

99-2119 PLAYA VISTA
SUMMARY OF PLAYA VISTA METHANE STABLE CARBON ISOTOPE ANALYSES
TABLE 5

	Methane	Ethane	Propane	I-Butane	N-Butane	I-C5	N-C5	C6+	Delta C-13 of CO2	Delta C-13 of C1	Delta D of C1	Delta C-13 of C2	He	H2	Ar	O2	CO2	N2	
AREA B WELLS																			
MMW476-GW-2	-	-	-	-	-	-	-	-	-25.47	-59.59	-185.80	-20.73	-	-	-	-	-	-	
MMW509-FG-1	0.65	ND	ND	ND	ND	ND	ND	ND	-33.64	-34.55	ND	ND	ND	0.16	0.94	0.04	0.69	97.52	
MMW514-FG-3	73.59	0.48	0.01	ND	ND	ND	ND	0.00	-30.10	-56.55	-163.60	-19.30	ND	0.83	0.37	0.08	1.10	23.55	
MMW520-FG-4K	92.28	0.47	0.01	ND	ND	ND	ND	ND	-32.00	-58.53	-188.00	-19.26	ND	0.01	0.14	0.06	0.47	6.57	
MMW542-FG-4K	96.80	0.52	0.01	ND	ND	ND	ND	ND	-28.71	-56.69	-195.80	-20.21	ND	0.09	0.05	0.09	0.60	1.84	
TRACT-01 WELLS																			
MMW153-FG-3	96.53	0.45	0.01	ND	ND	ND	ND	ND	-24.13	-57.03	-199.70	-20.67	0.08	ND	0.05	0.08	0.81	1.99	
MMW175-FG-4	96.66	0.43	0.01	0.06	0.07	ND	ND	0.00	-21.04	-57.51	-198.10	-20.70	0.09	ND	0.04	0.17	0.68	1.79	
MMW207-FG-4	96.39	0.32	0.01	ND	ND	ND	ND	ND	-26.45	-60.30	-204.90	-19.09	ND	ND	0.08	0.10	0.49	2.62	
MMW211-FG-4	61.29	0.10	0.00	ND	ND	ND	ND	ND	-27.03	-69.16	-190.40	-19.58	0.00	ND	0.59	0.10	0.65	37.27	
MMW244-FG-4	88.69	0.33	0.00	ND	ND	ND	ND	ND	-35.61	-60.15	-198.90	-20.85	0.09	0.01	0.24	0.16	0.60	9.88	
MMW735-FG-2	30.77	0.07	ND	ND	ND	ND	ND	ND	-32.40	-79.33	-189.60	ND	0.10	0.18	0.80	0.11	0.97	67.00	
MMW743-FG-1	31.41	0.15	0.01	ND	ND	ND	ND	ND	-36.67	-57.54	-76.60	ND	0.10	0.01	0.76	0.13	1.10	66.34	
MMW676-FG-4K	70.49	0.11	ND	ND	ND	ND	ND	ND	-25.53	-72.44	-191.30	-20.56	ND	ND	0.49	0.87	1.40	26.64	
MMW001-FG-2	57.19	0.10	0.00	ND	ND	ND	ND	0.05	-29.40	-68.85	-181.20	ND	ND	ND	ND	ND	1.21	41.45	
MMW002-FG-3	65.95	0.29	0.00	ND	ND	ND	ND	0.01	-32.47	-64.15	-187.00	ND	0.00	ND	0.49	0.10	1.03	32.13	
MMW211-FG-4K	63.02	0.13	0.00	ND	ND	ND	ND	0.00	-24.90	-69.11	-200.80	-20.70	ND	ND	0.57	0.10	0.71	35.47	
MMW003-FG-4	93.91	0.37	0.01	ND	0.00	ND	ND	0.01	-27.23	-58.01	-208.60	ND	ND	ND	0.12	0.09	1.17	4.32	
MMW004-FG-4	97.50	0.48	0.01	ND	ND	ND	ND	0.00	-22.71	-56.06	-199.60	ND	ND	ND	0.03	0.11	0.73	1.13	
MMW738-FG-4	67.06	0.11	ND	ND	ND	ND	ND	ND	-26.81	-76.90	-192.60	-20.49	0.00	ND	0.52	0.17	1.05	31.09	
TRACT-02 WELLS																			
MMW928-FG-4	93.96	0.58	0.01	0.00	ND	ND	ND	ND	-38.18	-54.33	-170.60	-19.10	ND	0.00	0.05	0.13	2.82	2.44	
MMW912-FG-4	96.01	0.45	0.01	ND	ND	ND	ND	ND	-31.86	-57.28	-199.50	-20.61	ND	0.09	0.04	0.11	1.62	1.67	
MMW921-FG-4	90.65	0.52	0.01	0.00	ND	ND	ND	ND	-33.12	-57.50	-187.20	-20.02	ND	0.00	0.06	0.10	1.77	6.88	
MMW944-FG-4K	94.86	0.44	0.01	ND	ND	ND	ND	ND	-40.88	-55.67	-180.80	-20.10	ND	0.00	0.06	0.10	2.36	2.17	
TRACT-03 WELLS																			
MMW103-FG-4K	79.93	0.18	0.00	ND	ND	ND	ND	ND	-24.18	-65.42	-197.90	-20.28	ND	ND	0.37	0.11	1.23	18.18	
MMW112-FG-4K	93.95	0.48	0.01	ND	ND	ND	ND	ND	-25.40	-56.19	-193.60	-20.20	ND	ND	0.12	0.08	0.97	4.40	
MMW039-FG-2	9.58	0.01	ND	ND	ND	ND	ND	ND	-23.69	-68.02	-100.30	ND	0.00	ND	0.80	ND	3.38	86.23	
MMW046-FG-4K	83.13	0.16	0.00	ND	ND	ND	ND	0.01	-23.71	-64.18	-198.70	-18.64	ND	ND	0.31	0.10	1.73	14.56	
MMW077-FG-4K	89.02	0.34	0.01	ND	ND	ND	ND	0.00	-21.99	-59.95	-198.00	-20.49	ND	0.00	0.22	0.08	1.13	9.20	
MMW082-FG-4K	86.41	0.30	0.00	ND	ND	ND	ND	ND	-25.17	-60.86	-194.90	-20.52	ND	0.00	0.27	0.01	1.25	11.75	
MW1-FG-4	80.93	0.20	0.00	ND	ND	ND	ND	ND	-24.04	-64.05	-198.70	-20.01	ND	ND	0.32	0.12	1.47	16.96	
MW2-FG-7	84.92	0.16	0.00	ND	ND	ND	ND	ND	-23.68	-62.63	-200.90	-19.75	ND	ND	0.28	0.12	1.63	12.89	
MW3-FG-6	74.87	0.10	ND	ND	ND	ND	ND	ND	-23.42	-70.07	-207.50	-19.06	ND	ND	0.40	0.14	1.82	22.67	
MW4A-FG-6	82.32	0.22	0.00	ND	ND	ND	ND	0.00	-24.37	-63.38	-188.70	-20.31	ND	0.02	0.23	0.02	1.32	15.87	
MW5A-FG-4	88.30	0.32	0.01	ND	ND	ND	ND	ND	-23.21	-59.66	-191.20	-20.35	ND	0.09	0.14	0.11	1.21	9.82	
TRACT-05 WELLS																			
MMW226-FG-3	97.34	0.36	0.01	ND	ND	ND	ND	ND	-22.56	-59.28	-202.40	-20.28	0.09	ND	0.03	0.19	0.71	1.28	
MMW276-FG-4	40.89	0.18	ND	ND	ND	ND	ND	ND	-28.76	-56.51	-148.50	-20.19	0.00	ND	0.74	0.13	0.55	57.51	
MMW272-FG-1	0.33	ND	ND	ND	ND	ND	ND	ND	-27.98	-23.48	ND	ND	0.00	ND	0.97	0.09	0.78	97.83	
TRACT-06 WELLS																			
MMW331-FG-4	44.17	0.08	0.00	ND	ND	ND	ND	ND	-25.68	-66.61	-174.30	-19.55	0.00	0.09	0.73	0.08	0.57	54.27	
MMW803-FG-1	49.22	0.29	0.02	0.00	ND	ND	ND	ND	-33.98	-57.24	-125.40	-21.86	0.01	0.11	0.55	0.12	1.97	47.71	
MMW319-FG-1	0.04	ND	ND	ND	ND	ND	ND	ND	-28.40	ND	ND	ND	ND	0.002	0.920	1.130	0.490	97.42	
MMW362-FG-4	0.02	ND	ND	ND	ND	ND	ND	ND	-28.26	ND	ND	ND	ND	ND	0.810	0.110	0.700	98.37	
MMW813-FG-4	87.71	0.27	0.01	ND	ND	ND	ND	ND	-23.50	-63.40	-198.70	-23.63	ND	0.003	0.260	0.091	1.540	10.12	
CENTINELA CREEK BUBBLE SEEPS																			
A	62.36	0.16	0.00	ND	ND	ND	ND	ND	ND	-51.27	-185.60	-18.81	ND	ND	0.160	3.050	0.740	33.53	
B	63.13	0.17	0.00	ND	ND	ND	ND	ND	ND	-51.30	-187.10	-19.07	ND	ND	0.180	3.370	0.760	32.39	
C	60.43	0.16	0.00	ND	ND	ND	ND	ND	ND	-51.63	-186.10	-18.98	ND	ND	0.220	4.200	0.730	34.26	
GLOBAL GEOCHEMISTRY SERVICES 1993 ANALYSES CENTINELA CREEK																			
2095-1	25.10	0.04	ND	ND	ND	ND	ND	ND	-33.90	-51.08	-180.00	-19.43	ND	0.010	* 20.0		0.450	55.40	
2150-1	37.10	0.08	ND	ND	ND	ND	ND	ND	-32.95	-50.82	-175.00	-19.93	ND	0.059	* 18.3		0.480	42.90	
2181-1	93.90	0.19	ND	ND	ND	ND	ND	ND	-41.49	-51.00	-176.00	-21.89	ND	ND	* 1.78		1.340	4.67	
2181-2	6.26	ND	ND	ND	ND	ND	ND	ND	-11.24	-50.60	-189.00	ND	ND	ND	* 39.4		0.320	54.30	

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SURFACE SEEPS																			
SEEP 1	94.93	0.38	0.01	0.00	ND	ND	ND	ND	-29.63	-56.91	-196.90	-21.40	ND	ND	0.049	0.048	1.900	2.68	
FW-9E	97.68	0.34	0.00	ND	ND	ND	ND	ND	ND	-59.73	-200.30	-20.08	ND	ND	0.016	0.018	0.720	1.22	
FW-9R	97.66	0.34	0.00	ND	ND	ND	ND	ND	ND	-59.73	-202.10	-20.01	ND	ND	0.017	0.041	0.670	1.27	
TRENCH 1	62.90	0.17	0.00	ND	ND	ND	ND	ND	ND	-59.30	-197.90	-17.94	NA	NA	NA		0.370	NA	
TRENCH 2	76.16	0.12	0.00	ND	ND	ND	ND	ND	ND	-59.28	-198.70	-13.62	NA	NA	NA		0.900	NA	
PLAYA DEL REY GAS STORAGE FIELD																			
Del Rey 13-001	57.53	6.35	4.28	0.65	1.57	0.49	0.44	0.49	ND	-41.97	-190.90	-29.40	0.002	0.071	ND	ND	ND	28.13	
Del Rey 17-001	89.21	4.17	1.67	0.16	0.31	0.06	0.05	0.23	-2.31	-41.25	-184.00	-29.71	0.012	ND	ND	ND	3.700	0.43	
Harper 1-001	81.86	4.83	2.54	0.35	0.76	0.24	0.21	0.45	-3.47	-44.88	-197.10	-30.80	0.009	ND	0.011	ND	7.570	1.17	
SCP-1-001	95.62	1.87	0.34	0.05	0.07	0.02	0.02	0.10	11.26	-42.18	-202.40	-28.57	0.012	ND	0.007	ND	1.250	0.65	
SOCAL 5-001	96.03	1.61	0.31	0.04	0.06	0.02	0.01	0.04	12.70	-42.69	-202.30	-29.20	0.011	ND	0.003	ND	1.310	0.56	
Vidor 01-001	78.14	4.04	2.39	0.38	0.90	0.31	0.27	0.40	-11.32	-41.90	-186.30	-29.99	0.008	0.008	ND	ND	12.750	0.40	
Vidor 13-001	95.39	2.10	0.43	0.06	0.08	0.02	0.02	0.06	11.17	-42.31	-202.20	-28.43	0.012	ND	0.005	ND	1.150	0.69	
Vidor 14-001	91.62	4.74	1.12	0.10	0.17	0.05	0.06	0.25	-2.99	-42.37	-174.20	-32.66	0.034	0.009	0.005	ND	0.580	1.26	
Vidor 2-001	75.40	4.50	2.63	0.35	0.82	0.33	0.31	0.46	-10.69	-40.51	-183.70	-29.42	0.001	0.002	ND	ND	15.030	0.17	
EL SEGUNDO FIELD																			
ES-580	99.64	0.18	0.01	ND	ND	ND	ND	0.00	ND	-62.91	-184.20	-27.50	ND	ND	0.002	0.004	0.060	0.11	
ES-583	99.00	0.36	0.01	ND	0.00	ND	ND	0.00	ND	-62.18	-182.90	-26.40	ND	0.031	0.005	0.051	0.130	0.41	
SYNDICATE WELL																			
Syndicate 11- 725'	59.70	0.18	0.00	ND	ND	ND	ND	0.00	ND	-61.09	-206.30	-21.20	ND	ND	0.200	3.610	0.010	36.30	
Syndicate 14 - 750'	43.47	0.13	0.00	ND	ND	ND	ND	0.00	ND	-60.90	-204.70	-21.00	ND	ND	0.280	4.580	ND	51.54	
Syndicate 17 - 760'	61.48	0.18	0.00	ND	ND	ND	ND	0.01	ND	-60.60	-204.50	-20.60	ND	ND	0.170	3.500	ND	34.66	
Syndicate 6 - +/- 668'	66.65	0.19	0.00	ND	ND	ND	ND	ND	ND	-60.92	-204.80	-20.90	ND	ND	0.100	2.110	ND	30.95	
SOIL GAS SAMPLES																			
VCE-10	1.01	0.00	ND	ND	ND	ND	ND	ND	ND	-48.69	-140.70	ND	ND	ND	0.870	17.540	0.770	79.81	
VCE-12	1.31	0.00	ND	ND	ND	ND	ND	ND	ND	-58.90	-179.20	ND	0.001	0.001	0.920	20.280	0.360	77.12	
9943A	74.41	0.26	0.00	ND	ND	ND	ND	ND	-48.54	-58.85	-188.10	-20.20	ND	0.002	0.020	0.140	8.400	16.76	
9947	58.12	0.19	0.00	ND	ND	ND	ND	ND	-45.38	-60.08	-203.50	-20.00	ND	0.002	0.250	5.120	4.980	31.34	
9943B	78.56	0.27	0.00	ND	ND	ND	ND	ND	-48.56	-59.21	-192.40	-20.00	ND	ND	0.022	0.160	7.300	13.68	
10000	12.90	0.04	ND	ND	ND	ND	ND	ND	-44.32	-59.91	-202.10	ND	ND	0.002	0.620	12.670	1.310	72.46	
5018	10.16	0.04	ND	ND	ND	ND	ND	ND	-43.70	-45.09	-171.60	-14.37	ND	0.003	0.770	13.690	4.830	70.51	
5011	25.33	0.11	ND	ND	ND	ND	ND	ND	-44.16	-51.63	-184.30	-16.83	ND	0.003	0.630	6.600	4.200	63.13	
S77	70.66	0.24	0.00	ND	ND	ND	ND	0.00	-44.26	-58.74	-184.90	-20.57	ND	0.002	0.030	0.410	5.560	23.09	
S78	56.32	0.29	0.00	ND	ND	ND	ND	0.00	-43.32	-52.46	-105.00	-19.92	ND	0.006	0.076	0.680	16.650	25.97	

* Argon + Oxygen
All Analyses in Mol Percent
Carbon Isotopes in part per mil in relation to PDB