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EXHIBIT "B"  
HUERFANO UNIT  
SAN JUAN COUNTY, NEW MEXICO  
GEOLOGIC REPORT  
GALLUP PRODUCING INTERVAL  
PROPOSED NINETEENTH EXPANSION  
OF THE GALLUP PARTICIPATING AREA

EL PASO NATURAL GAS COMPANY

By: R. F. Lemon  
R. F. Lemon, Director  
Reservoir Engineering

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### INTRODUCTION

The Huerfano Unit, located in the southwestern portion of the San Juan Basin, is comprised of 63,120.76 acres in Townships 25, 26 and 27 North, Ranges 9, 10 and 11 West, San Juan County, New Mexico.

Hydrocarbons are produced in this unit from three horizons of upper Cretaceous age. In descending order these are: (1) Pictured Cliffs sandstone (2) Gallup member of the Mancos, and (3) Dakota Producing Interval.

The Gallup member of the Mancos within the Huerfano Unit of San Juan County, New Mexico is of Upper Cretaceous Age and is described as being a series of interbedded gray, medium to fine grained, calcareous, shaly sandstones and dark gray to black shales. Electric log correlations show a distinct lensing effect within the Gallup member which results in relatively clean sands in one well being equivalent to very shaly sands in an offset well. Many of the wells in the Huerfano Unit have a certain amount of fracturing in the Gallup which helps to increase the productivity, especially in the shaly sand sections.

Included with this report as Exhibit "C," is a structure map contoured on top of the Gallup member of the Mancos formation. This map shows the gentle regional dip to the northeast and the general lack of any structural developments which could be utilized in predicting productive trends. A majority of the sands (including the Gallup in this area) deposited by the Upper Cretaceous seas within the San Juan Basin have a prevalent northwest-southeast trend.

Also included with this report as Exhibit "D," Table No. 1 is a tabulation of the Huerfano Unit Gallup gas production. This tabulation shows by well the absolute open flow potential, date of first delivery into the gathering system, cumulative gas production to January 1, 1974, production by months for 1974 from January through November, 1974 annual production to December 1, 1974 and cumulative gas production to December 1, 1974. Wells within the Gallup Participating Area have produced a cumulative total of 47,218,683 Mcf as of December 1, 1974.

Exhibit "D," Table No. 2 is a tabulation of the Huerfano Unit Gallup oil production. This tabulation shows by well cum oil production to January 1, 1974, production by months for 1974 from January through November 1974, annual production to December 1, 1974 and cum oil production to December 1, 1974. Wells within the Gallup Participating Area have produced a cumulative total of 656,034 barrels of oil as of December 1, 1974.

PROPOSED NINETEENTH EXPANSION  
OF THE GALLUP PARTICIPATING AREA

Effective Date: December 1, 1974

The proposed Nineteenth Expansion of the Gallup Participating Area is based upon the completion of the Huerfano Unit No. 258 well by El Paso Natural Gas Company, the Unit operator. This well is located 990 feet from the south line and 990 feet from the east line in Section 36, T-27-N, R-10-W, San Juan County, New Mexico.

On November 29, 1974 the Huerfano Unit No. 258 well was tested for three hours through a 2.500 inch orifice and four inch meter run on 2.375 inch tubing with the following test results:

Shut-in	167 Days
SIPC	764 psia
SIPT	257 psia
FPT	50 psia
WPC	175 psia
IPF	411 Mcf/D
AOF	428 Mcf/D

Proposed Expanded Acreage

Township 27 North, Range 10 West

Section 36: East half

Huerfano Unit No. 258 well was perforated throughout the Gallup section from 5734 feet to 6090 feet. Upon being put on production, the monthly average production of gas and condensate have been as follows: January 1975, 137 Mcf/D and 0 barrels; February 1975, 92 Mcf/D and 0 barrels; March 1975, 74 Mcf/D and 100 barrels; April 1975, 79 Mcf/D and 156 barrels; May 1975, 74 Mcf/D and 87 barrels.

This proposed acreage is inferred to be capable of producing unitized substances in commercial quantities from the Gallup member of the Mancos formation.

EXHIBIT "D" I  
 TABLE NO. 1 GAL  
 MUERFANO  
 SAN JUAN COUNTY, NEW MEXICO

VOLUMES IN MCF AT 15,025 PSIA AND 60 DEGREES F.

WELL NAME AND NO.	ADP MCF/D	DATE OF FIRST DELIVERY	CURRENT WELL STATUS	1-1-74 CUM PRD	1974 MONTHLY PRODUCTION												12-1-74 CUM PRD		
					JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	1974 PRD			
MCADAMS #1	9010	58/04/30		2011954	2367	3684	3826	3435	2828	3409	3188	3427	3604	3374	3674	35928	2047882		
MCADAMS #2 GL	15827	58/03/27		3653777	7633	10476	10390	9864	7696	9623	8600	10900	11192	11645	8704	3732514	3732514		
MUERFANO UNIT #99 GL	19157	58/10/31		5196803	12728	14276	15636	16031	13028	16796	13878	18063	18067	16051	19727	16299	5166182	5166182	
MCADAMS #3 GL	21912	58/11/07		1087340	487	902	1134	1148	928	1101	839	936	864	1230	1010	10614	1077954	1077954	
MUERFANO UNIT #103 GL	5627	59/03/06		1913102	1482	1266	1334	861	1206	1049	1253	1267	604	973	12456	1925558	1925558		
MUERFANO UNIT #92 GL	1585	59/03/24		1314323	4258	4330	3199	2792	3403	2795	2670	3201	3576	1399	2981	34604	1348927	1348927	
MUERFANO UNIT #105 GL	2216	59/04/07		3988633	23100	14594	14756	8200	7379	11856	15984	17534	16873	15555	10257	156400	4155233	4155233	
MUERFANO UNIT #106 GL	9387	59/04/28		4730406	16793	15391	16510	21795	20498	15214	20046	20304	20134	20689	15648	202992	9933394	9933394	
MUERFANO UNIT #107 GL	1188	59/08/26	DISC	842897	0	0	0	0	0	0	0	0	0	0	0	842897	842897	842897	
MUERFANO UNIT #104 GL	442	59/07/02	DISC	217504	0	0	0	0	0	0	0	0	0	0	0	217504	217504	217504	
MUERFANO UNIT #109 GL	3016	59/11/28		2966008	9207	8335	7493	4819	7120	7798	6353	10962	7554	8867	9243	89821	3057869	3057869	
MUERFANO UNIT #111 GL	2198	59/11/11		685958	2681	2684	2711	1617	2538	1716	1620	1967	2365	1392	1860	23411	709369	709369	
MC ADAMS #5	0	60/02/01	P & A	41575	0	0	0	0	0	0	0	0	0	0	0	41575	41575	41575	
MUERFANO UNIT #110	621	60/02/18		344293	460	513	472	407	571	567	491	529	399	515	549	34979	34979	34979	
MUERFANO UNIT #108 GL	1427	60/03/15		2896393	5093	5087	5282	1825	6444	4776	3813	5687	3289	5712	349	28527	28527	28527	
MUERFANO UNIT #112	292	60/03/31		513531	815	1961	2257	2129	2726	2627	1731	2188	1653	2136	2353	22866	336397	336397	
MUERFANO UNIT #116 GL	272	61/02/10		359899	1271	1193	1011	680	1078	1050	653	997	596	747	8720	10158	370057	370057	
MUERFANO UNIT #101 GL	1000	61/02/14		1243593	5817	4390	4851	7018	6498	4750	6441	6539	6517	6651	5149	64821	1308414	1308414	
MUERFANO UNIT #113 GL	2127	61/02/21		1189504	17079	13887	11410	20330	18826	14286	18486	18834	18722	19113	14214	183129	5374833	5374833	
MUERFANO UNIT #160	517	70/12/03		1153558	27928	26931	25500	18618	24230	23206	22173	22030	21027	13913	19165	244721	1398879	1398879	
MCADAMS #4 GL	23705	71/02/09		3213268	0	0	0	0	0	0	0	0	0	0	0	3213268	3213268	3213268	
MUERFANO UNIT #138	155	72/01/09	DISC	230782	9634	7031	10290	9758	9926	9799	7034	9031	8888	8570	9162	99367	330149	330149	
MUERFANO UNIT #232	294	73/08/19		31211	3133	3178	2809	2048	2675	3091	2741	3256	2554	1978	2554	30137	51408	51408	
MUERFANO UNIT #231	1002	73/08/19		97561	16893	16262	10192	10917	15435	15041	10640	11523	10889	9646	12021	139409	236970	236970	
MUERFANO UNIT #242	245	73/08/12		4740	1658	1802	1434	1682	1649	1490	1398	1750	1655	1415	2011	17064	21804	21804	
MUERFANO UNIT #241	1434	73/08/12		210679	58017	46287	52655	37910	47819	44790	42028	41113	37860	24218	36830	467507	678186	678186	
MUERFANO UNIT #238	306	73/08/13		40711	22474	22691	22691	15636	20197	19594	18413	17970	17184	10748	15984	205815	243326	243326	
MUERFANO UNIT #233	429	73/08/13		26120	5643	3931	4440	4491	4603	4427	3295	4322	4189	3827	4122	47287	73407	73407	
MUERFANO UNIT #247	348	73/08/19		5146	3005	3002	3555	2851	4011	3780	4289	4577	3134	4744	5148	42096	47242	47242	
MUERFANO UNIT #234	457	73/08/19		3940	3217	4583	4615	3378	4228	4200	3948	4071	3642	2158	3383	41363	45303	45303	
MUERFANO UNIT #236	748	73/08/20		19630	5234	3446	4316	4303	4264	4080	2988	3913	3613	3710	3441	43262	62892	62892	
MUERFANO UNIT #240	263	73/10/31		38997	12103	8317	10313	11562	12740	12151	6867	11521	11308	11040	12126	160693	160693	160693	
MUERFANO UNIT #237	623	74/03/10		1118	0	405	1335	1247	1479	2314	2392	2140	2387	948	1788	16445	16445	16445	
MUERFANO UNIT #239	303	74/03/10		0	0	0	12832	24061	31650	29682	27151	26089	25417	17234	22493	217029	217029	217029	
MUERFANO UNIT #257	296	74/11/28		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MUERFANO UNIT #256	161	74/12/20		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MUERFANO UNIT #253	171	74/12/27		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MUERFANO UNIT #252	153	74/12/30		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MUERFANO UNIT #249	212	75/01/20		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MUERFANO UNIT #258	428	75/01/22		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS				44310256	280016	250429	269619	250632	268124	277132	265536	266878	269781	230397	239863	2908427	47218683	47218683	47218683

EXHIBIT "D"  
 TABLE NO. 2  
 HUERFANO UNIT  
 GALLUP OIL PRODUCTION, BRIS.  
 SAN JUAN COUNTY, NEW MEXICO

WELL NAME AND NO.	1974 MONTHLY PRODUCTION												TOTAL PRODU.			
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TC 1-1-74	TC 12-1-74	CUM. PROD.	TC 12-1-74
MCADAMS #1	89	40	83	20	25	74	22	24	28	22	55	24	139	2132	1340	2528
MCADAMS #2 GL	82	123	83	148	191	98	82	139	139	184	128	128	1039	2693	1340	2528
HUERFANO UNIT #99 GL	82	123	105	75	94	98	154	82	150	87	85	85	1065	3370	1340	2528
MCADAMS #3 GL	82	36	75	62	44	24	23	82	57	87	86	86	676	3370	1340	2528
HUERFANO UNIT #103	82	80	75	80	86	84	80	80	80	80	80	80	1081	1728	1340	2528
HUERFANO UNIT #92	100	99	79	80	92	99	98	98	21	88	51	88	1081	1728	1340	2528
HUERFANO UNIT #105	100	99	79	80	92	99	98	98	21	88	51	88	1081	1728	1340	2528
HUERFANO UNIT #106	77	203	75	100	99	98	198	99	144	187	277	99	1313	1728	1340	2528
HUERFANO UNIT #107	DISC.												0	0	0	0
HUERFANO UNIT #108	DISC.												0	0	0	0
HUERFANO UNIT #109	198	0	89	72	0	88	0	98	94	78	75	94	608	2821	1340	2528
HUERFANO UNIT #110	0	0	53	0	0	0	0	42	0	54	0	0	99	2821	1340	2528
MCADAMS #5	3783	0	0	0	0	0	0	0	0	0	0	0	0	3783	1340	2528
HUERFANO UNIT #111	21052	0	0	0	0	0	0	0	0	0	0	0	0	21052	1340	2528
HUERFANO UNIT #108	27003	100	0	0	99	0	0	98	0	0	0	0	0	27003	1340	2528
HUERFANO UNIT #109	63544	120	301	287	308	308	257	282	249	242	232	232	287	63544	1340	2528
HUERFANO UNIT #116	23448	16	80	80	80	80	80	80	80	80	80	80	80	23448	1340	2528
HUERFANO UNIT #117	23448	86	80	80	80	80	80	80	80	80	80	80	80	23448	1340	2528
HUERFANO UNIT #111	18971	101	81	81	81	81	81	81	81	81	81	81	81	18971	1340	2528
HUERFANO UNIT #111	2031	0	0	182	99	99	0	198	100	0	202	100	980	17931	1340	2528
HUERFANO UNIT #151-Y	0	101	201	100	99	98	96	184	99	100	181	99	1340	2868	1340	2528
MCADAMS #4	25219	0	0	0	0	0	0	0	0	0	0	0	0	25219	1340	2528
HUERFANO UNIT #118	8749	0	73	0	0	0	0	55	0	0	0	0	0	8749	1340	2528
HUERFANO UNIT #210	203	101	201	100	99	98	96	184	99	100	181	99	1340	2868	1340	2528
HUERFANO UNIT #212	869	101	201	100	99	98	96	184	99	100	181	99	1340	2868	1340	2528
HUERFANO UNIT #242	753	94	162	83	94	72	109	85	86	82	75	86	780	1584	1340	2528
HUERFANO UNIT #242	922	202	234	201	199	214	197	197	188	200	277	200	231	1233	1340	2528
HUERFANO UNIT #234	260	147	166	101	100	98	101	163	95	101	101	101	1570	1580	1340	2528
HUERFANO UNIT #233	101	99	166	101	100	98	101	163	95	101	101	101	1570	1580	1340	2528
HUERFANO UNIT #237	552	94	100	100	115	111	111	34	84	94	175	94	1674	1626	1340	2528
HUERFANO UNIT #234	518	75	71	94	115	111	111	34	84	94	175	94	1674	1626	1340	2528
HUERFANO UNIT #234	518	75	71	94	115	111	111	34	84	94	175	94	1674	1626	1340	2528
HUERFANO UNIT #240	661	100	99	94	134	94	94	67	84	100	94	94	795	1313	1340	2528
HUERFANO UNIT #237	705	98	88	83	100	94	94	67	84	100	94	94	795	1313	1340	2528
HUERFANO UNIT #239	0	0	100	88	72	0	99	42	0	5	0	0	326	1031	1340	2528
HUERFANO UNIT #239	0	0	100	88	72	0	99	42	0	5	0	0	326	1031	1340	2528
HUERFANO UNIT #257	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUERFANO UNIT #258	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUERFANO UNIT #253	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUERFANO UNIT #255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUERFANO UNIT #252	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUERFANO UNIT #249	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUERFANO UNIT #254	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	630506	1352	2071	2392	2551	2088	2267	2653	2194	2369	2784	2528	656034	2528	656034	656034