cross-bedded, dark Medium-coarse, angular - sub-angular, well Bleeding very small amount of gas. deposition of Selenite along fractures. cal fracturing. Scattered secondarily gray (salt and pepper) sandstone. Verti- slightly calcareous, cross-bedded, light Fine, angular - sub-angular, well cemented, grading into fine, light gray sandstone. Black shale and dark gray, shaly sandstone amount of gas. cal fracturing. Bleeding very small			
CORE NO. 6 5165.5'-5214'. (Continued) 1.3 5215.5 5176 5205 5176 5205 5214 9.0 5.0 29.0 5.0 1.3			
FORMATION			



FORMATION RECORD

RECEIVED

MAY 28 1952

U. S. GEOLOGICAL SURVEY
FARMINGTON, N. M.

FROM	TO	TOTAL FEET	FORMATION
CORE NO. 10 5647'-5698'. Recovered 51'.			
5647	5677.5	30.5	Very fine, angular - sub-angular, well cemented, slightly calcareous, light gray sandstone. Some vertical fracturing. Good bleeding of gas throughout.
5677.5	5678	.5	Black shale and dark gray shaly sandstone.
5678	5697.5	19.5	Same as interval described from 5647'-5677.5'.
5697.5	5698	.5	Black shale and dark gray shaly sandstone.
5698	5754	56	Sand and shaly Sand.
5754	6116	362	Shale and sandy Shale.
6116	7129.5	1013.5	Shale.
CORE NO. 11 7129.5'-7186'. Recovered 56.5'.			
7129.5	7160.2	30.7	Dark, fissile, soft, micaceous shale with trace of bentonite.
7160.2	7171	10.8	Fine to medium grained, glassy, dark gray sand cemented with black shale interbedded with thin streaks of black shale. No porosity nor fluorescence.
7171	7186	15.0	Black carbonaceous shale.
CORE NO. 12 7186'-7243'. Recovered 57'.			
7186	7243	57	Black carbonaceous shale.
7243	7244	1	Black carbonaceous shale.
CORE NO. 13 7244'-7252'. Recovered 8'.			
7244	7252	8	Black carbonaceous shale.
7252	7610	358	Shale.
7610	7708	98	Shale
7708	7755	47	Sand and Shale.
CORE NO. 14 7755'-7779'. Recovered 24'.			
7755	7756	1	Black carbonaceous shale.
7756	7762.1	6.1	Dark, broken, hard siliceous sand and shale.
7762.1	7763.9	1.8	Fine grained, hard, siliceous, platy, light gray sand.
7763.9	7765.7	1.8	Dark broken sand and shale. Vertical fracturing.
7765.7	7767.9	2.2	Hard black carboniferous shale.
7767.9	7779.0	11.1	Fine to medium grained, hard, siliceous, well cemented, white sand. Vertical fracturing.
7779	7782	3	Sand.
CORE NO. 15 7782'-7788'. Recovered 6'.			
7782	7788	6	Fine grained, very hard, siliceous, well cemented, light gray sand. Slightly pyritic. Vertical fracturing.
CORE NO. 16 7788'-7796'. Recovered 8'.			
7788	7795	7	Same sand as described in Core No. 15.
7795	7796	1	Black carbonaceous pyritic shale.
CORE NO. 17 7796'-7801'. Recovered 5'.			
7796	7801	5	Same sand as described in Core No. 15.
CORE NO. 18 7801'-7816'. Recovered 14.5'.			
7801	7815.5	14.5	Same sand as described in Core No. 15 showing slight vertical fracturing and thin partings of carbon residue. Core bleeding fair amount of gas from slight porosity, from vertical fractures and bedding planes.
7815.5	7816	.5	Portion of core not recovered.

RECEIVED
MAY 30 1952
OIL CON. COM.
DIST. 3

FORMATION RECORD

FROM	TO	TOTAL FEET	FORMATION
<u>CORE NO. 19 7816'-7847'. Recovered 31'.</u>			
7816	7830	14	Same sand as described in Core No. 15 showing slight vertical fracturing. Slight porosity. Bleeding small amount of gas.
7830	7841	11	Black fissile carbonaceous shale interbedded with thin sand lenses.
7841	7847	6	Black carbonaceous shale.
<u>CORE NO. 20 7847'-7857'. Recovered 10.5'.</u>			
7847	7847.17	.17	Very fine, dark gray, shaly sandstone.
7847.17	7847.26	.09	Black shale.
7847.26	7855.5	8.24	Very fine grained, angular to sub-angular, well cemented, siliceous, light gray sandstone with small pyrite grains scattered throughout. Good vertical fracturing. Good odor of gas.
7855.5	7857.5	2.00	Medium grained, sub-angular to rounded, well cemented, siliceous, light gray sandstone with few small irregularly shaped fragments of gray shale. Good vertical fracturing. Good odor of gas.
<u>CORE NO. 21 7857'-7860'. Recovered 2.5'.</u>			
7857.5	7858	.50	Very fine to fine, angular to sub-angular, well cemented, siliceous, light gray sandstone with thin conglomeritic streak containing a few small, irregularly shaped fragments of gray shale. Core bleeding slight amount of gas.
7858	7860	2.00	Very fine to fine, sub-angular to rounded, well cemented, siliceous, light gray sandstone with trace of pyrite. Bottom 1.6' showing good vertical fracturing. Core bleeding slight amount of gas.
<u>CORE NO. 22 7860'-7870'. Recovered 9.5'.</u>			
7860	7869.5	9.5	Very fine to medium grained, sub-angular to rounded, well cemented, siliceous, light gray sandstone with thin conglomeritic streak at 2867.5'. Bottom 1.5' slightly coarser. Bottom 6' contained small, irregularly shaped fragments of light green bentonite and light gray shale which gave outside of core a pitted appearance where they had been washed out. Slightly pyritic throughout. Good vertical fracturing developed throughout. Good odor of gas throughout.
7869.5	7870	.5	No recovery.
<u>CORE NO. 23 7870'-7876'. Recovered 6'.</u>			
7870	7871	1	Hard white tight fractured sandstone with gas odor.
7871	7874	3	Hard white tight sand. No fractures. Slightly laminated. Core pitted. Gas odor. Bleeding Gas. Slight fluorescence in top foot.
7874	7876	2	Hard conglomerate containing considerable green shale. One fracture. Very good gas odor.
<u>CORE NO. 24 7876'-7881'. Recovered 4.17'.</u>			
7876	7878.5	2.5	Hard clean coarse friable sandstone with abundant black particles. No fractures. Good gas odor.
7878.5	7880	1.5	Hard very coarse conglomerate. No fractures. Gas odor.
7880	7880.17	.17	Hard green shale (Top Morrison 7880



FROM	TO	TOTAL FEET	FORMATION
CORE NO. 19 7816'-7847'. Recovered 31'.			
7816	7830	14	Same sand as described in Core No. 15 showing slight vertical fracturing. Slight porosity. Bleeding small amount of gas.
7830	7847	17	Black fissile carbonaceous shale interbedded with thin sand lenses.
7847	7847	0	Black carbonaceous shale.
CORE NO. 20 7847'-7857'. Recovered 10.5'.			
7847	7847.17	.17	Very fine, dark gray, shaly sandstone.
7847.17	7847.26	.09	Black shale.
7847.26	7852.5	8.24	Very fine grained, angular to sub-angular, well cemented, siliceous, light gray sandstone with small pyrite grains scattered throughout. Good vertical fracturing. Good odor of gas.
7852.5	7857.5	5.00	Medium grained, sub-angular to rounded, well cemented, siliceous, light gray sandstone with few small irregularly shaped fragments of gray shale. Good vertical fracturing. Good odor of gas.
CORE NO. 21 7857'-7860'. Recovered 2.5'.			
7857.5	7858	.50	Very fine to fine, angular to sub-angular, well cemented, siliceous, light gray sandstone with thin conglomeritic streak containing a few small, irregularly shaped fragments of gray shale. Core bleeding slight amount of gas.
7858	7860	2.00	Very fine to fine, sub-angular to rounded, well cemented, siliceous, light gray sandstone with trace of pyrite. Bottom 1.6' showing good vertical fracturing. Core bleeding slight amount of gas.
CORE NO. 22 7860'-7870'. Recovered 9.5'.			
7860	7869.5	9.5	Very fine to medium grained, sub-angular to rounded, well cemented, siliceous, light gray sandstone with thin conglomeritic streak at 7867.5'. Bottom 1.5' slightly coarser. Bottom 6' contained small, irregularly shaped fragments of light green bentonite and light gray shale which gave outside of core a pitted appearance where they had been washed out. Slightly pyritic throughout. Good vertical fracturing developed throughout. Good odor of gas throughout.
7869.5	7870	.5	No recovery.
CORE NO. 23 7870'-7876'. Recovered 6'.			
7870	7871	1	Hard white tight fractured sandstone with gas odor.
7871	7874	3	Hard white tight sand. No fractures. Slightly laminated. Core pitted. Gas odor. Bleeding gas. Slight fluorescence in top foot.
7874	7876	2	Hard conglomerate containing considerable green shale. One fracture. Very good gas odor.
CORE NO. 24 7876'-7881'. Recovered 4.17'.			
7876	7878.5	2.5	Hard clean coarse friable sandstone with abundant black particles. No fractures. Good gas odor.
7878.5	7880	1.5	Hard very coarse conglomerate. No fractures. Gas odor.
7880	7880.17	.17	Hard green shale (Top Morrison 7880)

