TABLE 1
SUMMARY OF GROUNDWATER LEVEL MEASUREMENTS

2005 SEMI-ANNUAL GROUNDWATER MONITORING REPORT
ISOLA ASSOCIATES, LLP
FORMER CENCO REFINERY
SANTA FE SPRINGS, CALIFORNIA

Well ID	Total Depth (feet)	Depth to Water (feet)	Depth to Hydrocarbons (feet)	Hydrocarbon Thickness (feet)	Groundwater Elevation (feet-msl)	Top of Casing Elevation (feet-msl)	Corrected Depth to Groundwater (feet)
EW-1	NM	100.12	98.40	1.72	13.66	112.40	98.74
MW-101	92.70	Dry	NA	0	Dry	135.23	NA
MW-103	94.55	Dry	NA	0	Dry	136.95	NA
MW-104A	97.60	89.85	NA	0	51.31	141.16	89.85
MW-105	100.15	91.03	NA	0	47.60	138.63	91.03
MW-106	Abandoned					148.41	NA
MW-107	Abandoned					148.93	NA
MW-201	101.52	93.07	NA	0	39.84	132.91	93.07
MW-202	92.59	Dry	NA	0	Dry	137.89	NA
MW-203	Abandoned					143.89	NA
MW-204	99.68	97.86	NA	0	42.28	140.14	97.86
MW-205	98.25	92.00	NA	0	46.04	138.04	92.00
MW-501A	92.58	Dry	NA	0	Dry	NM	NA
MW-502	100.49	94.90	NA	0	33.40	128.30	94.90
MW-503B	108.60	95.34	NA	0	34.62	129.96	95.34
MW-504**	95.85	95.12	NM	NM	NM	134.51	NM
MW-600A	NM	92.62	89.46	3.16	30.25	120.34	90.09
MW-601A	89.40	Dry	NA	0	Dry	126.53	NA
MW-603	97.28	89.53	NA	0	29.01	118.54	89.53
MW-604*	103.14	102.78	NA	0	35.38	138.16	102.78
MW-605	94.03	91.22	NA	0	23.32	114.54	91.22
MW-606	99.16	94.21	NA	0	19.68	113.89	94.21
MW-607	106.80	104.78	NA	0	21.25	126.03	104.78
W-1	129.63	102.95	NA	0	39.94	142.89	102.95
W-3A	104.55	104.55	103.55	1.00	20.25	124.00	103.75
W-4	129.07	104.36	NA	0	38.02	142.38	104.36
W-7***	NM	87.97	NA	0	NM	NM	NA
W-8***	NM	69.18	NA	0	NM	NM	NA

Notes:
Groundwater elevation = (top of casing elevation - depth to water) + (0.8 x hydrocarbon thickness)
NA- Not Applicable.
NM- Not Measured.
Groundwater elevation correction for the presence of free product was performed assuming a specific gravity of 0.8 for the petroleum product.
* Monitoring well MW-604 was found dry when sampling was attempted on 10/6/2005.
** Monitoring well MW-504 did not have hydrocarbons present during initial gauging, but following purging, hydrocarbons were measured.
***Former production wells W-7 and W-8 were never surveyed and are not used in calculating groundwater gradients (screened in a deeper aquifer).
msl - mean sea level.

SDMS DOCID# 1121051

E 2
XYGENATES IN GROUNDWATER

ATER MONITORING REPORT
IATES, LLP
:O REFINERY
GS, CALIFORNIA

603-1005	MW-605-1005	MW-605-1005-D	MW-606-1005	MW-607-1005	W-1-1005	W-4-1005	W-7-1005	W-8-1005	TB100605	TB100505	TB100705
/6/2005	10/5/2005	10/5/2005	10/5/2005	10/5/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	9/29/2005	10/5/2005	10/7/2005
Concentration (mg/L)											
0.15	ND<0.10	ND<0.10	0.240	0.76	0.31	0.35	ND<0.1	0.22	NA	NA	NA
)<0.01	ND<0.01	ND<0.01	0.015	0.016	0.02	ND<0.01	ND<0.01	ND<0.01	ND<0.01	ND<0.01	ND<0.01
00082	ND<0.0005	ND<0.0005	0.0056	0.0012	0.043	0.031	ND<0.0005	0.00052	ND<0.0005	ND<0.0005	ND<0.0005
)<0.001	ND<0.001	ND<0.001	ND<0.001	0.0027	ND<0.001	0.0011	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
)<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	0.0012	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
)<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	0.0011	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
0.008	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	0.0017	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
0.012	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005
0.10	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
0.022	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	0.0064	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
).0073	ND<0.001	ND<0.001	ND<0.001	ND<0.001	0.0016	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
)<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
)<0.001	ND<0.001	ND<0.001	ND<0.001	0.0091	0.0044	0.0059	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
)<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
)<0.01	ND<0.01	ND<0.01	ND<0.01	ND<0.01	ND<0.01	ND<0.01	ND<0.01	ND<0.01	ND<0.01	ND<0.01	ND<0.01
)<0.001	ND<0.001	ND<0.001	ND<0.001	0.012	ND<0.01	0.0042	ND<0.01	ND<0.01	ND<0.001	ND<0.001	ND<0.001
0.16	0.0043	0.0045	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
)<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
0.15	0.02	0.02	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
)<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
)<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.01	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
).0018	ND<0.005	ND<0.005	0.0032	0.0012	0.0071	0.0013	ND<0.0005	ND<0.001	ND<0.005	ND<0.005	ND<0.005
)<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
)<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.01	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
)<0.001	ND<0.001	ND<0.001	0.0048	0.0017	0.025	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001
)<0.01	ND<0.01	ND<0.01	0.042	0.074	0.034	0.047	ND<0.01	ND<0.01	ND<0.01	ND<0.01	ND<0.01
)<0.002	ND<0.002	ND<0.002	ND<0.002	ND<0.002	ND<0.002	ND<0.002	ND<0.002	ND<0.002	ND<0.002	ND<0.002	ND<0.002

TABLE 2
SUMMARY OF TPH-g, VOCs, AND OXYC

2005 SEMI-ANNUAL GROUNDWATE
ISOLA ASSOCIAT
FORMER CENCO R
SANTA FE SPRINGS, (

	Sample ID:	MW-104A-1005	MW-105-1005	MW-105-1005-D	MW-201-1005	MW-204-1005	MW-205-1005	MW-502-1005	MW-503B-1005	MW-603
	Date:	10/7/2005	10/6/2005	10/6/2005	10/7/2005	10/7/2005	10/6/2005	10/5/2005	10/5/2005	10/6/2
ANALYTE	California MCL (mg/L)									
TPH-g	NA	ND<0.10	**0.30**	**0.32**	**3.4**	**0.34**	**0.85**	**15**	**5.4**	0.1
Acetone	NA	ND<0.01	ND<0.01	ND<0.01	**0.093**	ND<0.01	**0.017**	ND<1.0	ND<0.20	ND<0
Benzene	0.001	ND<0.0005	ND<0.0005	ND<0.0005	**0.74**	**0.0057**	**0.055**	**0.90**	**1.1**	0.000
sec-Butylbenzene	NA	ND<0.001	ND<0.001	ND<0.001	**0.016**	ND<0.001	ND<0.001	ND<0.10	ND<0.02	ND<0.
Chloroethane	NA	ND<0.001	ND<0.001	ND<0.001	ND<0.005	ND<0.001	ND<0.001	ND<0.10	ND<0.02	ND<0.
1,4-Dichlorobenzene	0.005	ND<0.001	ND<0.001	ND<0.001	ND<0.005	ND<0.001	ND<0.001	ND<0.10	ND<0.02	ND<0
1,1-Dichloroethane	0.005	ND<0.001	**0.0058**	**0.0057**	ND<0.005	ND<0.001	ND<0.001	ND<0.10	ND<0.02	0.0
1,2-Dichloroethane	0.0005	ND<0.0005	**0.00058**	**0.00055**	**0.034**	**0.0016**	ND<0.0005	ND<0.05	ND<0.01	0.0
1,1-Dichloroethene	0.006	ND<0.001	**0.01**	**0.0096**	ND<0.005	ND<0.001	ND<0.001	ND<0.10	ND<0.02	0.1
c-1,2-Dichloroethene	0.006	**0.0034**	**0.01**	**0.01**	**0.049**	**0.0034**	**0.0042**	ND<0.10	ND<0.02	0.0
t-1,2-Dichloroethene	0.01	ND<0.001	**0.0037**	**0.0039**	ND<0.005	ND<0.001	ND<0.001	ND<0.10	ND<0.02	0.00
Ethylbenzene	0.3	ND<0.001	ND<0.001	ND<0.001	**0.47**	**0.0042**	ND<0.001	**0.430**	**0.073**	ND<0
Isopropylbenzene	NA	ND<0.001	ND<0.001	ND<0.001	**0.085**	**0.0011**	ND<0.001	ND<0.10	**0.061**	ND<0
p-Isopropyltoluene	NA	ND<0.001	ND<0.001	ND<0.001	**0.021**	ND<0.001	ND<0.001	ND<0.10	ND<0.02	ND<0
Naphthalene	NA	ND<0.01	ND<0.01	ND<0.01	**0.12**	ND<0.01	ND<0.01	ND<1.0	ND<0.20	ND<(
n-Propylbenzene	NA	ND<0.001	ND<0.001	ND<0.001	**0.086**	**0.0011**	ND<0.001	**0.11**	**0.09**	ND<0
Tetrachloroethene	NA	ND<0.001	**0.0065**	**0.0045**	ND<0.005	ND<0.001	ND<0.001	ND<0.10	ND<0.02	0.1
Toluene	0.15	ND<0.001	ND<0.001	ND<0.001	**0.037**	ND<0.001	ND<0.001	ND<0.10	ND<0.02	ND<0
Trichloroethene	NA	ND<0.001	**0.041**	**0.034**	ND<0.005	ND<0.001	ND<0.001	ND<0.1	ND<0.02	0.1
1,2,4-Trimethylbenzene	NA	ND<0.001	ND<0.001	ND<0.001	**0.033**	**0.0023**	ND<0.001	ND<0.10	ND<0.02	ND<0
1,3,5-Trimethylbenzene	NA	ND<0.001	ND<0.001	ND<0.001	**0.016**	**0.0012**	ND<0.001	**0.11**	ND<0.02	ND<0
Vinyl Chloride	0.0005	ND<0.0005	**0.0014**	**0.0014**	ND<0.0025	ND<0.0005	ND<0.0005	ND<0.05	ND<0.01	0.00
p/m-Xylene	1.75	ND<0.001	ND<0.001	ND<0.001	**0.073**	**0.0021**	ND<0.001	**0.11**	**0.038**	ND<0
o-Xylene	1.75	ND<0.001	ND<0.001	ND<0.001	**0.018**	ND<0.001	ND<0.001	ND<0.10	ND<0.02	ND<0
Methyl-t-Butyl Ether (MTBE)	0.005	ND<0.001	ND<0.001	ND<0.001	ND<0.005	ND<0.001	ND<0.001	**15**	ND<0.02	ND<0
Tert-Butyl Alcohol (TBA)	NA	**0.083**	**0.025**	**0.031**	**0.13**	**0.09**	ND<0.01	ND<1.0	ND<0.20	ND<
Diisopropyl Ether (DIPE)	NA	ND<0.002	**0.0021**	**0.0023**	ND<0.01	ND<0.002	ND<0.002	ND<0.20	ND<0.04	ND<(

Notes
Only detected compounds are shown on table
Total Petroleum Hydrocarbons as gasoline (TPH-g) was analyzed using EPA Preparation Method 5030B and Method DHS LUFT
Volatile Organic Compounds (VOCs) were analyzed using EPA Preparation Method 5030B and EPA Method 8260B
ND - Not detected at the indicated reporting limit
NA - Not analyzed
mg/L - Milligrams per liter
MCL - California Department of Health Services 2003 maximum contaminant level
Bold indicates detected value
Highlighted values exceed the California MCL
NA- No MCL available

TABLE 2
SUMMARY OF TPH-g, VOCs, AND OXYGENATES IN GROUNDWATER

2005 SEMI-ANNUAL GROUNDWATER MONITORING REPORT
ISOLA ASSOCIATES, LLP
FORMER CENCO REFINERY
SANTA FE SPRINGS, CALIFORNIA

Sample ID:	MW-104A-1005	MW-105-1005	MW-105-1005-D	MW-201-1005	MW-204-1005	MW-205-1005	MW-502-1005	MW-503B-1005	MW-603-1005	MW-605-1005	MW-605
Date:	10/7/2005	10/6/2005	10/6/2005	10/7/2005	10/7/2005	10/6/2005	10/5/2005	10/5/2005	10/6/2005	10/5/2005	10/5/2
California MCL (mg/L)										Concentration (mg/L)	
NA	ND<0 10	0.30	0.32	3.4	0.34	0.85	15	5.4	0.15	ND<0.10	ND<
NA	ND<0.01	ND<0.01	ND<0 01	0.093	ND<0.01	0.017	ND<1.0	ND<0.20	ND<0.01	ND<0.01	ND<
0 001	ND<0 0005	ND<0 0005	ND<0 0005	0.74	0.0057	0.055	0.90	1.1	0.00082	ND<0.0005	ND<0.
NA	ND<0 001	ND<0 001	ND<0 001	0.016	ND<0 001	ND<0.001	ND<0 10	ND<0.02	ND<0.001	ND<0.001	ND<0
NA	ND<0 001	ND<0.001	ND<0 001	ND<0 005	ND<0 001	ND<0 001	ND<0 10	ND<0.02	ND<0 001	ND<0.001	ND<0
0 005	ND<0 001	ND<0 001	ND<0 001	ND<0 005	ND<0 001	ND<0 001	ND<0.10	ND<0.02	ND<0.001	ND<0.001	ND<0
0 005	ND<0 001	0.0058	0.0057	ND<0 005	ND<0 001	ND<0.001	ND<0 10	ND<0.02	0.008	ND<0.001	ND<0
0 0005	ND<0 0005	0.00058	0.00055	0.034	0.0016	ND<0.0005	ND<0.05	ND<0.01	0.012	ND<0.0005	ND<0.
0 006	ND<0 001	0.01	0.0096	ND<0.005	ND<0 001	ND<0.001	ND<0 10	ND<0.02	0.10	ND<0.001	ND<0
0 006	0.0034	0.01	0.01	0.049	0.0034	0.0042	ND<0.10	ND<0.02	0.022	ND<0.001	ND<0
0 01	ND<0 001	0.0037	0.0039	ND<0.005	ND<0 001	ND<0.001	ND<0.10	ND<0.02	0.0073	ND<0.001	ND<0
0 3	ND<0 001	ND<0 001	ND<0 001	0.47	0.0042	ND<0.001	0.430	0.073	ND<0 001	ND<0.001	ND<0
NA	ND<0 001	ND<0 001	ND<0 001	0.085	0.0011	ND<0.001	ND<0 10	0.061	ND<0 001	ND<0.001	ND<0
NA	ND<0 001	ND<0.001	ND<0 001	0.021	ND<0 001	ND<0.001	ND<0.10	ND<0.02	ND<0.001	ND<0.001	ND<0
NA	ND<0 01	ND<0 01	ND<0 01	0.12	ND<0 01	ND<0 01	ND<1 0	ND<0.20	ND<0.01	ND<0.01	ND<
NA	ND<0 001	ND<0 001	ND<0 001	0.086	0.0011	ND<0.001	0.11	0.09	ND<0.001	ND<0.001	ND<0
NA	ND<0 001	0.0065	0.0045	ND<0 005	ND<0 001	ND<0.001	ND<0.10	ND<0.02	0.16	0.0043	0.00
0 15	ND<0 001	ND<0 001	ND<0 001	0.037	ND<0 001	ND<0 001	ND<0.10	ND<0.02	ND<0 001	ND<0.001	ND<0
NA	ND<0 001	0.041	0.034	ND<0 005	ND<0 001	ND<0 001	ND<0.1	ND<0.02	0.15	0.02	0.0
NA	ND<0 001	ND<0 001	ND<0 001	0.033	0.0023	ND<0 001	ND<0 10	ND<0.02	ND<0 001	ND<0.001	ND<0
NA	ND<0 001	ND<0 001	ND<0 001	0.016	0.0012	ND<0 001	0.11	ND<0.02	ND<0 001	ND<0.001	ND<0
0 0005	ND<0 0005	0.0014	0.0014	ND<0 0025	ND<0 0005	ND<0 0005	ND<0.05	ND<0.01	0.0018	ND<0.005	ND<0
1 75	ND<0 001	ND<0 001	ND<0 001	0.073	0.0021	ND<0 001	0.11	0.038	ND<0 001	ND<0.001	ND<0
1 75	ND<0 001	ND<0 001	ND<0 001	0.018	ND<0 001	ND<0 001	ND<0 10	ND<0 02	ND<0 001	ND<0.001	ND<0
0 005	ND<0 001	ND<0 001	ND<0 001	ND<0 005	ND<0 001	ND<0.001	15	ND<0 02	ND<0 001	ND<0.001	ND<0
NA	0.083	0.025	0.031	0.13	0.09	ND<0 01	ND<1 0	ND<0 20	ND<0 01	ND<0.01	ND<
NA	ND<0 002	0.0021	0.0023	ND<0 01	ND<0 002	ND<0 002	ND<0 20	ND<0 04	ND<0 002	ND<0 002	ND<0

re shown on table
ns as gasoline (TPH-g) was analyzed using EPA Preparation Method 5030B and Method DHS LUFT
s (VOCs) were analyzed using EPA Preparation Method 5030B and EPA Method 8260B
icated reporting limit

of Health Services 2003 maximum contaminant level
e
he California MCL