VACUUM GLORIETA EAST UNIT

TRACT PARTICIPATION SPREADSHEET

Attached are two copies of a spreadsheet that details the formula used to calculate Unit Participation for each Tract. This formula was unanimously approved by the Vacuum Glorieta Unit Working Interest Owners on May 4, 1993. Unit participation is divided into six phases. Each phase is a proportion of a Primary Factor and a Secondary Factor. The Primary and Secondary Factors represent the value of the remaining primary reserves and potential secondary reserves respectively. The proportion of the Secondary Factor to Primary Factor increases as the forecasted volume of secondary (EOR) oil production increases.

The spreadsheet is divided into five parts and is read left to right. The left column is the Unit tract number. The next section, titled "Unit Parameter", is a table of the seven parameters that were used to describe the Unit's reservoir, production and geologic characteristics. The third section, titled " Tract Percentage of Unit Parameter", is a table of the ratios of the Tract Parameters to the Unit Total Parameters. The fourth section is the tract percentages of the Primary Factor and the Secondary Factor. The formula used to calculate these Factors are as follows:

Primary Factor = 0.495 X Remaining Primary + 0.495 X Current Production + 0.01 X Ultimate Primary

Secondary Factor = 0.2 X Acreage + 0.2 X Cumulative Production + 0.2 X Ultimate Primary + 0.2 X Net Pay + 0.2 X Volumetric Oil in Place

The fifth section is a table of the Tract Participation in each phase. The proportion of the Primary Factor and Secondary Factor used to derive the Tract Participation is shown under the heading of each phase.

BEFORE EXAMINER CATANACH

OIL CONSERVATION DIVISION

EXHIBIT NO. 9

CASE NO. 10485 AND 10486

VACUUM GLORIETA EAST UNIT
LEA COUNTY, NEW MEXICO

	UNIT PARAMETERS							TRACT PERCENTAGE OF UNIT PARAMETER							PARTICIPATION FORMULA		TRACT WORKING INTEREST					
								(A)	(B)	(C)	(D)	(E)	(F)	(G)	(Y)	(Z)						
TRACT	ACEAGE	CUMULATIVE PRODUCTION 1/01/92 (STBO)	REMAINING PRIMARY 1/01/92 (STBO)	ULTIMATE PRIMARY 1/01/92 (STBO)	1991 PRODUCTION (BOPD)	NET PAY (FEET)	VOLUMETRIC OIL IN PLACE (STBO)	TRACT ACEAGE / UNIT ACEAGE	TRACT CUMULATIVE PRODUCTION 1/01/92 / UNIT CUMULATIVE PRODUCTION 1/01/92	TRACT REMAINING PRIMARY 1/01/92 / UNIT REMAINING PRIMARY 1/01/92	TRACT ULTIMATE PRIMARY / UNIT ULTIMATE PRIMARY	TRACT 1991 PRODUCTION / UNIT 1991 PRODUCTION	TRACT NET PAY / UNIT NET PAY	TRACT VOLUMETRIC OIL IN PLACE / UNIT VOLUMETRIC OIL IN PLACE	PRIMARY FACTOR FORMULA (0.495 x C) + (0.495 x E) + (0.01 x D) +	SECONDARY FACTOR FORMULA (0.2 x A)+(0.2 x B)+(0.2 x D) +(0.2 x F)+(0.2 x G)	PHASE I (1.0 x Y)	PHASE II (0.75 x Y) + (0.25 x Z)	PHASE III (0.5 x Y) + (0.5 x Z)	PHASE IV (0.25 x Y) + (0.75 x Z)	PHASE V (0.15 x Y) + (0.85 x Z)	PHASE VI (1.0 x Y)
25	160.00	1,301,312	85,414	1,386,726	22.28	277.35000	4,611,948	3.77370%	3.00063%	1.56417%	2.83999%	1.12628%	4.02682%	4.29835%	1.36017%	3.58790%	1.36017%	1.91710%	2.47403%	3.03097%	3.25374%	3.58790%
26	160.00	2,297,627	217,730	2,515,357	69.45	306.81700	4,400,835	3.77370%	5.29799%	3.98724%	5.15140%	3.51077%	4.45465%	4.10160%	3.76303%	4.55587%	3.76303%	3.98124%	4.15945%	4.35766%	4.43894%	4.55587%
27	160.00	1,479,552	81,338	1,560,890	44.88	421.05100	6,310,165	3.77370%	3.41163%	1.48952%	3.19667%	2.26873%	6.11320%	5.88110%	1.89230%	4.47526%	1.89230%	2.53804%	3.16378%	3.82952%	4.08782%	4.47526%
28	40.00	17,102	0	17,102	0.00	14.28200	163,124	0.94343%	0.03943%	0.00000%	0.03502%	0.00000%	0.20736%	0.15203%	0.00035%	0.27546%	0.00035%	0.06913%	0.13790%	0.20668%	0.23419%	0.27546%
29	40.00	451,556	7,450	459,006	3.13	89.07900	1,472,710	0.94343%	1.04122%	0.13643%	0.94004%	0.15822%	1.29333%	1.37257%	0.15525%	1.11812%	0.15525%	0.39597%	0.63669%	0.87740%	0.97369%	1.11812%
30	40.00	226,650	0	226,650	2.60	74.48800	1,347,614	0.94343%	0.52262%	0.00000%	0.46417%	0.13143%	1.08148%	1.25598%	0.06970%	0.85354%	0.06970%	0.26566%	0.46162%	0.65758%	0.73596%	0.85354%
31	79.90	92,550	0	92,550	0.00	31.37000	625,477	1.88449%	0.21341%	0.00000%	0.18954%	0.00000%	0.45546%	0.58295%	0.00190%	0.66517%	0.00190%	0.16771%	0.33353%	0.49935%	0.56568%	0.66517%
32	40.00	316,718	0	316,718	0.87	53.40400	457,024	0.94343%	0.73492%	0.00000%	0.65273%	0.04398%	0.77537%	0.42595%	0.02830%	0.70648%	0.02830%	0.19784%	0.36739%	0.53693%	0.60475%	0.70648%
33	40.00	169,865	0	169,865	0.93	40.63500	520,251	0.94343%	0.39168%	0.00000%	0.34788%	0.04701%	0.58998%	0.48488%	0.02675%	0.55157%	0.02675%	0.15795%	0.28916%	0.42036%	0.47285%	0.55157%
34	80.00	761,494	15,181	776,675	6.18	108.38733	1,708,872	1.88685%	1.75589%	0.27601%	1.59061%	0.41351%	1.57366%	1.59268%	0.35821%	1.67994%	0.35821%	0.68864%	1.01907%	1.34951%	1.48168%	1.67994%
35	120.00	742,365	32,261	774,626	11.29	171.86452	2,666,825	2.83028%	1.71178%	0.59079%	1.58642%	0.57072%	2.49528%	2.48549%	0.59081%	2.22185%	0.59081%	0.99857%	1.40633%	1.81409%	1.97719%	2.22185%
36	40.00	633,739	2,383	636,122	2.54	62.63800	782,647	0.94343%	1.46131%	0.04364%	1.30277%	0.12640%	0.90943%	0.72943%	0.09819%	1.06927%	0.09819%	0.34096%	0.58373%	0.82650%	0.92361%	1.06927%
37	160.00	480,718	0	480,718	6.17	238.78000	3,360,502	3.77370%	1.10846%	0.00000%	0.98450%	0.31190%	3.46682%	3.13200%	0.16424%	2.49310%	0.16424%	0.74645%	1.32867%	1.91088%	2.14377%	2.49310%
38	80.00	1,577,907	264,630	1,842,537	84.94	166.98200	3,849,654	1.88685%	3.63842%	4.84611%	3.77348%	4.29380%	2.42439%	3.58789%	4.56199%	3.06221%	4.56199%	4.18704%	3.81210%	3.43715%	3.28717%	3.06221%
39	40.00	459,255	0	459,255	2.01	60.12600	668,749	0.94343%	1.05897%	0.00000%	0.94055%	0.10161%	0.87299%	0.62328%	0.05970%	0.88784%	0.05970%	0.28674%	0.47377%	0.68081%	0.76362%	0.88784%
40	40.00	443,468	967	444,435	2.93	73.42000	931,760	0.94343%	1.02257%	0.01771%	0.91019%	0.14811%	1.06598%	0.86840%	0.09118%	0.96211%	0.09118%	0.30892%	0.52665%	0.74438%	0.83147%	0.96211%
41	80.00	363,519	0	363,519	3.42	103.91200	1,032,475	1.88685%	0.83822%	0.00000%	0.74448%	0.17288%	1.50869%	0.96227%	0.09302%	1.18810%	0.09302%	0.36679%	0.64056%	0.91433%	1.02364%	1.18810%
42	40.00	457,562	5,989	463,551	17.91	72.98800	1,418,846	0.94343%	1.05507%	0.10968%	0.94934%	0.90537%	1.05971%	1.32237%	0.51194%	1.06598%	0.51194%	0.65045%	0.78896%	0.92747%	0.98288%	1.06598%
43	40.00	323,113	0	323,113	1.42	22.10400	172,632	0.94343%	0.74505%	0.00000%	0.66173%	0.07178%	0.32093%	0.16089%	0.04215%	0.56640%	0.04215%	0.17321%	0.30428%	0.43534%	0.48777%	0.56640%
44	40.00	120,199	0	120,199	0.00	32.48691	376,961	0.94343%	0.27716%	0.00000%	0.24617%	0.00000%	0.47167%	0.35133%	0.00246%	0.45795%	0.00246%	0.11633%	0.23021%	0.34408%	0.38963%	0.45795%
45	40.00	336,926	8,070	344,996	4.76	56.48200	877,511	0.94343%	0.77690%	0.14778%	0.70654%	0.24062%	0.82006%	0.81784%	0.19933%	0.81295%	0.19933%	0.35273%	0.50614%	0.65955%	0.72091%	0.81295%
46	40.00	238,633	0	238,633	0.00	71.91268	900,686	0.94343%	0.55025%	0.00000%	0.48872%	0.00000%	1.04409%	0.83944%	0.00489%	0.77319%	0.00489%	0.19696%	0.38904%	0.58111%	0.65794%	0.77319%
47	40.00	221,785	0	221,785	0.00	64.28073	763,844	0.94343%	0.51140%	0.00000%	0.45421%	0.00000%	0.93329%	0.71191%	0.00454%	0.71085%	0.00454%	0.18112%	0.35769%	0.53427%	0.60490%	0.71085%
TOTAL	4239.87	43,367,933	5,460,670	48,828,603	1976.20	6867.57418	107,295,659	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%

VACUUM GLORIETA EAST UNIT

LEA COUNTY, NEW MEXICO

	UNIT PARAMETERS							TRACT PERCENTAGE OF UNIT PARAMETER							PARTICIPATION FORMULA		TRACT WORKING INTEREST					
								(A)	(B)	(C)	(D)	(E)	(F)	(G)	(Y)	(Z)						
TRACT	ACERAGE	CUMULATIVE PRODUCTION 1/01/92 (STBO)	REMAINING PRIMARY 1/01/92 (STBO)	ULTIMATE PRIMARY 1/01/92 (STBO)	1991 PRODUCTION (BOPD)	NET PAY (FEET)	VOLUMETRIC OIL IN PLACE (STBO)	TRACT ACERAGE / UNIT ACERAGE	TRACT CUMULATIVE PRODUCTION 1/01/92 / UNIT CUMULATIVE PRODUCTION 1/01/92	TRACT REMAINING PRIMARY 1/01/92 / UNIT REMAINING PRIMARY 1/01/92	TRACT ULTIMATE PRIMARY / UNIT ULTIMATE PRIMARY	TRACT 1991 PRODUCTION / UNIT 1991 PRODUCTION	TRACT NET PAY / UNIT NET PAY	TRACT VOLUMETRIC OIL IN PLACE / UNIT VOLUMETRIC OIL IN PLACE	PRIMARY FACTOR FORMULA (0.495 x C) + (0.495 x E) + (0.01 x D) +	SECONDARY FACTOR FORMULA (0.2 x A)+(0.2 x B)+(0.2 x D) +(0.2 x F)+(0.2 x G)	PHASE I (1.0 x Y)	PHASE II (0.75 x Y) + (0.25 x Z)	PHASE III (0.5 x Y) + (0.5 x Z)	PHASE IV (0.25 x Y) + (0.75 x Z)	PHASE V (0.15 x Y) + (0.85 x Z)	PHASE VI (1.0 x Y)
01	320.00	6,124,120	1,127,294	7,251,414	532.84	750.11883	14,315,836	7.54740%	14.12131%	20.64388%	14.85075%	26.93560%	10.89090%	13.34242%	23.70035%	12.15056%	23.70035%	20.81290%	17.92545%	15.03800%	13.88302%	12.15056%
02	320.00	3,319,362	673,780	3,993,142	199.81	456.94625	6,520,567	7.54740%	7.65395%	12.33878%	8.17787%	10.10060%	6.63436%	6.07720%	11.18927%	7.21816%	11.18927%	10.19649%	9.20371%	8.21093%	7.81382%	7.21816%
03	40.00	167,225	0	167,225	0.00	66.88591	1,061,878	0.94343%	0.38560%	0.00000%	0.34247%	0.00000%	0.97111%	0.98967%	0.00342%	0.72846%	0.00342%	0.18418%	0.36494%	0.54570%	0.61600%	0.72846%
04	80.00	1,839,602	450,000	2,289,602	178.85	211.55829	4,531,640	1.88685%	4.24185%	8.24075%	4.88906%	9.04105%	3.07159%	4.22351%	8.60138%	3.62257%	8.60138%	7.35668%	6.11198%	4.86727%	4.36939%	3.62257%
05	160.00	3,317,331	850,000	4,167,331	202.54	353.51100	5,818,736	3.77370%	7.64927%	15.56586%	8.53461%	10.23860%	5.13259%	5.42309%	12.85855%	6.10265%	12.85855%	11.16958%	9.48060%	7.79163%	7.11604%	6.10265%
06	80.00	328,916	18,621	347,537	6.05	77.52500	474,362	1.88685%	0.75843%	0.34100%	0.71175%	0.30583%	1.12558%	0.44211%	0.32730%	0.98494%	0.32730%	0.49171%	0.65612%	0.82053%	0.88630%	0.98494%
07	80.00	329,922	0	329,922	0.00	125.47400	1,991,585	1.88685%	0.76075%	0.00000%	0.67567%	0.00000%	1.82174%	1.85615%	0.00676%	1.40023%	0.00676%	0.35513%	0.70349%	1.05186%	1.19121%	1.40023%
08	40.00	390,985	62,651	453,636	14.99	80.35600	1,358,261	0.94343%	0.90155%	1.14731%	0.92904%	0.75776%	1.16668%	1.26590%	0.95230%	1.04132%	0.95230%	0.97456%	0.99681%	1.01907%	1.02797%	1.04132%
09	80.00	1,382,866	78,058	1,440,924	28.75	114.21000	1,452,530	1.88685%	3.14257%	1.42948%	2.95098%	1.45334%	1.65820%	1.35376%	1.45650%	2.19847%	1.45650%	1.64199%	1.82748%	2.01298%	2.08718%	2.19847%
10	120.00	1,632,927	183,000	1,815,927	51.94	206.62800	2,582,598	2.83028%	3.76529%	3.35124%	3.71898%	2.62562%	3.00001%	2.40699%	2.99573%	3.14431%	2.99573%	3.03288%	3.07002%	3.10717%	3.12202%	3.14431%
11	160.00	2,114,110	75,298	2,189,408	30.70	259.82964	3,266,098	3.77370%	4.87482%	1.37892%	4.48386%	1.55192%	4.20801%	3.04402%	1.49560%	4.07688%	1.49560%	2.14092%	2.78624%	3.43156%	3.68969%	4.07688%
12	80.00	1,036,771	117,867	1,154,638	43.22	202.91000	3,951,165	1.88685%	2.39064%	2.15847%	2.36468%	2.18481%	2.94603%	3.68250%	2.17357%	2.65414%	2.17357%	2.29371%	2.41386%	2.53400%	2.58205%	2.65414%
13	120.00	643,647	2,491	646,138	3.06	95.95100	1,389,438	2.83028%	1.48415%	0.04562%	1.32328%	0.15469%	1.39310%	1.29496%	0.11238%	1.66515%	0.11238%	0.50058%	0.88877%	1.27696%	1.43224%	1.66515%
14	40.00	178,565	0	178,565	0.00	52.24700	513,542	0.94343%	0.41174%	0.00000%	0.36570%	0.00000%	0.75857%	0.47862%	0.00366%	0.59161%	0.00366%	0.15065%	0.29763%	0.44462%	0.50342%	0.59161%
15	80.00	1,054,000	46,341	1,100,341	18.20	108.81400	1,564,018	1.88685%	2.43037%	0.84863%	2.25348%	0.92003%	1.57988%	1.45767%	0.89802%	1.92164%	0.89802%	1.15393%	1.40983%	1.66574%	1.76810%	1.92164%
16	120.00	416,630	0	416,630	0.00	76.37000	1,022,245	2.83028%	0.96069%	0.00000%	0.85325%	0.00000%	1.10881%	0.95274%	0.00853%	1.34115%	0.00853%	0.34189%	0.67484%	1.00800%	1.14126%	1.34115%
17	120.00	316,300	0	316,300	4.20	180.48244	3,136,397	2.83028%	0.72934%	0.00000%	0.64778%	0.21231%	2.62041%	2.92314%	0.11157%	1.95019%	0.11157%	0.57123%	1.03088%	1.49053%	1.67439%	1.95019%
18	40.00	42,602	0	42,602	0.00	21.02827	98,939	0.94343%	0.09823%	0.00000%	0.08725%	0.00000%	0.30531%	0.09221%	0.00087%	0.30529%	0.00087%	0.07698%	0.15308%	0.22918%	0.25962%	0.30529%
19	160.00	785,583	83,374	868,957	22.31	204.21800	3,039,103	3.77370%	1.81144%	1.52681%	1.77961%	1.12779%	2.96502%	2.83246%	1.33182%	2.63244%	1.33182%	1.65698%	1.98213%	2.30729%	2.43735%	2.63244%
20	39.97	416,534	49,265	465,799	10.74	43.36149	645,593	0.94272%	0.96047%	0.90218%	0.95395%	0.54292%	0.62956%	0.60170%	0.72486%	0.81768%	0.72486%	0.74807%	0.77127%	0.79447%	0.80376%	0.81768%
21	40.00	99,321	0	99,321	0.00	46.87600	339,551	0.94343%	0.22902%	0.00000%	0.20341%	0.00000%	0.66059%	0.31646%	0.00203%	0.47458%	0.00203%	0.12017%	0.23831%	0.35644%	0.40370%	0.47458%
22	80.00	1,566,043	227,657	1,793,700	100.49	161.63200	3,435,466	1.88685%	3.61106%	4.16903%	3.67346%	5.07987%	2.34672%	3.20187%	4.61494%	2.94399%	4.61494%	4.19720%	3.77947%	3.36173%	3.19463%	2.94399%
23	80.00	167,149	0	167,149	0.14	158.64182	2,204,712	1.88685%	0.38542%	0.00000%	0.34232%	0.00706%	2.27427%	2.05480%	0.00693%	1.38873%	0.00693%	0.35238%	0.69783%	1.04328%	1.18146%	1.38873%
24	120.00	2,201,807	693,560	2,895,367	239.66	189.15707	3,160,311	2.83028%	5.07704%	12.70101%	5.92965%	12.11505%	2.74635%	2.94542%	12.34325%	3.90575%	12.34325%	10.23367%	8.12450%	6.01512%	5.17137%	3.90575%