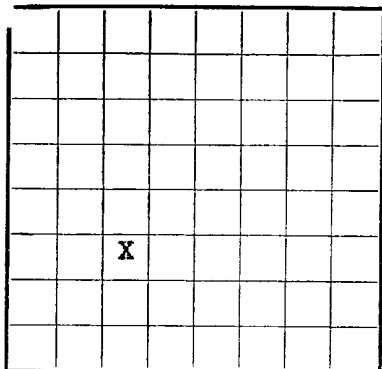


U. S. LAND OFFICE **Santa Fe**  
SERIAL NUMBER **079392**  
LEASE OR PERMIT TO PROSPECT

UNITED STATES **14-08-001-950**

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY



LOCATE WELL CORRECTLY

# LOG OF OIL OR GAS WELL

Company **El Paso Natural Gas Company** Address **Box 997, Farmington, New Mexico**  
Lessor or Tract **San Juan 27-5 Unit** Field **Blanco & Blanco**  
Well No. **48(PM)** Sec. **19** T. **27N** R. **5W** Meridian **N.M.P.M.** County **Rio Arriba**  
Location **1650** ft. **N** of **S** Line and **1650** ft. **E** of **W** Line of **Section 19** Elevation **6373'**  
(Derrick 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 **Original Signed C. D. COX**

Date **April 8, 1959** Title **Petroleum Engineer**

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

Commenced drilling **2-20-**, 19**59** Finished drilling **3-1-**, 19**59**

## OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from **3076** to **3152 (G)** No. 4, from **5255** to **5400 (G)**  
No. 2, from **4721** to **4880 (G)** No. 5, from \_\_\_\_\_ to \_\_\_\_\_  
No. 3, from **4880** to **5255 (G)** 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—	
10 3/4"	32.75	P.E.	S.W.	161'	Howco				Surface
7 5/8"	26.40	8 Rd.	J-55	3262'	Baker				Prod. casg.
5 1/2"	15.5	8 Rd.	J-55	2287'	Baker				Prod. liner
2"	4.7	8 Rd.	J-55	5381'					Prod. tbgs.
1 1/4"	2.4	8 Rd.	Grade "A"	3151'					Siphon

## MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
10 3/4"	171'	108	Circulated		
7 5/8"	3272'	136	Single Stage		
5 1/2"	3221-5468	334	Single Stage		

## PLUGS AND ADAPTERS

Heaving plug—Material \_\_\_\_\_ Length \_\_\_\_\_ Depth set \_\_\_\_\_  
Adapters—Material \_\_\_\_\_ Size **Baker "ECJ" packer set at 3286'**

## SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out
		<b>See Well History</b>				

## TOOLS USED

**Gas Drilled**

Rotary tools were used from **0** feet to **3273** feet, and from **3273** feet to **5471** feet  
Cable tools were used from \_\_\_\_\_ feet to \_\_\_\_\_ feet, and from \_\_\_\_\_ feet to \_\_\_\_\_ feet

## DATES

**March 7**, 19**59** Put to producing \_\_\_\_\_, 19\_\_\_\_

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 **PC-1,714,000** Gallons gasoline per 1,000 cu. ft. of gas \_\_\_\_\_  
**MV-2,766,000**

Rock pressure, lbs. per sq. in. **PC-1088** **A.O.F.---P.C. 1741 MCF/D**  
**MV-1083** **EMPLOYEES M.V. 3211**

\_\_\_\_\_, Driller \_\_\_\_\_, Driller  
\_\_\_\_\_, Driller \_\_\_\_\_, Driller

## FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	2503	2503	Tan to gry cr-grn ss interbedded w/gry sh.
2503	2612	109	Ojo Alamo ss. White cr-grn s.
2612	2813	201	Kirtland form. Gry sh interbedded w/tight gry fine-grn ss.
2813	3076	263	Fruitland form. Gry carbsh, scattered coals, coals and gry, tight, fine-grn ss.
3076	3152	76	Pictured Cliffs form. Gry, fine-grn, tight, varicolored soft ss.
3152	4721	1569	Lewis formation. Gry to white dense sh w/silty to shaly ss breaks.
4721	4880	159	Cliff House ss. Gry, fine-grn, dense sil ss.
4880	5255	375	Menafee form. Gry, fine-grn s, carb sh & coal.
5255	5400	145	Point Lookout form. Gry, very fine sil ss w/frequent sh breaks.
5400	5471	71	Mancos formation. Gry carb sh.

**FORMATION RECORD—Continued**[illegible]

### HISTORY OF OIL OR GAS WELL

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It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reasons for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sidetracked" or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.

- 3-3-59 T.D. 5471'. CORED 5420'. Treated Pointe Lookout perf. int. 5254-5264;  
5270-5288; 5334-5344; 5354-5374; 5392-5402 w/2 DJ/ft. w/60,660 gal-  
long water and 65,000# sand. Flushed w/8500 gallons water. I.R.  
60 B.P.M. Max. pr. 2300#, BDP 3400#, tr. pr. 1200-1350-1400-1350-  
1700-2000#. 6 stages--4 drops 15 balls, 1 drop 12 balls.
- 3-3-59 Bridge Plug at 3390'.  
Treated Pictured Cliffs perf. int. 3114-3124; 3134-3152 w/2 DJ/ft.  
w/34,765 gallons water and 35,000# sand. Flushed w/6500 gallons  
water. I.R. 61.9 B.P.M. Max. pr. 3000#, BDP 1200#, tr. pr. 1300-  
1500-1600-1900-2000#. 4 stages--3 sets of 15 balls.

23. *Chrysomelidae* (100%)

[illegible]

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

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1. *Phragmites australis* (Cav.) Trin. ex Steud.

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The concentration of the *Agrobacterium* suspension was 10<sup>6</sup> cells/ml (○), 10<sup>7</sup> cells/ml (□), 10<sup>8</sup> cells/ml (△), 10<sup>9</sup> cells/ml (◇), and 10<sup>10</sup> cells/ml (×). The error bars represent the standard deviation of three independent experiments.

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