Appendix A

Locations of California Refineries and Air Monitoring Stations

Bay Area Air Quality Management District

A-1 Bay Area Refineries and Air Monitoring Stations Overview Map
A-2a Chevron-Richmond Refinery with Bay Area and Community Air Monitoring Stations Map
A-2b Chevron-Richmond Refinery with Ground Level and Fence-line Monitors Map
A-3a Valero-Benicia Refinery with Bay Area Air Monitoring Stations Map
A-3b Valero-Benicia Refinery with Ground Level Monitors Map
A-4a Phillips 66-Rodeo Refinery with Bay Area and Community Air Monitoring Stations Map
A-4b Phillips 66-Rodeo Refinery with Ground Level and Fence-line Monitors Map
A-5a Tesoro-Martinez Refinery with Bay Area Air Monitoring Stations Map
A-5b Tesoro-Martinez Refinery with Ground Level Monitors Map
A-6a Shell-Martinez Refinery with Bay Area Air Monitoring Stations Map
A-6b Shell-Martinez Refinery with Ground Level Monitors Map
A-7 Bay Area Special Studies Air Monitoring Stations Map

South Coast Air Quality Management District

A-8 South Coast Refinery and Air Monitoring Stations Overview Map
A-9 Chevron-El Segundo Refinery with South Coast Air Monitoring Stations Map
A-10 ExxonMobil-Torrance Refinery with South Coast Air Monitoring Stations Map
A-11 Phillips 66-Wilmington Refinery with South Coast and Community Air Monitoring Stations Map
A-12 Tesoro-Wilmington Refinery with South Coast and Community Air Monitoring Stations Map
A-13 Valero-Wilmington Refinery with South Coast and Community Air Monitoring Stations Map
A-14 Paramount Petroleum-Paramount Refinery with South Coast Air Monitoring Stations Map
A-15 Tesoro-Carson Refinery with South Coast and Community Air Monitoring Stations Map

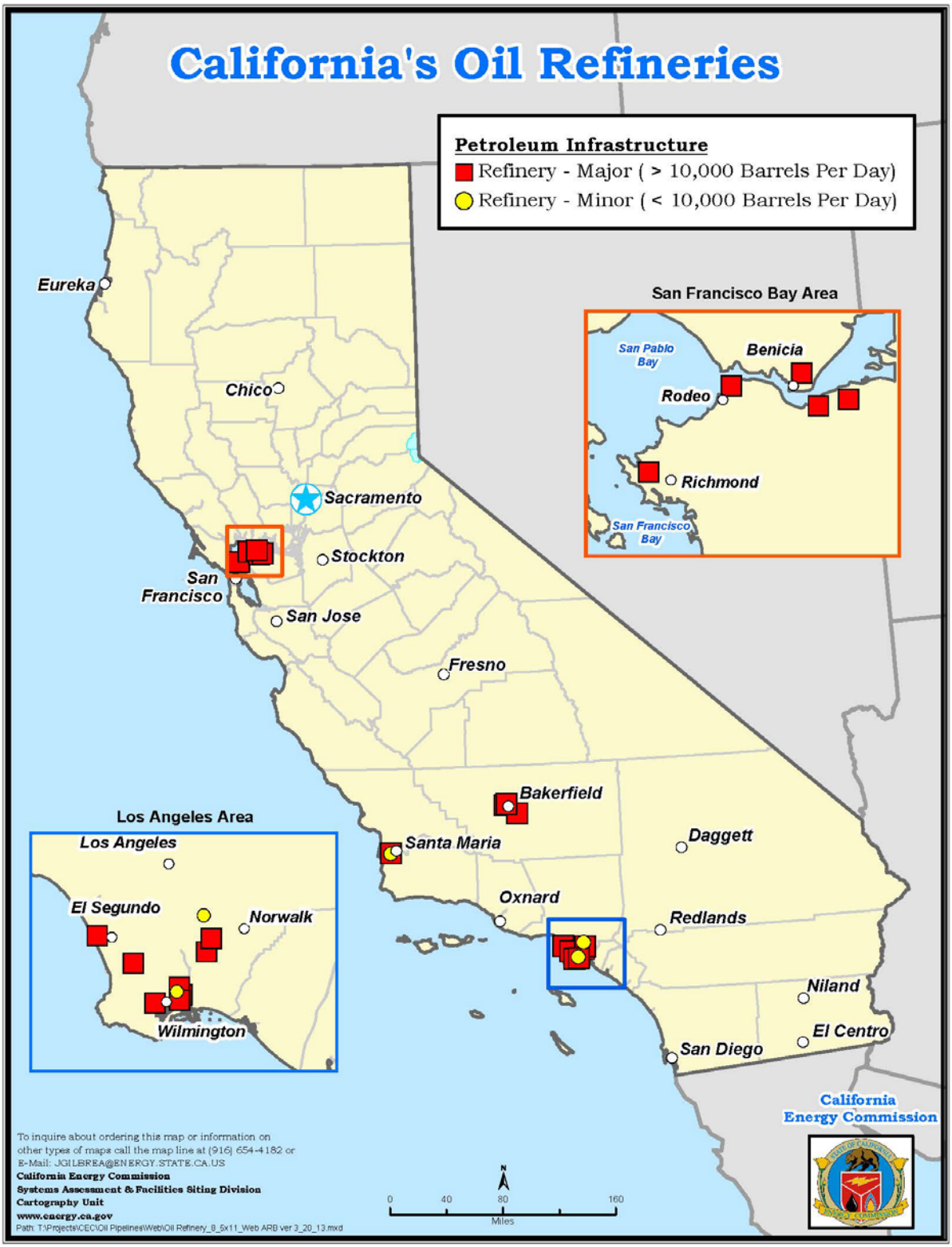
San Joaquin Valley Air Pollution Control District
A-16 San Joaquin Valley Refinery and Air Monitoring Stations Overview Map
A-17 Alon-Bakersfield Refinery with San Joaquin Valley Air Monitoring Stations Map
A-18 Kern Oil-Bakersfield Refinery with San Joaquin Valley Air Monitoring Stations Map
A-19 San Joaquin Refining Co.-Bakersfield Refinery with San Joaquin Valley Air Monitoring Stations Map

San Luis Obispo Air Pollution Control District
A-20 Phillips 66-Santa Maria Refinery with San Luis Obispo Air Monitoring Stations Map

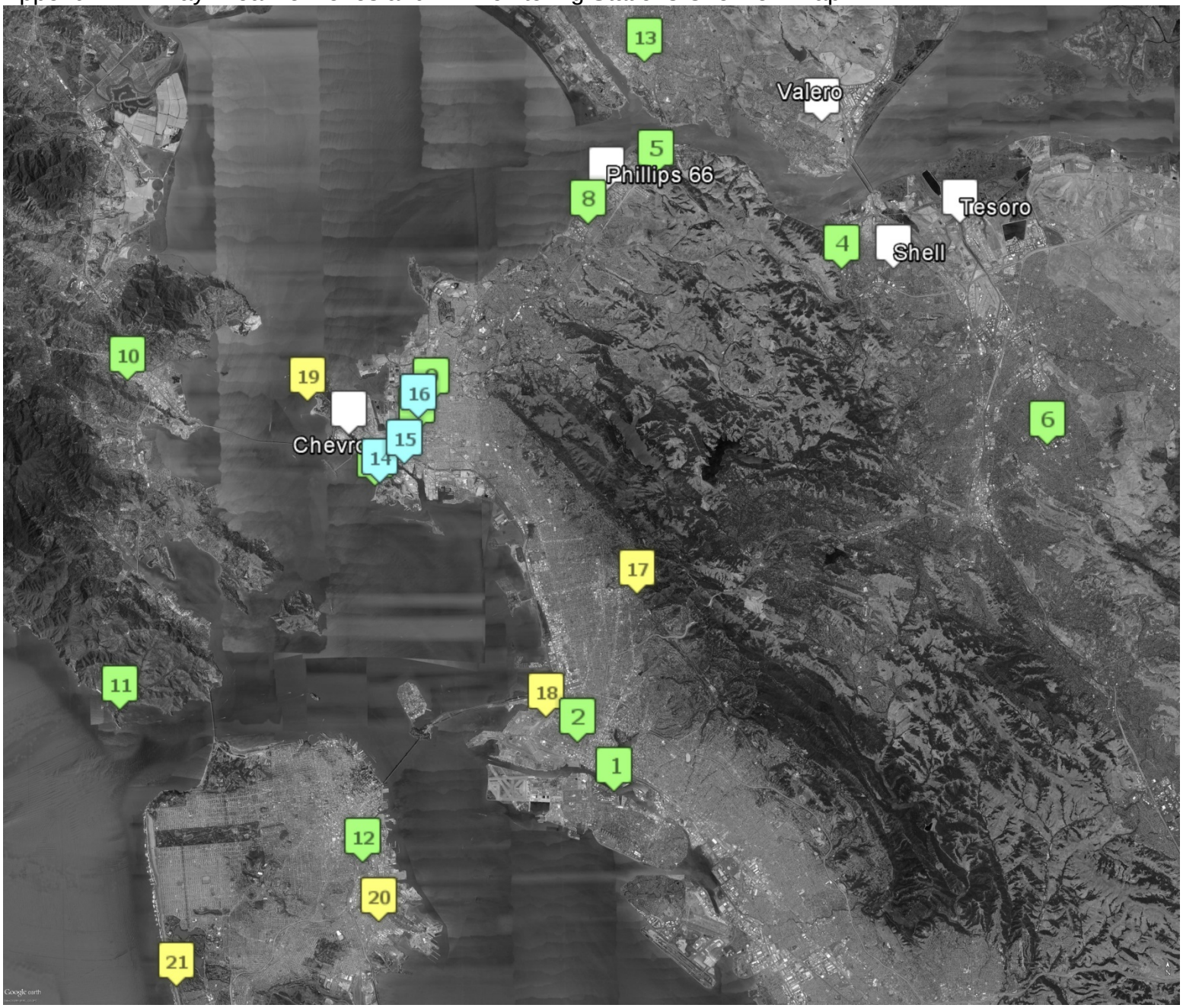
California Refineries

Bay Area Air Quality Management District	Chevron Richmond Tesoro Martinez Shell Martinez	Valero Benicia Phillips 66 Rodeo
South Coast Air Quality Management District	Chevron El Segundo ExxonMobil Torrance Phillips 66 Wilmington Tesoro Wilmington	Valero Wilmington Paramount Petroleum Paramount Tesoro Carson Edgington Long Beach (closed)
San Joaquin Valley Air Pollution Control District	Alon Bakersfield Kern Oil Bakersfield	San Joaquin Refining Co. Bakersfield
San Luis Obispo Air Pollution Control District	Phillips 66 Santa Maria	

Figure 1. Map of California Refineries



Appendix A-1: Bay Area Refineries and Air Monitoring Stations Overview Map



Appendix A-1: Bay Area Refinery and Air Monitoring Stations Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
BAAQMD Air Monitoring Stations																
1	Laney College	900 Fallon St		TECO 42	TECO 42		TECO 48			Met One BAM 1020						
2	Oakland	1100 - 21st St.	TECO 49	TECO 42		TECO 43	TECO 48			Met One BAM 1020	Xontech 910A		Teledyne 633			
3	Pt. Richmond	140 W. Richmond Ave.										TECO 45				
4	Martinez	521 Jones St.				TECO 43					Xontech 910A					
5	Crockett	End of Kendall Ave.				TECO 43					Xontech 910A					
6	Concord	2956-A Treat Blvd.	Teledyne 400	TECO 42		TECO 43	TECO 48	SA 1200	R&P 2025 (2)		Xontech 910A			Campbell Scientific CR10, Vaisala HMP-45, Climatronics F460		
7	Richmond	1065 Seventh St.				TECO 43					Xontech 910A	TECO 45				
8	Rodeo	326 Third St.										TECO 45				
9	San Pablo	1865-D Rumrill Blvd.	TECO 49	TECO 42		TECO 43	TECO 48	Tisch 6070			Xontech 910A					
10	San Rafael	534 Fourth St.	TECO 49	TECO 42			TECO 48	SA 1200		Met One BAM 1020	Xontech 910A					
11	Fort Cronhkite	Building 1049									Xontech 910A					
12	San Francisco	10 Arkansas St.	TECO 49	TECO 42			TECO 48	Tisch 6070		Met One BAM 1020	Xontech 910A					
13	Vallejo	304 Tuolumne St.	TECO 49	TECO 42		TECO 43	TECO 48			Met One BAM 1020	Xontech 910A			Campbell Scientific CR10, Vaisala HMP-45, Climatronics F460, Druck CS115		

Appendix A-1: Bay Area Refinery and Air Monitoring Stations Table (cont'd)

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
Chevron/Argos Community Air Monitoring Station																
14	Point Richmond	139 E. Washington St.								Met One BAM 1020	3 sampling systems for PAHs, VOCs, metals, & sulfur compounds	Teledyne T101	Teledyne 633	Met One 466A	Teledyne T201	
15	Atchinson Village	230 Curry St.								Met One BAM 1020	3 sampling systems for PAHs, VOCs, metals, & sulfur compounds	Teledyne T101	Teledyne 633	Met One 466A	Teledyne T201	
16	North Richmond	1410 Kelsey St.								Met One BAM 1020	3 sampling systems for PAHs, VOCs, metals, & sulfur compounds	Teledyne T101	Teledyne 633	Met One 466A	Teledyne T201	

Appendix A-1: Bay Area Refinery and Air Monitoring Stations Table (cont'd)

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
MET Stations																
17	Berkeley Lab	LBNL, 1 Cyclotron Rd.												Campbell Scientific CR1000		
18	Oakland Water Treatment Plant	2020 Wake Ave.												Vaisala PTB 110, Climatronics F460, Campbell Scientific 107/CR10		
19	Pt. San Pablo	1900 Western Dr.												Climatronics F460, Campbell Scientific 107/CR10		
20	San Francisco Water Treatment	750 Phelps St.												Campbell Scientific CR1000		
21	San Francisco	Fort Funston												Climatronics F460, Campbell Scientific 107/CR10		

Appendix A-2a: Chevron-Richmond Refinery with Bay Area and Community Air Monitoring Stations Map

Appendix A-2a: Chevron-Richmond Refinery with Bay Area and Community Air Monitoring Stations Table

			Criteria Pollutants								Toxics			MET	NH_3	TSP
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**			
BAAQMD Air Monitoring Stations																
3	Pt. Richmond	140 W. Richmond Ave.										TECO 45				
7	Richmond	1065 Seventh St.				TECO 43					Xontech 910A	TECO 45				
9	San Pablo	1865-D Rumrill Blvd.	TECO 49	TECO 42		TECO 43	TECO 48	Tisch 6070			Xontech 910A					
MET Stations																
19	Pt. San Pablo	1900 Western Dr.												Climatronics F460, Campbell Scientific 107/CR10		
Chevron/Argos Community Air Monitoring Stations																
14	Point Richmond	139 E. Washington St.								Met One BAM 1020	3 sampling systems for PAHs, VOCs, metals, & sulfur compounds	Teledyne T101	Teledyne 633	Met One 466A	Teledyne T201	
15	Atchinson Village	230 Curry St.								Met One BAM 1020	3 sampling systems for PAHs, VOCs, metals, & sulfur compounds	Teledyne T101	Teledyne 633	Met One 466A	Teledyne T201	
16	North Richmond	1410 Kelsey St.								Met One BAM 1020	3 sampling systems for PAHs, VOCs, metals, & sulfur compounds	Teledyne T101	Teledyne 633	Met One 466A	Teledyne T201	

Appendix A-2b: Chevron-Richmond Refinery with Ground Level and Fence-line Monitors Map

Appendix A-2b: Chevron-Richmond Refinery with Ground Level and Fence-line Monitors Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
Ground Level Monitoring Sites (Chevron)																
22	Chevron MET	37°57'14.04"N 122°22'46.50"W												Campbell Scientific CR1000		
23	Chevron Castro St. GLM	37°56'34.12"N 122°22'31.57"W				Thermo 43C						Thermo 45C and 340 H_2S Converter				
24	Chevron Gertrude GLM	37°57'13.71"N 122°22'46.40"W				Thermo 43C						Thermo 45C and 340 H_2S Converter				
25	Chevron Golden Gate GLM	37°55'51.66"N 122°23'39.32"W				Thermo 43C						Thermo 45C and 340 H_2S Converter				
Fence-line Monitoring Sites (Chevron)																
26			Talon V Open Path UV			Talon V Open Path UV	Boreal Gas Finder 2					Boreal Gas Finder 2			Boreal Gas Finder 2	
27			Talon V Open Path UV			Talon V Open Path UV	Boreal Gas Finder 2					Boreal Gas Finder 2		Met One 466A	Boreal Gas Finder 2	
28			Talon V Open Path UV			Talon V Open Path UV	Boreal Gas Finder 2					Boreal Gas Finder 2			Boreal Gas Finder 2	
29			Talon V Open Path UV			Talon V Open Path UV	Boreal Gas Finder 2					Boreal Gas Finder 2			Boreal Gas Finder 2	
30			Talon V Open Path UV			Talon V Open Path UV	Boreal Gas Finder 2					Boreal Gas Finder 2			Boreal Gas Finder 2	
31			Talon V Open Path UV			Talon V Open Path UV	Boreal Gas Finder 2					Boreal Gas Finder 2			Boreal Gas Finder 2	

Appendix A-3a: Valero-Benicia Refinery with Bay Area Monitoring Stations Map

Appendix A-3a: Valero-Benicia Refinery with Bay Area Air Monitoring Stations Table

			Criteria Pollutants								Toxics			MET	NH_3	TSP
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**			
BAAQMD Air Monitoring Stations																
4	Martinez	521 Jones St.				TECO 43					Xontech 910A					
5	Crockett	End of Kendall Ave.				TECO 43					Xontech 910A					
13	Vallejo	304 Tuolumne St.	TECO 49	TECO 42		TECO 43	TECO 48			Met One BAM 1020	Xontech 910A			Campbell Scientific CR10, Vaisala HMP-45, Climatronics F460, Druck CS115		

Appendix A-3b: Valero-Benicia Refinery with Ground Level Monitors Map

Appendix A-3b: Valero-Benicia Refinery with Ground Level Monitors Table

			Criteria Pollutants								Toxics			MET	NH_3	TSP
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**			
Ground Level Monitoring Sites (Valero)																
32	Valero Admin MET	38° 4'27.98"N 122° 8'39.85"W												Campbell Scientific CR1000		
33	Valero Warehouse MET	38° 4'20.13"N 122° 7'36.41"W												Campbell Scientific CR1000		
34	Valero Gas Station GLM	38° 3'34.33"N 122° 8'58.43"W				Teco 43C						Teco 45C				
35	Valero Wastewater GLM	38° 4'2.79"N 122° 7'25.36"W				Teco 43C						Teco 45C				
36	Valero Warehouse GLM	38° 4'2.79"N 122° 7'25.36"W				Teco 43C						Teco 45C				

Appendix A-4a: Phillips 66-Rodeo Refinery with Bay Area and Community Air Monitoring Stations Map

Appendix A-4a: Phillips 66-Rodeo Refinery with Bay Area and Community Air Monitoring Stations Table

			Criteria Pollutants								Toxics			MET	NH_3	TSP
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**			
BAAQMD Air Monitoring Stations																
5	Crockett	End of Kendall Ave.				TECO 43					Xontech 910A					
8	Rodeo	326 Third St.										TECO 45				
13	Vallejo	304 Tuolumne St.	TECO 49	TECO 42		TECO 43	TECO 48			Met One BAM 1020	Xontech 910A			Campbell Scientific CR10, Vaisala HMP-45, Climatronics F460, Druck CS115		

Appendix A-4b: Phillips 66-Rodeo Refinery with Ground Level and Fence-line Monitors Map

Appendix A-4b: Phillips 66-Rodeo Refinery with Ground Level and Fence-line Monitors Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
Ground Level Monitoring Sites (Phillips 66)																
37	Conoco Phillips Main MET	38° 2'24.24"N 122°15'39.87"W												Campbell Scientific CR1000		
38	Conoco Phillips Hillcrest School GLM and MET	38° 2'0.86"N 122°15'30.73"W				Teco 43i						Teco 45i		Campbell Scientific CR1000		
39	Conoco Phillips Cummings Skyway GLM and MET	38° 1'41.37"N 122°12'24.74"W				Teco 43i								Campbell Scientific CR1000		
40	Conoco Phillips East Refinery GLM	38° 2'41.13"N 122°14'12.12"W				Teco 43i						Teco 45i				
41	Conoco Phillips Crockett GLM	38° 3'14.81"N 122°13'1.73"W				Teco 43i						Teco 45i				
42	Conoco Phillips Tormey GLM	38° 2'55.32"N 122°14'55.71"W				Teco 43C						Teco 45C				

Appendix A-4b: Phillips 66-Rodeo Refinery with Ground Level and Fence-line Monitors Table (cont'd)

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
Fence-line Monitoring Sites (Phillips 66)																
43	AT-4	38° 2'41.15"N 122°15'43.44"W									SEC 2000/ 3100 (VOC)					
44	AT-5	38° 3'3.44"N 122°15'36.39"W									SEC 2000/ 3100 (VOC)					
45	N FLM RFL	38° 2'49.27"N 122°15'7.98"W	Talon V Open Path UV			Talon V Open Path UV	Boreal Gas Finder2					Boreal Gas Finder 2			Boreal Gas Finder 2	
46	AT-6	38° 2'15.05"N 122°15'6.31"W									SEC 2000/ 3100 (VOC)					
47	AT-3 (N FLM)	38° 2'29.82"N 122°14'39.12"W	Talon V Open Path UV			Talon V Open Path UV	Boreal Gas Finder2				SEC 2000/ 3100 (VOC)	Boreal Gas Finder 2		Met One 466A	Boreal Gas Finder 2	
48	S FLM	38° 2'21.89"N 122°15'38.50"W	Talon V Open Path UV			Talon V Open Path UV	Boreal Gas Finder2					Boreal Gas Finder 2			Boreal Gas Finder 2	
49	S FLM RFL	38° 2'2.79"N 122°15'15.80"W	Talon V Open Path UV			Talon V Open Path UV	Boreal Gas Finder2					Boreal Gas Finder 2			Boreal Gas Finder 2	
50	AT-2	38° 2'14.32"N 122°14'33.40"W									SEC 2000/ 3100 (VOC)					
51	AT-1	38° 2'16.17"N 122°14'23.85"W									SEC 2000/ 3100 (VOC)					

Appendix A-5a: Tesoro-Martinez Refinery with Bay Area Air Monitoring Stations Map

Appendix A-5a: Tesoro-Martinez Refinery with Bay Area Air Monitoring Stations Table

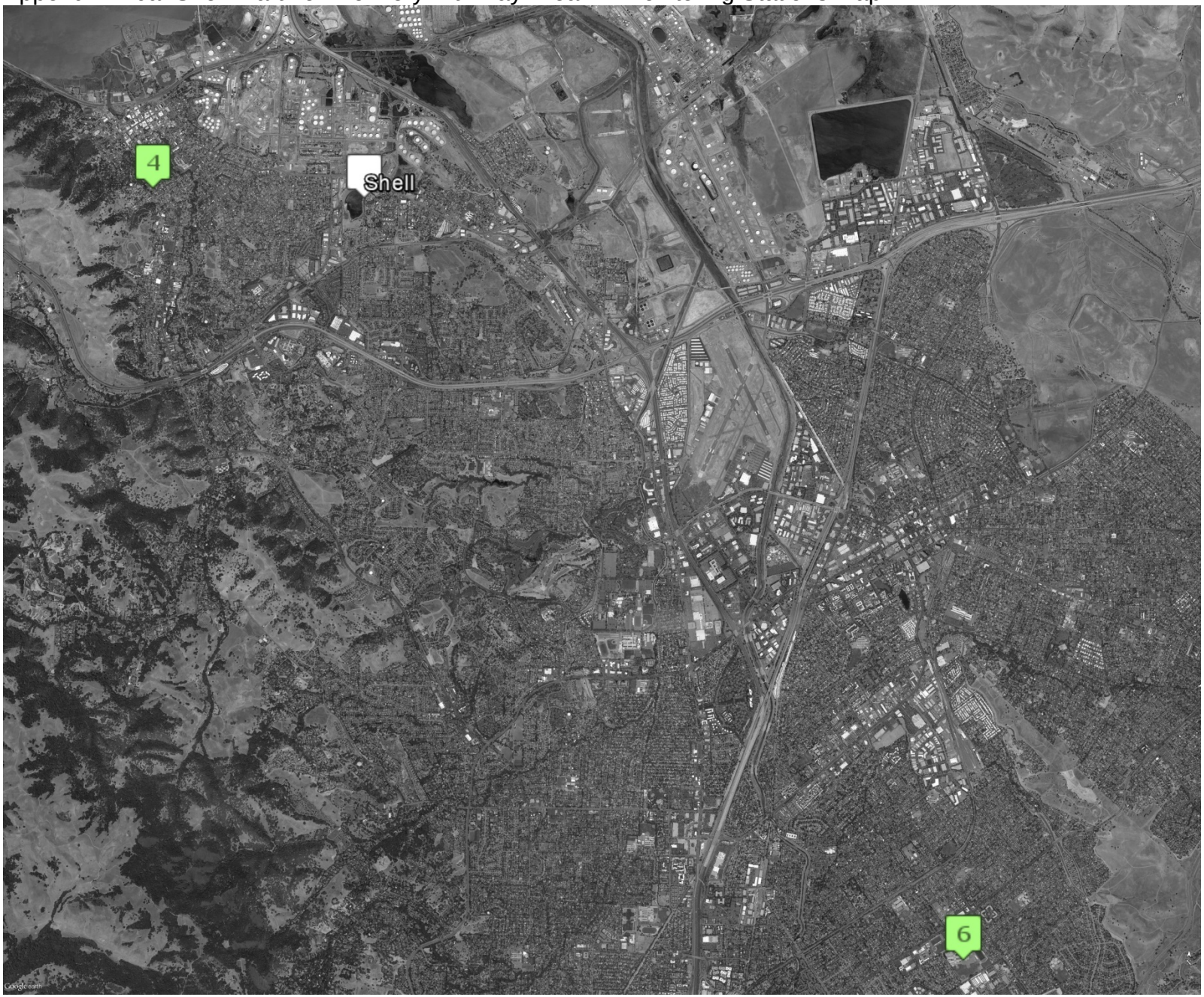
			Criteria Pollutants								Toxics			MET	NH_3	TSP
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**			
BAAQMD Air Monitoring Stations																
4	Martinez	521 Jones St.				TECO 43					Xontech 910A					
6	Concord	2956-A Treat Blvd.	Teledyne 400	TECO 42		TECO 43	TECO 48	SA 1200	R&P 2025 (2)		Xontech 910A			Campbell Scientific CR10, Vaisala HMP-45, Climatronics F460		

Appendix A-5b: Tesoro-Martinez Refinery with Ground Level Monitors Map

Appendix A-5b: Tesoro-Martinez Refinery with Ground Level Monitors Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
Ground Level Monitoring Sites (Tesoro)																
52	Tesoro Met	38° 1'52.60"N 122° 4'41.52"W												Campbell Scientific CR1000		
53	Martinez Pacheco Slough GLM	38° 1'56.13"N 122° 4'48.35"W										Thermo Electron Model 340 H_2S converter				
54	Martinez Chenery GLM	38° 1'21.56"N 122° 2'35.93"W				Thermo Scientific Model 43i analyzer						Thermo Electron Model 340 H_2S converter				
55	Martinez Gun Club GLM	38° 1'1.04"N 122° 4'50.74"W				Thermo Scientific Model 43i analyzer						Thermo Electron Model 340 H_2S converter				
56	Martinez Waterfront Road GLM	38° 2'7.95"N 122° 4'18.74"W				Thermo Scientific Model 43i analyzer						Thermo Electron Model 340 H_2S converter				

Appendix A-6a: Shell-Martinez Refinery with Bay Area Air Monitoring Stations Map



Appendix A-6a: Shell-Martinez Refinery with Bay Area Air Monitoring Stations Table

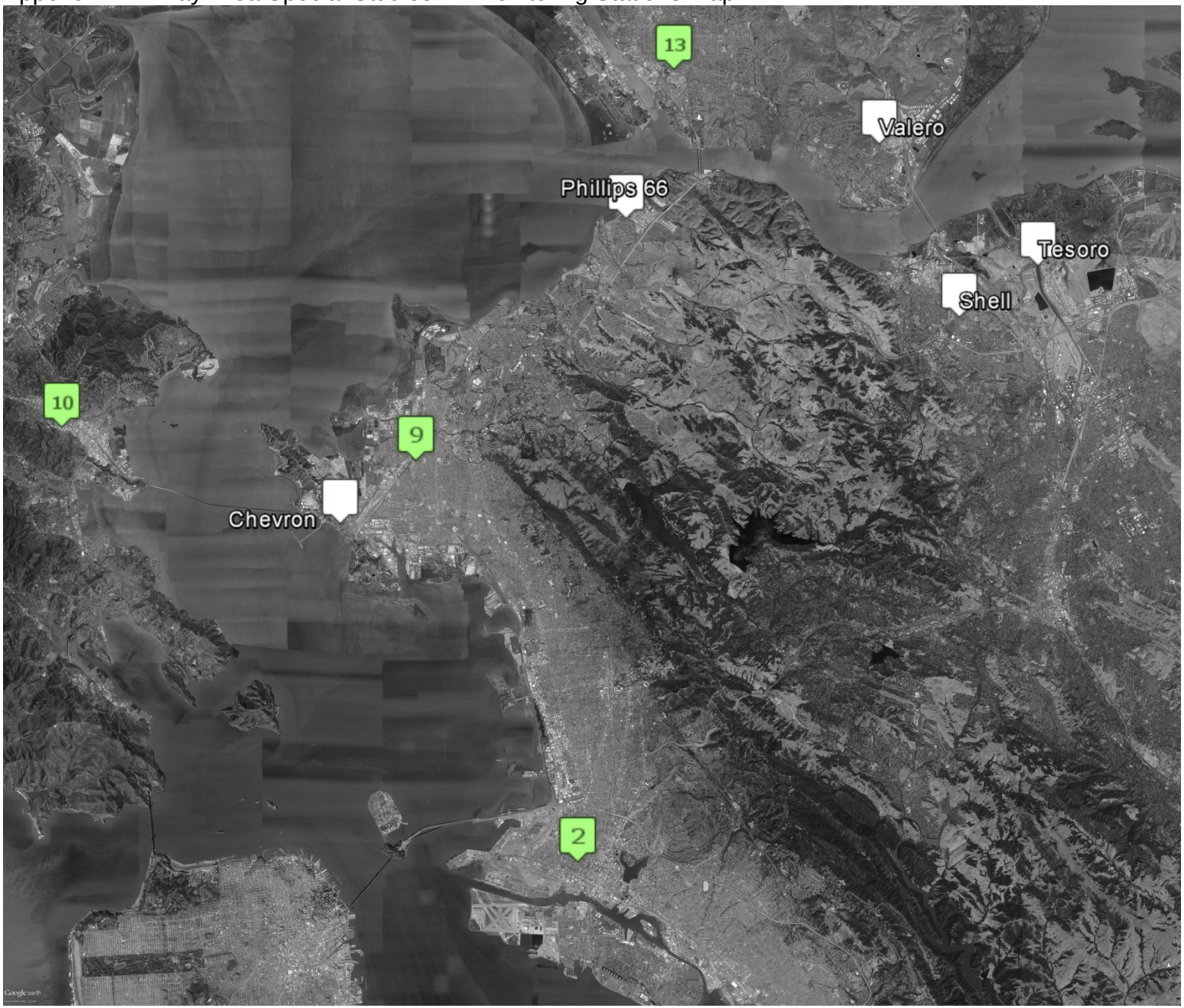
			Criteria Pollutants								Toxics			MET	NH_3	TSP
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**			
BAAQMD Air Monitoring Stations																
4	Martinez	521 Jones St.				TECO 43					Xontech 910A					
6	Concord	2956-A Treat Blvd.	Teledyne 400	TECO 42		TECO 43	TECO 48	SA 1200	R&P 2025 (2)		Xontech 910A			Campbell Scientific CR10, Vaisala HMP-45, Climatronics F460		

Appendix A-6b: Shell-Martinez Refinery with Ground Level Monitors Map

Appendix A-6b: Shell-Martinez Refinery with Ground Level Monitors Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
Ground Level Monitoring Sites (Shell)																
57	Shell East MET	38° '51.77"N 122° '12.81"W												Campbell Scientific CR1000		
58	Shell West MET	38° '33.36"N 122° '46.77"W												Campbell Scientific CR1000		
59	Shell East Levee Gate GLM	38° '29.91"N 122° '23.81"W										Teco 45i				
60	Shell Ace Hardware GLM	38° '44.29"N 122° '18.57"W				Teco 43C						Teco 45C				
61	Shell Mt. View GLM	38° 1'6.89"N 122° 6'7.04"W										Teco 45C				
62	Shell - Shell Ave. GLM	38° 1'0.45"N 122° 7'3.75"W										Teco 45C				

Appendix A-7: Bay Area Special Studies Air Monitoring Stations Map



Appendix A-7: Bay Area Special Studies Air Monitoring Stations Table

Special Studies						
Placemark #	**Station**	**Address**	**$PM_{2.5}$ SASS Spec.**	**Nephelometer**	**PAMS GC**	**UFP Count**
BAAQMD Air Monitoring Stations						
2	Oakland	1100 - 21st St.	MetOne SASS			
9	San Pablo	1865-D Rumrill Blvd.				TSI 3783
10	San Rafael	534 Fourth St.		Ecotech Aurora 1000		
13	Vallejo	304 Tuolumne St.	MetOne SASS	Ecotech Aurora 1000		

Appendix A-8: South Coast Refinery and Air Monitoring Stations Overview Map

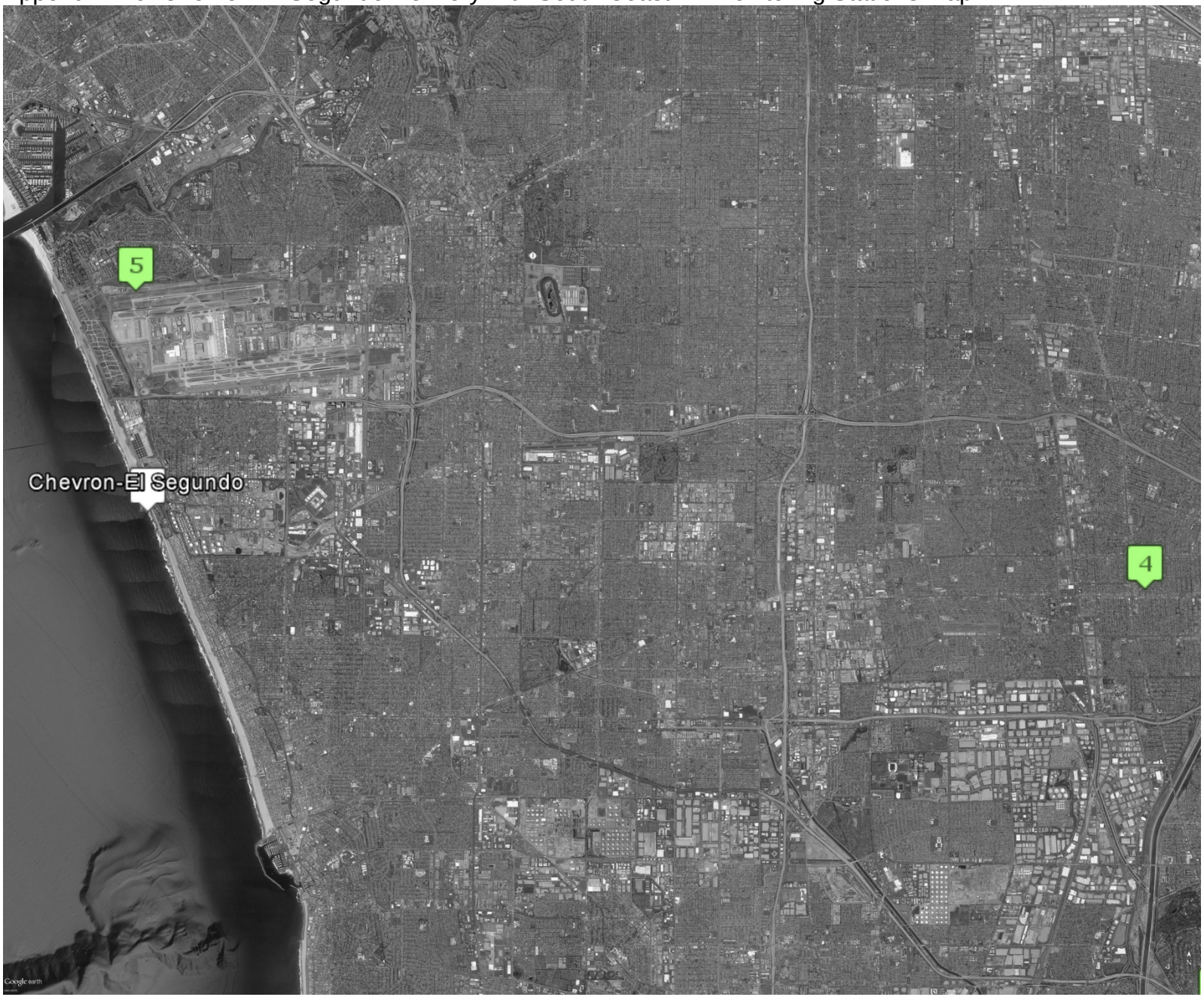
Appendix A-8: South Coast Refinery and Air Monitoring Stations Overview Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
SCAQMD Air Monitoring Stations																
1	Anaheim - Loara School	1630 Pampas Ln.	TECO 49, 49C, 49i	Teledyne 200E			Horiba APMA -370	SA 1200 & BAM 1020	BAM 1020	Anderson RAAS						
2	South Long Beach	1305 E. Pacific Coast Hwy.						Anderson SA1200	Met One BAM 1020	Anderson 300						GMW 2000
3	North Long Beach	3648 N. Long Beach Blvd.							Met One BAM 1020	Anderson RAAS 2.5-300						
4	Compton	700 North Bullis Rd.	TECO 49, 49C, 49i	TECO 42, 42C, 42i			Horiba APMA -370	Tisch 6070		Anderson RAAS						GMW 2000
5	Los Angeles - LAX	7201 W Westchester Pkwy.	Teledyne 400	TECO 42, 42C, 42i		Thermo Electron 43C-TLE/ 43i-TLE	Horiba APMA -370	GMW 1200								GMW 2000
6	La Habra	621 W. Lambert Rd.	TECO 49, 49C, 49i	TECO 42, 42C, 42i			Horiba APMA -360									

Appendix A-8: South Coast Refinery and Air Monitoring Stations Overview Table (cont'd)

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
San Pedro Bay Port's Community Air Monitoring Stations																
7	Port of LA: Outer Harbor	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D,& 092D		
8	Port of LA: Wilmington	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D,& 092D		
9	Port of LB: Inner Port	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D,& 092D		
10	Port of LB: Outer Port	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D,& 092D		
11	Port of LA: Terminal Island	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D,& 092D		
12	Port of LA: San Pedro	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D,& 092D		

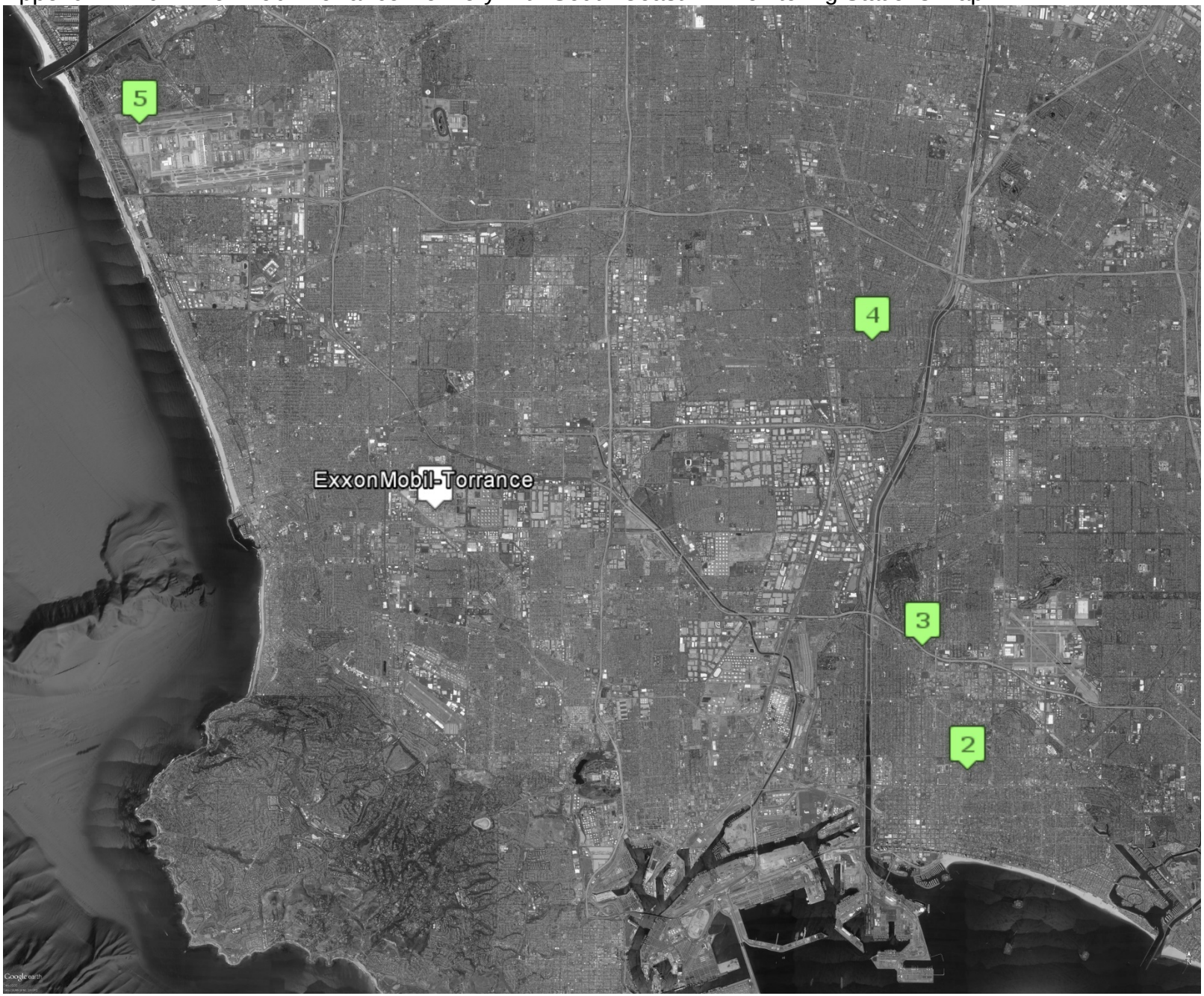
Appendix A-9: Chevron-El Segundo Refinery with South Coast Air Monitoring Stations Map



Appendix A-9: Chevron-El Segundo Refinery with South Coast Air Monitoring Stations Table (cont'd)

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
SCAQMD Air Monitoring Stations																
4	Compton	700 North Bullis Rd,	TECO 49, 49C, 49i	TECO 42, 42C, 42i			Horiba APMA-370	Tisch 6070		Anderson RAAS						GMW 2000
5	Los Angeles - LAX	7201 W Westchester Parkway	Teledyne 400	TECO 42, 42C, 42i		Thermo Electron 43C-TLE/43i-TLE	Horiba APMA-370	GMW 1200								GMW 2000

Appendix A-10: ExxonMobil-Torrance Refinery with South Coast Air Monitoring Stations Map



Appendix A-10: ExxonMobil-Torrance Refinery with South Coast Air Monitoring Stations Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
SCAQMD Air Monitoring Stations																
2	South Long Beach	1305 E. Pacific Coast Hwy.						Anderson SA1200	Met One BAM 1020	Anderson 300						GMW 2000
3	North Long Beach	3648 N. Long Beach Blvd.							Met One BAM 1020	Anderson RAAS 2.5-300						
4	Compton	700 North Bullis Rd.	TECO 49, 49C, 49i	TECO 42, 42C, 42i			Horiba APMA-370	Tisch 6070		Anderson RAAS						GMW 2000
5	Los Angeles - LAX	7201 W Westchester Pkwy.	Teledyne 400	TECO 42, 42C, 42i		Thermo Electron 43C-TLE/43i-TLE	Horiba APMA-370	GMW 1200								GMW 2000

Appendix A-11: Phillips 66-Wilmington Refinery with South Coast and Community Air Monitoring Stations Map

Appendix A-11: Phillips 66-Wilmington Refinery with South Coast and Community Air Monitoring Stations Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
SCAQMD Air Monitoring Stations																
2	South Long Beach	1305 E. Pacific Coast Hwy.						Anderson SA1200	Met One BAM 1020	Anderson 300						GMW 2000
3	North Long Beach	3648 N. Long Beach Blvd.							Met One BAM 1020	Anderson RAAS 2.5-300						

Appendix A-11: Phillips 66-Wilmington Refinery with South Coast and Community Air Monitoring Stations Table (cont'd)

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
San Pedro Bay Port's Community Air Monitoring Stations																
7	Port of LA: Outer Harbor	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C, 083D, & 092D		
8	Port of LA: Wilmington	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C, 083D, & 092D		
9	Port of LB: Inner Port	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C, 083D, & 092D		
10	Port of LB: Outer Port	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C, 083D, & 092D		
11	Port of LA: Terminal Island	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C, 083D, & 092D		
12	Port of LA: San Pedro	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C, 083D, & 092D		

Appendix A-12: Tesoro-Wilmington Refinery with South Coast and Community Air Monitoring Stations Map

Appendix A-12: Tesoro-Wilmington Refinery with South Coast and Community Air Monitoring Stations Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
SCAQMD Air Monitoring Stations																
2	South Long Beach	1305 E. Pacific Coast Hwy.						Anderson SA1200	Met One BAM 1020	Anderson 300						GMW 2000
3	North Long Beach	3648 N. Long Beach Blvd.							Met One BAM 1020	Anderson RAAS 2.5-300						
4	Compton	700 North Bullis Rd.	TECO 49, 49C, 49i	TECO 42, 42C, 42i			Horiba APMA-370	Tisch 6070		Anderson RAAS						GMW 2000

Appendix A-12: Tesoro-Wilmington Refinery with South Coast and Community Air Monitoring Stations Table (cont'd)

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
San Pedro Bay Port's Community Air Monitoring Stations																
7	Port of LA: Outer Harbor	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D, & 092D		
8	Port of LA: Wilmington	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D, & 092D		
9	Port of LB: Inner Port	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D, & 092D		
10	Port of LB: Outer Port	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D, & 092D		
11	Port of LA: Terminal Island	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D, & 092D		
12	Port of LA: San Pedro	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D, & 092D		

Appendix A-13: Valero-Wilmington Refinery with South Coast and Community Air Monitoring Stations Map

Appendix A-13: Valero-Wilmington Refinery with South Coast and Community Air Monitoring Stations Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
SCAQMD Air Monitoring Stations																
2	South Long Beach	1305 E. Pacific Coast Hwy.						Anderson SA1200	Met One BAM 1020	Anderson 300						GMW 2000
3	North Long Beach	3648 N. Long Beach Bl.							Met One BAM 1020	Anderson RAAS 2.5-300						
4	Compton	700 North Bullis Rd.	TECO 49, 49C, 49i	TECO 42, 42C, 42i			Horiba APMA-370	Tisch 6070		Anderson RAAS						GMW 2000

Appendix A-13: Valero-Wilmington Refinery with South Coast and Community Air Monitoring Stations Table (cont'd)

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
San Pedro Bay Port's Community Air Monitoring Stations																
7	Port of LA: Outer Harbor	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D,& 092D		
8	Port of LA: Wilmington	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D,& 092D		
9	Port of LB: Inner Port	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D,& 092D		
10	Port of LB: Outer Port	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D,& 092D		
11	Port of LA: Terminal Island	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D,& 092D		
12	Port of LA: San Pedro	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C,083D,& 092D		

Appendix A-14: Paramount Petroleum-Paramount Refinery with South Coast Air Monitoring Stations Map

Appendix A-14: Paramount Petroleum-Paramount Refinery with South Coast Air Monitoring Stations Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
SCAQMD Air Monitoring Stations																
1	Anaheim - Loara School	1630 Pampas Ln.	TECO 49, 49C, 49i	Teledyne 200E			Horiba APMA-370	SA 1200 & BAM 1020	Met One BAM 1020	Anderson RAAS						
2	South Long Beach	1305 E. Pacific Coast Hwy.						Anderson SA1200	Met One BAM 1020	Anderson 300						GMW 2000
3	North Long Beach	3648 N. Long Beach Blvd.							Met One BAM 1020	Anderson RAAS 2.5-300						
4	Compton	700 North Bullis Rd.	TECO 49, 49C, 49i	TECO 42, 42C, 42i			Horiba APMA-370	Tisch 6070		Anderson RAAS						GMW 2000
6	La Habra	621 W. Lambert Rd.	TECO 49, 49C, 49i	TECO 42, 42C, 42i			Horiba APMA-360									

Appendix A-15: Tesoro-Carson Refinery with South Coast and Community Air Monitoring Stations Map

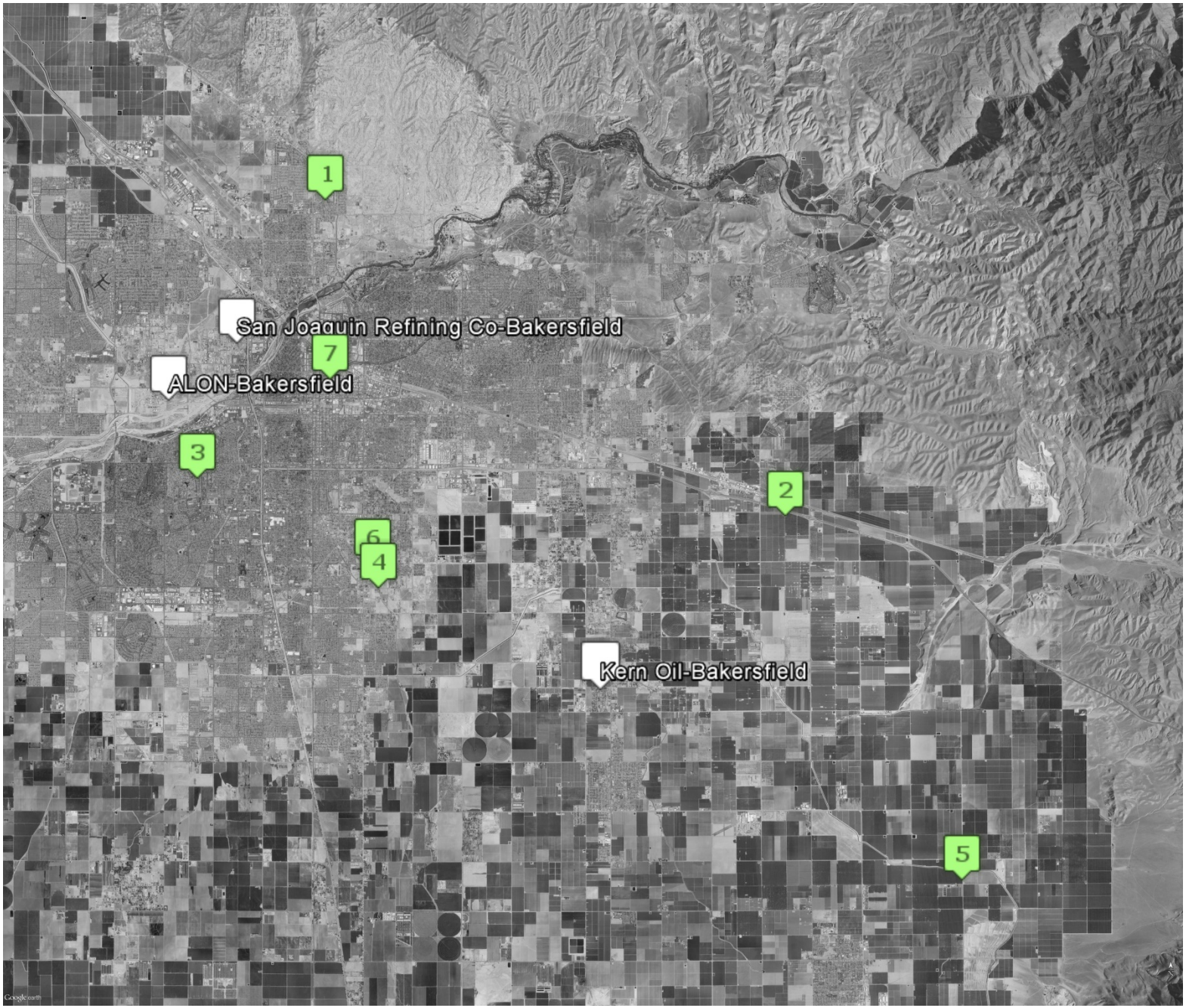
Appendix A-15: Tesoro-Carson Refinery with South Coast and Community Air Monitoring Stations Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
SCAQMD Air Monitoring Stations																
2	South Long Beach	1305 E. Pacific Coast Hwy.						Anderson SA1200	Met One BAM 1020	Anderson 300						GMW 2000
3	North Long Beach	3648 N. Long Beach Blvd.							Met One BAM 1020	Anderson RAAS 2.5-300						
4	Compton	700 North Bullis Rd.	TECO 49, 49C, 49i	TECO 42, 42C, 42i			Horiba APMA-370	Tisch 6070		Anderson RAAS						GMW 2000

Appendix A-15: Tesoro-Carson Refinery with South Coast and Community Air Monitoring Stations Table (cont'd)

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
San Pedro Bay Port's Community Air Monitoring Stations																
7	Port of LA: Outer Harbor	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C, 083D, & 092D		
8	Port of LA: Wilmington	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C, 083D, & 092D		
9	Port of LB: Inner Port	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C, 083D, & 092D		
10	Port of LB: Outer Port	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C, 083D, & 092D		
11	Port of LA: Terminal Island	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C, 083D, & 092D		
12	Port of LA: San Pedro	N/A	Thermo 49i	Thermo 42i		Thermo 43i	Thermo 48i	Met One BAM 1020	Met One BAM 1020					Met One 010C, 020C, 083D, & 092D		

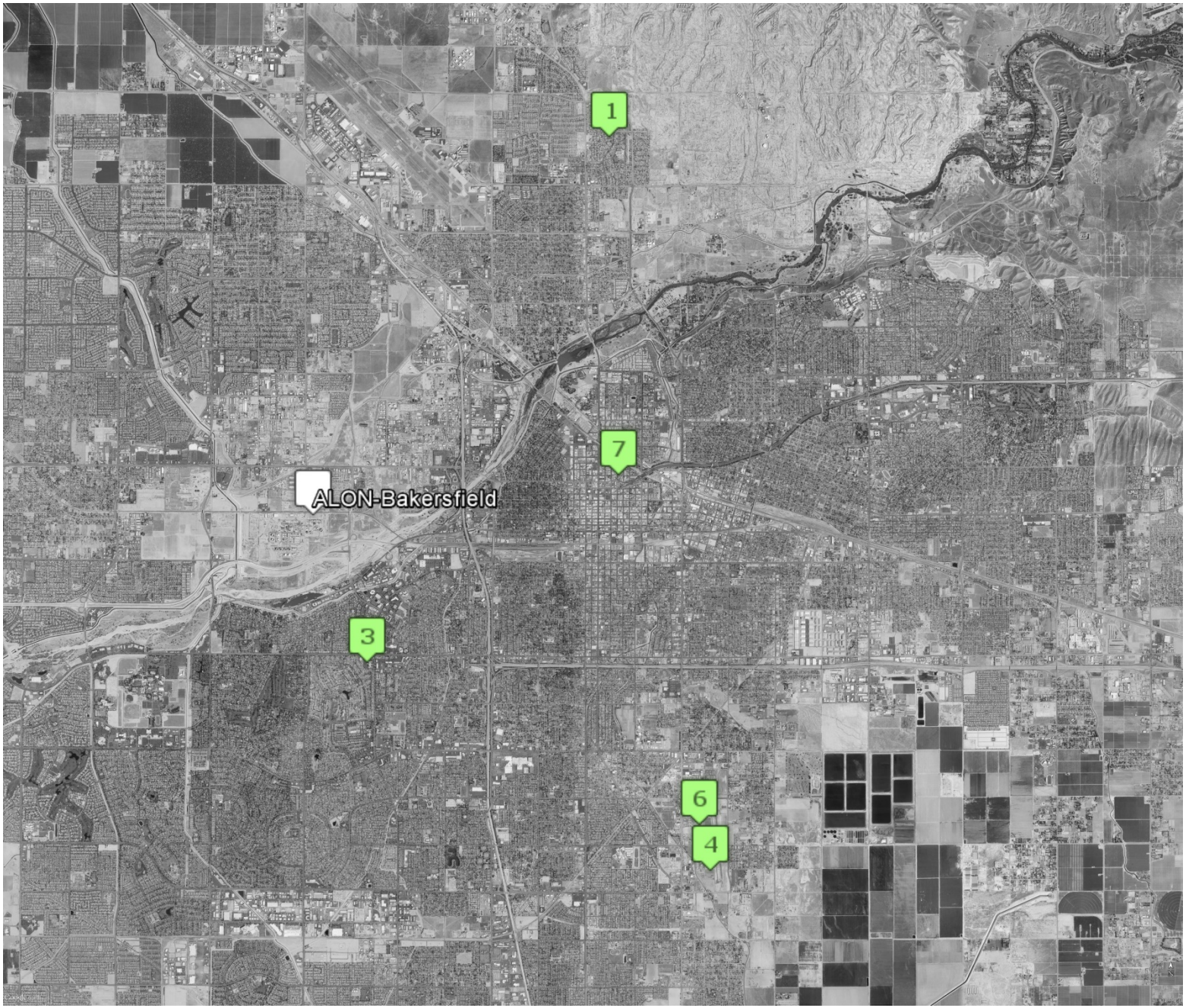
Appendix A-16: San Joaquin Valley Refinery and Air Monitoring Stations Overview Map



Appendix A-16: San Joaquin Valley Refinery and Air Monitoring Stations Overview Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
California Air Resources Board Air Monitoring Stations																
1	Oildale	3311 Manor St.	Teledyne 400					Sierra Anderson 1200								
2	Edison	Johnson Farm-Shed Rd.	Teledyne 400	Teledyne 200E										Met One: 060A-2, 020-C, & 010-C		
3	Bakersfield - California Ave.	5558 California Ave.	Teledyne 400	Teledyne 200E				Met One BAM 1020	Met One BAM 1020	R & P 2025i						
4	Bakersfield - Airport	401 E. Planz Rd.								Thermo 2025i						
5	Arvin - Di Giorgio		Teledyne 400											Met One: 060A-2, 020-C, & 010-C		
SJVAPCD Air Monitoring Stations																
6	Bakersfield - Municipal Airport	2000 S. Union Ave.	Teledyne 400	Teledyne 200E			Thermo 48i TLE				XonTech 910/912/ 925 (VOC)			Met One: 060A-2, 020-C, 010-C, & 092		
7	Bakersfield - Golden	2820 M St.						Sierra Anderson 1200		R & P 2025i						

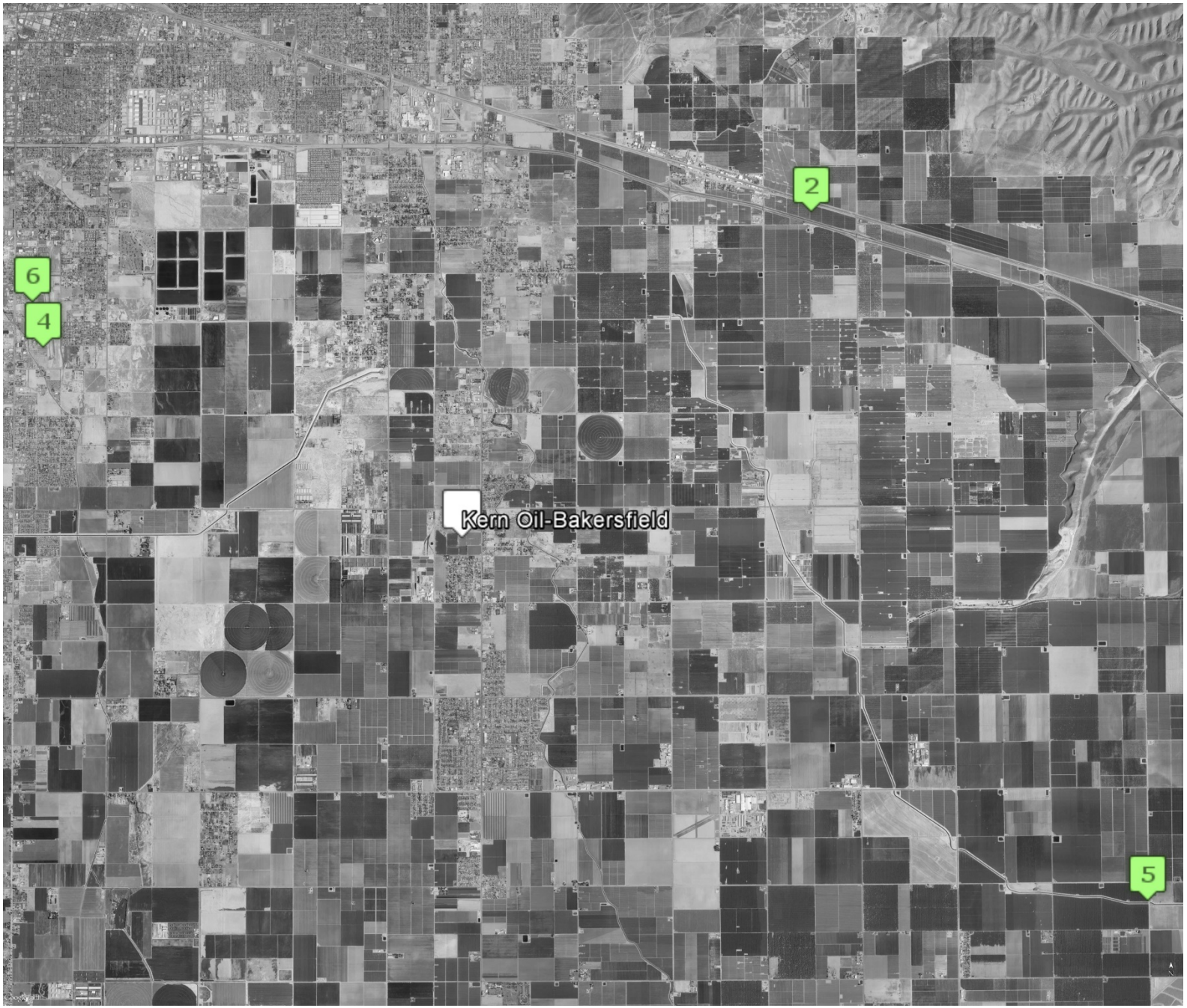
Appendix A-17: Alon-Bakersfield Refinery with San Joaquin Valley Air Monitoring Stations Map



Appendix A-17: Alon-Bakersfield Refinery with San Joaquin Valley Air Monitoring Stations Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
California Air Resources Board Air Monitoring Stations																
1	Oildale	3311 Manor St.	Teledyne 400					Sierra Anderson 1200								
3	Bakersfield - California Ave.	5558 California Ave.	Teledyne 400	Teledyne 200E				Met One BAM 1020	Met One BAM 1020	R & P 2025i						
4	Bakersfield - Airport	401 E. Planz Rd.								R & P 2025i						
SJVAPCD Air Monitoring Stations																
6	Bakersfield - Municipal Airport	2000 S. Union Ave.	Teledyne 400	Teledyne 200E			Thermo 48i TLE				XonTech 910/912 /925 (VOC)			Met One: 060A-2, 020-C, 010-C, & 092		
7	Bakersfield - Golden	2820 M St.						Sierra Anderson 1200		R & P 2025i						

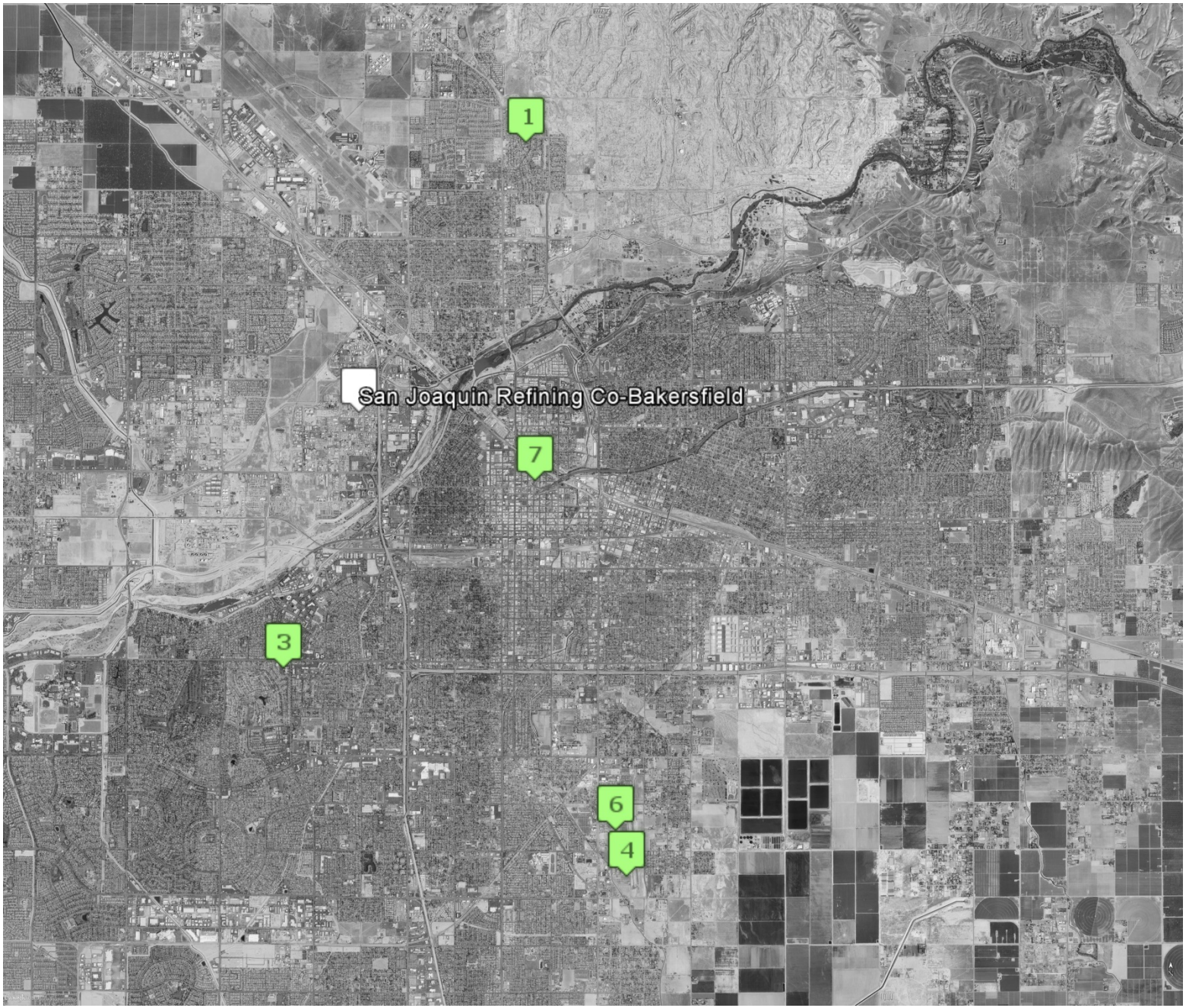
Appendix A-18: Kern Oil-Bakersfield Refinery with San Joaquin Valley Air Monitoring Stations Map



Appendix A-18: Kern Oil-Bakersfield Refinery with San Joaquin Valley Air Monitoring Stations Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
California Air Resources Board Air Monitoring Stations																
2	Edison	Johnson Farm-Shed Rd.	Teledyne 400	Teledyne 200E										Met One: 060A-2, 020-C, & 010-C		
4	Bakersfield - Airport	401 E. Planz Rd.								R & P 2025i						
5	Arvin - Di Giorgio		Teledyne 400											Met One: 060A-2, 020-C, & 010-C		
SJVAPCD Air Monitoring Stations																
6	Bakersfield - Municipal Airport	2000 S. Union Ave.	Teledyne 400	Teledyne 200E			Thermo 48i TLE				XonTech 910/912/ 925 (VOC)			Met One: 060A-2, 020-C, 010-C, & 092		

Appendix A-19: San Joaquin Refining Co.-Bakersfield Refinery with San Joaquin Valley Air Monitoring Stations Map



Appendix A-19: San Joaquin Refining Co.-Bakersfield Refinery with San Joaquin Valley Air Monitoring Stations Table

			Criteria Pollutants								Toxics					
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**	**MET**	**NH_3**	**TSP**
California Air Resources Board Air Monitoring Stations																
1	Oildale	3311 Manor St.	Teledyne 400					Sierra Anderson 1200								
3	Bakersfield - California Ave.	5558 California Ave.	Teledyne 400	Teledyne 200E				Met One BAM 1020	Met One BAM 1020	R & P 2025i						
4	Bakersfield - Airport	401 E. Planz Rd.								R & P 2025i						
SJVAPCD Air Monitoring Stations																
6	Bakersfield - Municipal Airport	2000 S. Union Ave.	Teledyne 400	Teledyne 200E			Thermo 48i TLE				XonTech 910/912/ 925			Met One: 060A-2, 020-C, 010-C, & 092		
7	Bakersfield - Golden	2820 M St.						Sierra Anderson 1200		R & P 2025i						

Appendix A-20: Phillips 66-Santa Maria Refinery with San Luis Obispo Air Monitoring Stations Map

Appendix A-20: Phillips 66-Santa Maria Refinery with San Luis Obispo Air Monitoring Stations Table

			Criteria Pollutants								Toxics			MET	NH_3	TSP
Placemark #	**Station**	**Address**	**O_3**	**NO_x**	**NO_y**	**SO_2**	**CO**	**PM_{10} Filter**	**$PM_{2.5}$ Filter**	**$PM_{2.5}$ Cont.**	**Toxics**	**H_2S**	**Black Carbon**			
SLOAPCD Air Monitoring Stations																
1	CDF - Arroyo Grande	2391 Willow Rd.						Met One BAM 1020	Met One BAM 1020							
2	Nipomo - Guadalupe Road	1300 Guadalupe Rd.						Met One BAM 1020	Met One BAM 1020		Teledyne 100E			Met One 060A-2		
3	Nipomo - Regional Park	W. Tefft St & Pomeroy Rd.	Teledyne 400	Teledyne 200A				Met One BAM 1020						Met One 060A-2		
California Air Resources Board Air Monitoring Stations																
4	Santa Maria	906 S. Broadway St.						Met One BAM 1020	Met One BAM 1020							

Appendix B

Monitoring Instrument Descriptions

1. Bay Area Resources
2. South Coast Resources
3. San Joaquin Valley Resources
4. San Luis Obispo County Resources
5. State and Federal Resources

1. Bay Area Resources

Instrument	Purpose	Type	Interval	Information
BAAQMD Emergency Response Monitoring Instrumentation[1]				
2Btech Model 202	O_3	Field Portable	Near Real-time	http://www.twobtech.com/
2Btech Model 400	NO	Field Portable	Near Real-time	http://www.twobtech.com/
Davis Weather Envoy	Meteorology	Field Portable	Near Real-time	http://www.davisnet.com/weather/products/weather_product.asp?pnum=06316
DRI mini-photo acoustic	Black Carbon	Field Portable	Near Real-time	
Forward Looking Infrared Cameras	Thermal Imaging/VOC	Hand-held	Real-time	http://www.flir.com/US/
LiCor Monitor	CO_2	Field Portable	Near Real-time	http://www.licor.com/env/products/gas_analysis/LI-820/
Ogawa Passive Sampler	Inorganic	Hand-held	Requires Lab Analysis	http://ogawausa.com/passive-sampler/
ppbRAE 3000	VOC	Hand-held	Real-time	http://www.raesystems.com/products/ppbrae-3000
SUMMA® Canister	VOC	Hand-held	Requires Lab Analysis	http://SUMMAcanister.com/
TEI model 48	CO_2	Field Portable	Near Real-time	http://www.thermoscientific.com/en/product/model-48-i-i-i-hl-co-analyzer.html
TSI DustTrak II 8530	Particulates	Hand-held	Real-time	http://www.tsi.com/dusttrak-ii-aerosol-monitor-8530/
TSI model 3007 CPC	Particulates	Hand-held	Real-time	http://www.tsi.com/condensation-particle-counter-3007/
BAAQMD Emergency Response Equipment[1]				
Garmin GPS-16	Communications and Equipment	Hand-held	Real-time Communications	http://static.garmincdn.com/pumac/GPS16x_Technical Specifications.pdf
Multiple Measurement Vehicle	Communications and Equipment	Mobile Bus	Near Real-time	

1. Bay Area Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
Contra Costa County Hazardous Materials Program Monitoring Equipment[2]				
AreaRAE	Chemical	Field Portable	Real-time	http://www.raesystems.com/products/arearae-steel
AreaRAE WeatherPak	Meteorology	Field Portable	Real-time	http://www.raegasdetection.com/index.cfm/product/302/weatherpak.cfm
Dissolved Oxygen Meter	O_2	Hand-held	Real-time	http://hannainst.com/usa/subcat.cfm?id=004
Draeger detector tube kit	VOC, Chemical	Hand-held	Near Real-time	http://www.draeger.com/sites/enus_us/Pages/Oil-Gas-Industry/Draeger-Sampling-Tubes-and-Systems.aspx?navID=2195
Gasbadge	CL_2, SO_2, NH_3, PH_3	Hand-held	Real-time	http://www.indsci.com/docs/literature/GasBadgePro_Lit_Pr.pdf
GasTech GT-402	LEL, O_2, H_2S, CO	Hand-held	Real-time	http://www.gastech.com.au/products
TIF-1A Refrigerant Leak Detector	Halogen, Chemical	Hand-held	Real-time	http://www.tif.com/products/popular.php
Inspectair 8560	CO_2	Hand-held	Real-time	http://www.tsi.com/inspectair-co2-meter-8560/
Industrial Scientific ITX	LEL, O_2, H_2S, CO	Hand-held	Real-time	http://www.indsci.com/products/retirement/
Jerome 405J	Mercury Vapor	Hand-held	Real-time	http://www.thermofisher.com.au/Uploads/file/Environmental-Industrial/Environmental-Monitoring-Safety/Industrial-Hygiene-Instruments/Jerome-J405-Mercury-Vapour-Analyser.pdf
Jerome 631X	H_2S	Hand-held	Real-time	http://fieldenvironmental.com/jerome-631-x-h2s-analyzer.php
JUNO	Chemical	Hand-held	Real-time	http://www.chemringds.com/Products/ChemicalDetection/JUNO1/
Kestrel 3000	Meteorology	Hand-held	Real-time	http://www.nkhome.com/kestrel/
Industrial Scientific MX6	VOC, LEL	Hand-held	Real-time	http://www.indsci.com/products/multi-gas-detectors/mx6/
SUMMA® Canister (silica)	VOC	Hand-held	Requires Lab Analysis	http://www.epa.gov/region6/6pd/rcra_c/ca/canister.html

1. Bay Area Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
Contra Costa County Hazardous Materials Program Monitoring Equipment (cont'd)[2]				
Kestrel Pocket Weather Meter	Windspeed, Temperature	Hand-held	Real-time	http://kestrelmeters.com/
SUMMA® Canister	VOC	Hand-held	Requires Lab Analysis	http://SUMMAcanister.com/
UltraRAE 3000	Benzene, VOC	Hand-held	Near Real-time	http://www.raesystems.com/products/ultrarae-3000
Weatherpak	Meteorology	Field Portable	Real-time	http://www.coastalenvironmental.com/weatherpak-weather-station.shtml
San Ramon Valley Fire Hazmat Monitoring Equipment[3]				
Gasbadge	CL_2, SO_2, NH_3	Hand-held	Real-time	http://www.indsci.com/products/single-gas-detectors/GasBadgePro/
Industrial Scientific MX6 (2)	VOC, Chemical	Hand-held	Real-time	http://www.indsci.com/products/multi-gas-detectors/mx6/
Industrial Scientific ITX (6)	Chemical	Hand-held	Real-time	http://www.activeforever.com/content/manuals/iTX-Multi-Gas-Monitor-Manual.pdf
Richmond Fire Department Monitoring Equipment[4]				
Industrial Scientific MX6	VOC, Chemical	Hand-held	Real-time	http://www.indsci.com/products/multi-gas-detectors/mx6/
Industrial Scientific ITX	Chemical	Hand-held	Real-time	http://www.activeforever.com/content/manuals/iTX-Multi-Gas-Monitor-Manual.pdf
Jerome 631X	Hydrogen Sulfide	Hand-held	Real-time	http://fieldenvironmental.com/jerome-631-x-h2s-analyzer.php
TIF-1A Refrigerant Leak Detector	VOC, Chemical	Hand-held	Real-time	http://www.tif.com/products/refrigerant_leak_detector_TIFXP-1A
Shell-Martinez				
Gastec Polytec III detector tube kit	NH_3, H_2S, SO_2, SO_4, NO_2, Hydrocarbon	Hand-held	Near Real-time	http://www.gastec.co.jp/english/products/frame.php?place=seihin/c1.htm

1. Bay Area Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
Tesoro-Martinez				
UltraRAE 3000	Benzene, VOC	Hand-held	Real-time	http://www.raesystems.com/products/ultrarae-3000
Jerome 405J (2)	Mercury Vapor	Field Portable	Real-time	http://www.thermofisher.com.au/Uploads/file/Environmental-Industrial/Environmental-Monitoring-Safety/Industrial-Hygiene-Instruments/Jerome-J405-Mercury-Vapour-Analyser.pdf
Medium Flow air sampling pump (2)	Particulates, Metals	Field Portable	Requires Lab Analysis	Used with plastic cassettes to measure particulate and metals etc.
Low Flow air sampling pump (4)	Unknowns	Field Portable	Requires Lab Analysis	Used with charcoal or silica gel tubes. Lab analysis required
Industrial Scientific MX4 (9)	CO, O_2, LEL, H_2S	Field Portable	Real-time	http://www.indsci.com/products/multi-gas-detectors/ventis/
Industrial Scientific MX6 (7)	CO, O_2, LEL, H_2S, SO_2, NH_3	Field Portable	Real-time	http://www.indsci.com/products/multi-gas-detectors/mx6/
Ground Level Monitors (4)	H_2S, SO_2	Fixed at 4 locations	Real-time	Also operate a weather station to measure wind speed and direction on a real time basis.
Phillips 66-Rodeo				
AreaRae	H_2S, LEL, CO, O_2, VOCs	Field Portable	Near Real-time	Raesystems.com
Jerome 631-X	H_2S	Field Portable	Near Real-time	azic.com
MultiRae+	H_2S, SO_2, LEL, CO, O_2, VOCs	Field Portable	Near Real-time	Raesystems.com
TSI DustTrak	Particulates	Field Portable	Near Real-time	TSI.com

1. Bay Area Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
Chevron - Richmond				
Industrial Scientific MX6	VOC, Chemical	Hand-held	Real-time	http://www.indsci.com/products/multi-gas-detectors/mx6/
Industrial Scientific ITX	Chemical	Hand-held	Real-time	http://www.activeforever.com/content/manuals/iTX-Multi-Gas-Monitor-Manual.pdf

1. South Coast Resources

Instrument	Purpose	Type	Interval	Information
SCAQMD Emergency Response Monitoring Instrumentation				
BGI PQ 100 and PQ 200	PM	Field Portable	Filter sampler	http://www.bgiusa.com/
Met One EBAM	PM	Field Portable	Near Real-time	http://www.metone.com/
TSI Dustrak	PM	Handheld - Portable	Real-Time	http://www.tsi.com/
Jerome H2S monitors	H_2S	Handheld	Real-Time	http://www.azic.com/products.aspx
SKC Syringe style bag samplers	VOC sampling	Handheld VOC grab-sample capture	Instantaneous	http://www.skcinc.com/prod/231-945.asp
Evacuated Canister	VOC	VOC grab-sample capture	Instantaneous	http://www.entechinst.com/
Mobile air monitoring trailer	Multiple Analytes	Mobile trailer	Varies	
Portable GC/MS	VOC	Backpack/ Cart	Near Real Time	http://www.inficon.com/
FLIR Camera	VOC	Handheld - Portable	Real-Time	http://www.flir.com/US/
Photoionization Detector (PID)	VOC	Handheld - Portable	Real-Time	http://www.raesystems.com/

2. South Coast Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
SCAQMD Emergency Response Monitoring Instrumentation (cont'd)				
Four Gas Analyzer	Varies	Handheld - Portable	Real-Time	http://www.lifecominc.com/
Organic Vapor Analyzer	VOC	Handheld - Portable	Near Real Time	http://www.thermofisher.com/en/home.html
Lung Sampler/ Tedlar® Bags	Sulfur	Handheld - Portable	Time Integrated	http://www.skcwest.com/
Draeger Tube	Varies	Handheld - Portable	Near Real Time	http://www.skcwest.com/
Deposition Plate	Varies	Portable	Time Integrated	
El Segundo Fire Department				
Thermo Scientific TVA 1000	VOC	Field Portable	Real-time	http://www.thermoscientific.com/en/product/tva1000b-toxic-vapor-analyzer.html
MSA Altair 5	Flammables	Field Portable	Real-time	http://www.msanet.com/altair5x/intro.html
Draeger detector tube kit	Inorganic	Hand-held	Real-time	http://www.draeger.com/sites/enus_us/Pages/Oil-Gas-Industry/Draeger-Sampling-Tubes-and-Systems.aspx?navID=2195
Valero-Wilmington				
Industrial Scientific ATX 612	H_2S, CO	Field Portable	Near Real-time	http://www.indsci.com/
Quest Safecheck SC100	H_2S	Field Portable	Near Real-time	http://gasdetectors.conceptcontrols.com/viewitems/personal-single-gas-monitors/safecheck-100-single-gas-monitors
RKI Eagle	H_2S, HF, CO	Field Portable	Near Real-time	http://www.rkiinstruments.com/pages/eagle2.htm

2. South Coast Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
Valero-Wilmington (cont'd)				
Draeger detector tube kit	Various chemicals	Hand-held	Near Real-time	http://www.draeger.com/sites/enus_us/Pages/Oil-Gas-Industry/Draeger-Sampling-Tubes-and-Systems.aspx?navID=2195
MultiRAE Plus	Total HC, Benzene	Hand-held	Near Real-time	http://www.raesystems.com/products/multirae-family
Hnu 201B	Total HC	Field Portable	Near Real-time	http://www.hnu.com/pdf/continuous/Model201BPIDFIDNDUV807.pdf
MiniRAE Plus	Total HC	Hand-held	Near Real-time	http://www.raesystems.com/products/portable-detection/multi-gas
Draeger detector tube kit	Benzene	Hand-held	Near Real-time	http://www.draeger.com/sites/enus_us/Pages/Oil-Gas-Industry/Draeger-Sampling-Tubes-and-Systems.aspx?navID=2195
Hnu 311	Benzene	Field Portable	Near Real-time	http://www.hnu.com/secure/product_notes/311ProductNote.htm
TSI Q-Trak	CO	Field Portable	Near Real-time	http://www.tsi.com/q-trak-indoor-air-quality-monitor-7565/
MIE Miniram (for comparison to nuisance dust standard)	Catalysts (metals), Refractory Fiber (Alumino-silicate Fiber)	Field Portable	Near Real-time	http://bostonchemicaldata.com/miniramspecs.pdf
Field microscope for airborne fibers (for comparison to NIOSH REL)	Refractory Fiber (Alumino-silicate Fiber)	Field Portable	Near Real-time	
Field microscope for airborne fibers (PCM); Filter media and air sampling pump	Asbestos	Field Portable	Near Real-time	
PID, FID (limited applications, qualitative only); Sorbent tube media with air sampling pump	PNA's (Polynuclear Aromatic Hydrocarbons), Mercury Vapor, (as Hg), Naphthalene, Phenol	Field Portable	Near Real-time	
Interscan 4000 (Rental Required)	Formaldehyde	Field Portable	Near Real-time	http://www.gasdetection.com/
Interscan TGA 1000 Series (Rental Required)	Hydrogen Cyanide	Field Portable	Near Real-time	http://www.gasdetection.com/

2. South Coast Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
Valero-Wilmington (cont'd)				
Jerome 411	Mercury Vapor	Field Portable	Near Real-time	http://www.azic.com/downloads/manuals/ss-101%20(jerome)%20411%20mercury%20vapor%20analyzer%20user's%20manual.pdf
Sorbent tube media with air sampling pump	Naphthalene	Hand-held	Near Real-time	
Chevron-El Segundo				
MSA Altair 4x (5)	H_2S, O_2, CO, LEL	Field Portable	Real-time	http://www.msanet.com/altair5x/intro.html
MSA Sirius	VOC, H_2S, CO, LEL, O_2	Field Portable	Real-time	http://www.5alarm.com/pdf/Products/Fire/HazMat-instrumentation/MSA-SiriusMultigasDetector.pdf
TSI P-Trak	Fine Particulates	Hand-held	Real-time	http://www.tsi.com/p-trak-ultrafine-particle-counter-8525/
UltraRAE 3000	Benzene, VOC	Hand-held	Real-time	http://www.raesystems.com/products/ultrarae-3000
Photo-Vac Pro PID	VOC	Hand-held	Real-Time	
Dräger CMS (2)	Benzene, Ozone	Hand-held	Near Real-Time	http://www.draeger.com/sites/enus_us/Pages/Chemical-Industry/Draeger-Chip-Measurement-System.aspx
Dräger Accuro 2000	Benzene, H_2S, SO_2, NH_3, CO_2, Mercury, Oil Mist, Formaldehyde, Mercaptan	Hand-held	Grab Sample	http://www.draeger.com/sites/enus_us/Pages/Mining/Draeger-Tube-pump-accuro.aspx
MSA Altair 2x (2)	H_2S/SO_2, H_2S/CO	Field Portable	Real-Time	http://us.msasafety.com/Portable-Gas-Detection/Single-or-Two-Gas/ALTAIR%C2%AE-2X-Gas-Detector/p/000080000200001600
MSA Altair 5x	NH_3, SO_2, H_2S, LEL, O_2, CO	Hand-held	Real-Time	http://us.msasafety.com/Portable-Gas-Detection/Multi-Gas/ALTAIR%26reg%3B-5X-Multigas-Detector/p/000080001600001023
Air Sampling Pumps	Particulates, Fibers, Metals, etc.	Field Portable	Requires Laboratory Analysis	Used with plastic filter cassettes to measure particulate, metals, etc.
TSI Dust Trak	Particulates	Field Portable	Real-time	

2. South Coast Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
ExxonMobil-Torrance (ExxonMobil has requested proprietary treatment of all submitted information pertaining to the Company's Torrance Refinery)				
Phillips 66-Wilmington				
BW Gas Alert	SO_2	Personal Monitor	Real-time	http://www.honeywellanalytics.com/en/products/GasAlertClip-Extreme
BW Gas Alert	H_2S	Personal Monitor	Real-time	http://www.honeywellanalytics.com/en/products/GasAlertClip-Extreme
Industrial Scientific iTx	CO_2	Hand-held	Real-time	http://www.indsci.com/Product_Details2.aspx?id=8430
Industrial Scientific iTx	O_2, LEL, SO_2, H_2S, CO_2	Hand-held	Real-time	http://www.activeforever.com/content/manuals/iTX-Multi-Gas-Monitor-Manual.pdf
Industrial Scientific iTx	NH_3	Hand-held	Real-time	http://www.activeforever.com/content/manuals/iTX-Multi-Gas-Monitor-Manual.pdf
Draeger air sampling pump	Various chemicals	Hand-held	Grab Sample	http://www.draeger.com/sites/en_uk/Pages/Chemical-Industry/Draeger-Tube-pump-accuro.aspx?navID=702
Bag Sample 3rd Party Gas Chromatograph	Various chemicals	Hand-held	Grab Sample	http://www.skcinc.com/bags.asp
UltraRAE 3000	Benzene, VOC	Hand-held	Real-time	http://www.raesystems.com/products/ultrarae-3000
Los Angeles County Fire Department				
Thermo Fisher TLV Sniffer	Combustible gas	Field Portable	Real-time	http://www.thermofisher.com.au/show.aspx?page=/ContentAus/Top-Menu/Rentals/Gas-And-Air/TLV-Sniffer.html
MultiRAE Plus	H_2S, CO, VOC, LEL, O_2	Hand-held	Real-time	http://www.raesystems.com/products/multirae-plus
MultiRAE Lite	O_2, LEL, H_2S, CO, SO_2, VOC	Hand-held	Real-time	http://www.raesystems.com/products/multirae-lite
Draëger CMS	Various Chips	Hand-held	Near Real-time	http://www.draeger.com/sites/enus_us/Pages/Chemical-Industry/Draeger-Chip-Measurement-System.aspx

2. South Coast Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
Paramount Petroleum-Paramount				
BW Gas Alert Micro 5	O_2, LEL, H_2S, CO, PID, SO_2, NH_3	Hand-held	Near Real-Time	https://www.honeywellanalytics.com/Technical%20Library/AP/Micro5/Manuals/GAMicro5_Manual%28D5615-1-EN%29.pdf
BW Gas Alert Max	O_2, LEL, H_2S, CO	Hand-held	Near Real-Time	http://site.jjstech.com/pdf/GasAlertMax_Manual.pdf
RKI Eagle	O_2, LEL, H_2S, CO	Hand-held	Near Real-Time	http://rkiinstruments.com/pages/eagle2.htm
Industrial Scientific iTX	O_2, LEL, H2S, CO, SO_2, NH_3	Hand-held	Near Real-Time	http://www.indsci.com/products/retirement/
Industrial Scientific MX6	O_2, LEL, H_2S, CO, PID	Hand-held	Near Real-Time	http://www.indsci.com/products/multi-gas-detectors/mx6/
Industrial Scientific M40	O_2, LEL, H_2S, CO	Hand-held	Near Real-Time	http://www.indsci.com/products/retirement/
MSA Altair	H_2S	Personal Monitor	Near Real-Time	http://us.msasafety.com/Portable-Gas-Detection/Single-Gas/ALTAIR%26reg%3B-Single-Gas-Detector/p/000080000200001010
Torrance Fire Department Hazmat Emergency Response				
Gastech GTX 1314	O_2, PPM, LEL	Hand-held	Real-time	http://www.rkiinstruments.com/pages/gastech.htm
RKI Eagle	O_2, PPM, LEL, HF, NH_3, CO, H_2S	Hand-held	Real-time	http://www.rkiinstruments.com/pages/eagle.htm
MiniRAE 2000	Isobutylene	Hand-held	Real-time	http://www.raegasdetection.com/index.cfm?fuseaction=product.display&poduct_id=19
MultiRAE Plus	LEL, VOC, SO_2, CL_2 O_2	Hand-held	Real-time	http://www.raesystems.com/products/multirae-plus
Sensidyne detector tube kit	Various chemicals	Hand-held	Real-time	http://www.sensidyne.com/colorimetric-gas-detector-tubes/accessories/
Draeger detector tube kit	Various chemicals	Hand-held	Real-time	http://www.dragersafetyusa.com/c-193-tubes-a-to-b.aspx

2. South Coast Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
Los Angeles City Fire Department				
Draeger X-am 7000	O_2, CO, H_2S, LEL	Field Portable	Real-time	http://www.draeger.com/sites/enus_us/Pages/Mining/Draeger-X-am-7000.aspx
Draeger X-am 5000	O_2, CO, H_2S, LEL	Field Portable	Real-time	http://www.draeger.com/sites/enus_us/Pages/Mining/Draeger-X-am-5000.aspx
ppbRAE 3000	VOC	Field Portable	Real-time	http://www.raesystems.com/products/ppbrae-3000
Draeger CMS	Various chemicals	Field Portable	Real-time	http://www.draeger.com/sites/enus_us/Pages/Chemical-Industry/Draeger-Chip-Measurement-System.aspx
Bruker Hawk	Various chemicals	Field Portable	Near Real-time	http://emailwire.com/release/11931-Bruker-Daltonics-Announces-new-HAWK-FR-Standoff-Detector-with-120-Degree-Scanner-for-Chemical-Agent-Detection-in-Homeland-Security-Applications.html
Tesoro-Carson				
Industrial Scientific MX4 (8)	SO_2, H_2S, LEL, O_2	Field Portable	Real-time	http://www.indsci.com/products/multi-gas-detectors/ventis/
MiniRAE 2000 (2)	VOC	Hand-held	Real-time	http://www.raegasdetection.com/index.cfm?fuseaction=product.display&product_id=19
Jerome 405J	Mercury Vapor	Field Portable	Real-time	http://www.azic.com/products_jerome_j405.aspx
BW Gas Alert Micro 5	SO_2, H_2S, VOC, LEL, O_2	Field Portable	Real-time	http://www.honeywellanalytics.com/en-gb/products/GasAlertMicro-5-Series
BW Gas Alert Micro 5 (2)	VOC, H_2S, CO	Field Portable	Real-time	http://www.honeywellanalytics.com/en-gb/products/GasAlertMicro-5-Series
BW Gas Alert Micro 5	VOC, H_2S, SO_2	Field Portable	Real-time	http://www.honeywellanalytics.com/en-gb/products/GasAlertMicro-5-Series

2. South Coast Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
Tesoro-Carson (cont'd)				
Draeger X-AM 5000 (6)	SO_2, H_2S, CO	Field Portable	Real-time	http://www.draeger.com/sites/enus_us/Pages/Mining/Draeger-X-am-5000.aspx
Air sampling pump	VOCs, fibers, particulate	Hand-held	Requires Lab Analysis	
MultiRAE (3)	CO, H_2S, VOC, LEL, O_2	Field Portable	Real-time	http://www.raesystems.com/products/multirae-family
MultiRAE (2)	SO_2, LEL, VOC, O_2, H_2S	Field Portable	Real-time	http://www.raesystems.com/products/multirae-family
AreaRAE (2)	SO_2, LEL, O_2, VOC, H_2S	Field Portable	Real-time	http://www.raesystems.com/products/arearae-steel
Industrial Scientific MX6 (6)	CO, SO_2, LEL, O_2, H_2S, VOC	Hand-held	Real-time	http://www.indsci.com/products/multi-gas-detectors/mx6/
Industrial Scientific MX4 (30)	CO, H_2S, LEL, O_2	Field Portable	Real-time	http://www.indsci.com/products/multi-gas-detectors/ventis/
Industrial Scientific iTX (14)	CO, H_2S, LEL, O_2	Field Portable	Real-time	http://www.activeforever.com/content/manuals/iTX-Multi-Gas-Monitor-Manual.pdf

3. San Joaquin Valley Resources

Instrument	Purpose	Type	Interval	Information
SJVAPCD Emergency Response Monitoring Instrumentation				
Met One EBAM 9800	PM	Field Portable	Near Real-time	http://www.metone.com/
SUMMA® Canister	Gaseous Pollutant (speciated VOC/SOx)	Field Portable	Lab Analysis	http://SUMMAcanister.com/
Thermo Scientific TVA 1000	VOC	Handheld	Real-time	http://www.thermoscientific.com/en/product/tva1000b-toxic-vapor-analyzer.html
Multi-Gas Monitors	O_2, H_2S, LEL, CO	Handheld	Real-time	
Single Gas Monitor	H_2S	Handheld	Real-time	
High-Volume Samplers	PM, Asbestos, Metals	Field Sample	Lab Analysis	
Sensidyne Colorimetric Sample Tubes	VOC, H_2S, others	Field Sample	Real-time	http://www.sensidyne.com/colorimetric-gas-detector-tubes/detector-tubes/
Bakersfield Fire Department[5]				
AreaRAE	O_2, LEL, VOC, NH_3, CL_2	Field Portable	Real-time	http://www.raesystems.com/products/arearae-steel
Honeywell Monitors	CL_2, NH_3, and HCN	Hand-held	Real-time	http://honeywell.com/pages/home.aspx
WeatherPak	MET	Field Portable	Real time	www.coastalenvironmental.com
2Btech Model 202 Analyzer	Ozone	Field Portable	Near Real-time	www.twobtech.com
Area Rae	LEL H_2S Cl_2 PID	Field Portable	Near real time	www.raegasdetection.com
Area Rae	LEL NH_3 H_2S PID	Field Portable	Near real time	www.raegasdetection.com
Area Rae	LEL CL_2 Gamma H_2S PID	Field Portable	Near real time	www.raegasdetection.com
Area Rae	LEL NH_3 SO_2 Gamma H_2S PID	Field Portable	Near real time	www.raegasdetection.com
Rae Link Mesh	O_2 LEL H_2S CO	Field Portable	Near real time	www.raegasdetection.com

3. San Joaquin Valley Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
Bakersfield Fire Department (cont'd)[5]				
BW 4 gas monitors	O_2 LEL H_2S Co	Hand held	Real time	www.bw-gasmonitors.com
BW 4 gas monitors	O_2 LEL H_2S Co	Hand held	Real time	www.bw-gasmonitors.com
Rae Link Mesh	O_2 LEL H_2S CO	Field Portable	Near real time	www.raegasdetection.com
Multi Rae Lite Wireless	O_2 LEL H_2S CO PID	Field Portable	Near real time	www.raegasdetection.com
Kern Oil-Bakersfield[6]				
Draeger X-am 5000 (6)	LEL, O_2, CO, H_2S	Field Portable	Near Real-time	http://www.draeger.com/sites/enus_us/Pages/Mining/Draeger-X-am-5000.aspx
Kern County: Environmental Health Division[7]				
MSA Altair	LEL, O_2, H_2S, NH_3, PH, CL, CO	Field Portable	Real-time	http://us.msasafety.com/Portable-Gas-Detection/Single-or-Two-Gas/ALTAIR%26reg%3B-Single-Gas-Detector/p/000080000200001010
ppbRAE 3000	VOC	Hand-held	Real-time	http://www.raesystems.com/products/ppbrae-3000
Alon Bakersfield				
BW Gas Alert Micro 5	O_2, LEL, H_2S, CO, PID, SO2, NH_3	Field Portable	Near Real-time	http://www.bw-gasmonitors.com/xxyy-m5ir.html
RKI Eagle	O_2, LEL, H_2S, CO	Field Portable	Near Real-time	http://rkiinstruments.com/pages/eagle2.htm
MSA Altair	H_2S	Personal Monitor	Near Real-time	http://us.msasafety.com/Portable-Gas-Detection/Single-or-Two-Gas/ALTAIR%26reg%3B-Single-Gas-Detector/p/000080000200001010
Testo 350M	CO, O_2, NOx	Field Portable	Near Real-time	http://www.testo350.com/
Draeger air sampling pump	NH_3, H_2S, Benzene	Hand-held	Near Real-time	http://www.draeger.com/sites/en_uk/Pages/Chemical-Industry/Draeger-Tube-pump-accuro.aspx?navID=702

3. San Joaquin Valley Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
Kern County Fire Department				
MSA Altair 5x	O_2, LEL, H_2S, CO	Personal Monitor	Near Real-time	http://us.msasafety.com/Portable-Gas-Detection/Multi-Gas/ALTAIR%26reg%3B-5X-Multigas-Detector/p/000080001600001023;jsessionid=A6FD18B06DFC314E478573C551E464A1.worker1
Sirius® MultiGas Detector	O_2, LEL, H_2S, CO, VOC	Personal Monitor	Near Real-time	http://www.livoniafirefighters.com/docs/MSA%20Sirius%20Manual.pdf
MSA Altair 4x	H_2S, CO_2	Personal Monitor	Near Real-time	http://s7d9.scene7.com/is/content/minesafetyappliances/ALTAIR%204X%20Operating%20Manual%20-%20GB

4. San Luis Obispo Resources

Instrument	Purpose	Type	Interval	Information
SLOAPCD Emergency Response Monitoring Instrumentation				
EBAM (2)	$PM_{2.5}$, PM_{10}	Field Portable	Near Real-time	http://www.metone.com/documents/E-BAM_Datasheet_Rev_Aug09.pdf
EBAM EX-034	WS/WD	Field Portable	Near Real-time	http://www.metone.com/documents/E-BAM_Datasheet_Rev_Aug09.pdf
EBAM EX-593	RH	Field Portable	Near Real-time	http://www.metone.com/documents/E-BAM_Datasheet_Rev_Aug09.pdf
Industrial Scientific M40	LEL, CO, H_2S, O_2	Hand-held	Real-time	http://www.indsci.com/products/retirement/
Thermo Scientific TVA 1000B	PID, FID, Organic, Inorganic	Field Portable	Real-time	http://www.thermoscientific.com/en/product/tva1000b-toxic-vapor-analyzer.html
Kestral 1000/2000	WS, Temp	Hand-held	Real-time	http://kestrelmeters.com/
Draeger detector tube kit	Various chemicals	Hand-held	Real-time	http://www.draeger.com/sites/enus_us/Pages/Oil-Gas-Industry/Draeger-Sampling-Tubes-and-Systems.aspx?navID=2195
Phillips 66 Santa Maria				
Industrial Scientific MX6 (16)	LEL, SO_2, H_2S, O_2, VOC	Hand-held	Real-time	http://www.indsci.com/products/multi-gas-detectors/mx6/
Industrial Scientific MX6 (2)	NH_3, LEL, H_2S, O_2, VOC	Hand-held	Real-time	http://www.indsci.com/products/multi-gas-detectors/mx6/
MultiRAE (3)	LEL, SO_2, H_2S, O_2, VOC	Field Portable	Real-time	http://www.raesystems.com/products/multirae-family
UltraRAE (3)	Benzene, VOC	Field Portable	Real-time	http://www.raesystems.com/products/ultrarae-3000

4. San Luis Obispo Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
San Luis Obispo County Regional Hazardous Materials Response Team				
Industrial Scientific ITX	H_2S, LEL, CO, O_2, NH_3, Cl_2	Hand-held	Real-time	http://www.indsci.com/products/retirement/
Draeger detector tube kit	Various chemicals	Hand-held	Near Real-time	http://www.draeger.com/sites/enus_us/Pages/Oil-Gas-Industry/Draeger-Sampling-Tubes-and-Systems.aspx?navID=2195
ppbRAE 3000	VOC	Field Portable	Real-time	www.raesystems.com/products/ppbrae-3000
Amprobe ULD-300	Pressurized leak detection	Field Portable	Real-time	http://www.amprobe.com/amprobe/usen/environmental-test/ultrasonic-leak/uld-300.htm?PID=73435

5. State and Federal Resources

Instrument	Purpose	Type	Interval	Information
ARB Emergency Response Monitoring Instrumentation[8]				
AreaRAE (4)	O_2, LEL, VOC, NH_3, CL_2	Field Portable	Real-time	http://www.raesystems.com/products/arearae-steel
Casella Microdust (4)	$PM_{2.5}$, PM_{10}	Hand-held	Real-time	http://www.casellausa.com/store/product.cfm?pID=7C504B4241127951
Draeger detector tube kit	VOC, Organic, Inorganic	Hand-held	Near Real-time	http://www.draeger.com/sites/en_uk/Pages/Chemical-Industry/Draeger-Short-term-Tubes.aspx?navID=709
EBAM (18)	$PM_{2.5}$, PM_{10}	Field Portable	Near Real-time	http://www.metone.com/documents/E-BAM_Datasheet_Rev_Aug09.pdf
FTS Met Station (4)	Meteorology	Field Portable	Near Real-time	http://www.ftsenvironmental.com/systems/portable_raws/
ppbRAE 3000 (2)	VOC	Hand-held	Real-time	http://www.raesystems.com/products/ppbrae-3000
SUMMA® Canister	VOC	Hand-held	Requires Lab Analysis	http://SUMMAcanister.com/
Weatherpak Met Station (3)	Meteorology	Field Portable	Real-time	http://www.coastalenvironmental.com/weatherpak-weather-station.shtml
ARB Emergency Response Equipment[8]				
Multiple Role Response Vehicle	Communications and Equipment	Mobile Bus	Real-time Communications	http://en.wikipedia.org/wiki/Mercedes-Benz_Sprinter
SEE Wireless Monitoring System	Communications and Equipment	Field Portable	Real-time Communications	http://www.safeenv.com/lifeline_meter.htm
U.S. EPA Emergency Response Monitoring Instrumentation[9]				
AirCon 2 Hi-Vol Sampler	Particulates	Field Portable	Requires Lab Analysis	http://www.sensidyne.com/library/air-sampling/Datasheets/Gilian_AirCon-2_Area_Sampling_Pump_Datasheet.pdf
AreaRAE	Chemical	Field Portable	Real-time	http://www.raesystems.com/products/arearae-steel
Bullard Thermal Imaging Camera	Thermal Imaging	Hand-held	Real-time	http://www.bullard.com/V3/products/thermal_imaging/fire_service/
Biosystems Cannonball2 Multigas	Acid Gasses	Hand-held	Real-time	http://www.brandtinst.com/biosystems/detector/PhD6_Gas-Detector/PhD6_Multigas_Detector.html

5. State and Federal Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
U.S. EPA Emergency Response Monitoring Instrumentation (cont'd)[9]				
DataRAM	Particulates	Hand-held	Real-time	http://www.thermoscientific.com/en/product/dataram-4-particulate-monitor.html
Draeger detector tube kit	VOC, Organic, Inorganic	Hand-held	Near Real-time	http://www.draeger.com/sites/enus_us/Pages/Oil-Gas-Industry/Draeger-Sampling-Tubes-and-Systems.aspx?navID=2195
Draeger Chip	Chemical	Hand-held	Near Real-time	http://www.draeger.com/sites/enus_us/Pages/Chemical-Industry/Draeger-Chip-Measurement-System.aspx?navID=608
E-BAM	$PM_{2.5}$, PM_{10}	Field Portable	Near Real-time	http://www.metone.com/documents/E-BAM_Datasheet_Rev_Aug09.pdf
GMW Model GV2360 (TSP)	Particulates	Field Portable	Requires Lab Analysis	http://www.pico.co.th/file_download/04-TSP_Volumetric.pdf
GilAir-5 personal air sampling pump	Particulates, Gasses	Hand-held	Real-time	http://www.sensidyne.com/library/air-sampling/Manuals/GilAir-3%20and%20GilAir-5%20Manuals/360-0040-01rC%20GilAir3+5%20ATEX-UL%208%201-2%20x%2011.pdf
Grab Sampling Techniques	Chemical	Field Portable	Requires Lab Analysis	
Hazcat Kit	Chemical	Field Portable	Near Real-time	
Inficon Hapsite ER	Chemical	Field Portable	Near Real-time	http://products.inficon.com/en-us/nav-products/Product/Detail/HAPSITE_ER_Identification_System?path=Products%2Fpg_ChemicalDetection
Jerome 631X	H_2S	Hand-held	Real-time	http://fieldenvironmental.com/jerome-631-x-h2s-analyzer.php
MDA Tapemeter	VOC, Organic, Inorganic	Hand-held	Real-time	
MicroFid	VOC	Hand-held	Real-time	http://products.inficon.com/en-us/nav-products/Product/Detail/MicroFID_II_Portable_Flame_Ionization_Detector?path=Products%2Fpg_ChemicalDetection
Thermo Scientific TVA 1000B	Organic, Inorganic	Field Portable	Real-time	http://www.thermoscientific.com/en/product/tva1000b-toxic-vapor-analyzer.html
Multiwarn	Acid Gasses	Hand-held	Real-time	http://www.draeger.com/Sites/enus_us/Pages/Fire-Services/Multiwarn-2-and-Miniwarn-cs.aspx?navID=1095

5. State and Federal Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
U.S. EPA Emergency Response Monitoring Instrumentation (cont'd)[9]				
MultiRAE	VOC, Acid Gases	Hand-held	Real-time	http://www.raesystems.com/products/multirae-plus
PhD Ultra Gas Meter	Acid Gasses	Hand-held	Real-time	http://www.brandtinst.com/biosystems/detector/PhD6_Gas-Detector/PhD6_Multigas_Detector.html
PM10 Hi-Vol Sampler	PM_{10}	Field Portable	Requires Lab Analysis	http://www.arb.ca.gov/airwebmanual/aqsbdocs1/v2apxp.pdf
BGI PQ200 Sampler	$PM_{2.5}$	Field Portable	Requires Lab Analysis	http://bgiusa.com/aam/pq200.htm
PUF Air Sampler	Particulates, VOC	Field Portable	Requires Lab Analysis	http://www.hi-q.net/products/outdoor-high-volume-air-samplers/puf-3000-2000-series-polyurethane-foam-vapor-collection-systems/default.html
Radeco	Particulates	Hand-held	Near Real-time	
Miran Sapphire	VOC, Organic	Hand-held	Real-time	http://www.thermoscientific.com/en/product/miran-sapphire-portable-ambient-analyzers-1.html
Single Point Monitor	Chemical	Field Portable	Real-time	
SKC Universal personal air sampling pump	Particulates, Gasses	Hand-held	Real-time	http://www.skcinc.com/pumps/224-PCXR4.asp
Smiths Detection HazMatID	Chemical	Field Portable	Near Real-time	http://www.smithsdetection.com/chemical-identification/57-chemical-identification/hazmatid-360.html#.VC7WKLHn_5o
SUMMA® Canister	VOC	Hand-held	Requires Lab Analysis	http://SUMMAcanister.com/
Travel IR	Chemical	Field Portable	Near Real-time	
UltraRAE 3000	Benzene, VOC	Hand-held	Near Real-time	http://www.raesystems.com/products/ultrarae-3000
WeatherHawk Met Station	Meteorology	Field Portable	Real-time	http://www.weatherhawk.com/weather-stations
Multiple Role Response Vehicle	Communications and Equip	Mobile Bus	Real-time Communications	
TAGA Mobile Laboratories	Acid Gasses	Mobile Bus	Real-time	http://www.epa.gov/region6/6lab/taga.htm
VIPER Wireless Monitoring System	Communications and Equip	Field Portable	Real-time Communications	http://www.epaosc.org/site/site_profile.aspx?site_id=5033

5. State and Federal Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
California National Guard 95th Civil Support Team[10]				
JCAD M4A1 (6)	Chemical	Hand-held	Real-time	https://www.mitre.org/sites/default/files/pdf/laljer_jcad.pdf
Smith Detection LCD 3.3 Total Ion Chromatogram	Chemical	Hand-held	Real-time	http://www.smithsdetection.com/en/products-solutions/chemical-agents-detection/59-chemical-agents-detection/lcd-3-3.html#.VC7W27Hn_5o
AreaRAE (12)	O_2, LEL, VOC, NH_3, CL_2	Field Portable	Real-time	http://www.raesystems.com/products/arearae-steel
Inficon Hapsite ER	Chemical	Field Portable	Near Real-Time	http://products.inficon.com/en-us/nav-products/Product/Detail/HAPSITE_ER_Identification_System?path=Products%2Fpg_ChemicalDetection
Shimadzu GC/MS	Chemical	Mobile Lab	Requires Lab Analysis	http://www.shimadzu.com/an/gcms/
Smith Detection FTIR	Chemical	Field Portable	Near Real-Time	http://www.smithsdetection.com/index.php/en/biological-agents-detection/25-technologies/280.html
Department of Toxic Substances Control[11]				
Draeger CMS	Gases	Field Portable	Real-time	http://www.draeger.com/sites/enus_us/Pages/Chemical-Industry/Draeger-Chip-Measurement-System.aspx?navID=608
Draeger PAC III	Gases	Field Portable	Real-time	http://www.fishersci.com/ecomm/servlet/fsproductdetail_10652_646959__-1_0
H2S Analyzer	H_2S	Field Portable	Real-time	http://www.a-a-inc.com/oma-h2s-analyzer/
Jerome 431X	Mercury Vapor	Field Portable	Real-time	http://www.azic.com/downloads/manuals/700-0046%20%28Jerome%29%20431-X%20Mercury%20Vapor%20Analyzer%20User%27s%20Manual.pdf
MSA Sirius	Gases	Field Portable	Real-time	http://www.5alarm.com/pdf/Products/Fire/HazMat-instrumentation/MSA-SiriusMultigasDetector.pdf
PDR-1000 AN	VOC	Field Portable	Real-time	http://www.thermoscientific.com/content/tfs/en/product/personal-dataram-pdr-1000an-monitor.html
ppbRAE 3000	VOC	Hand-held	Real-time	http://www.raesystems.com/products/ppbrae-3000

5. State and Federal Resources (cont'd)

Instrument	Purpose	Type	Interval	Information
Department of Toxic Substances Control (cont'd)[11]				
Thermo Scientific TVA 1000B	Inorganic	Hand-held	Real-time	http://www.thermoscientific.com/en/product/tva1000b-toxic-vapor-analyzer.html
VelociCalc	Inorganic, VOC	Hand-held	Real-time	http://www.tsi.com/multi-function-ventilation-meters/
MultiRAE Pro	H_2S, CO, LEL, O_2, VOC, GAMMA	Hand-held	Real-time	http://www.raesystems.com/products/multirae-pro
California National Guard 9th Civil Support Team[12]				
AreaRAE	O_2, VOC, LEL, H_2S, CO	Hand-held	Real-time	http://www.raesystems.com/products/arearae-steel
MultiRAE Pro	O_2, VOC, LEL, H_2S, CO	Hand-held	Real-time	http://www.raesystems.com/products/multirae-pro
Inficon Hapsite ER	TICs, TIM's	Field Portable	Real Time	http://products.inficon.com/en-us/nav-products/Product/Detail/HAPSITE_ER_Identification_System?path=Products%2Fpg_ChemicalDetection

Endnotes:

[1] Review of Current Air Monitoring Capabilities near Refineries in the San Francisco Bay Area, Eric M. Fujita and David E. Campbell, Desert Research Institute, October 29, 2013

[2] Contra Costa Health Services/Hazardous Materials Programs, Trisha Asuncion, MS, office 925.335.3247, trisha.asuncion@hsd.cccounty.us

[3] San Ramon Valley Fire Hazmat, Mark Trilevsky, office 925.838.6633, MTrilevsky@srvfire.ca.gov

[4] Richmond Fire Department (Fire Station 64 C-Shift) Luis M. Padilla, Truck/Haz-Mat Captain, office 510.620.6984, cell 925.200.1130, Luis_Padilla@ci.richmond.ca.us

[5] Bakersfield Fire Department, Craig Perkins

[6] Kern Oil & Refining Co., Melinda Hicks, Environmental Health & Safety Manager, (661) 845-0761

[7] Kern County: Environmental Health Division, Vicky Furnish, Supervising Environmental Health Specialist, office 661.862.8774

[8] California Air Resources Board Office Of Emergency Response, Charles Pearson, Air Pollution Specialist, office 916.322.7054, cpearson@arb.ca.gov

[9] USEPA/Emergency Response Technical Group, Dennisses Valdes, http://www.epaosc.org/site/site_profile.aspx?site_id=0001

[10] California National Guard, Matthew Shilk 1LT, Section Leader, 95th Civil Support Team, cell 510.750.3137, matthew.t.shilk.mil@mail.mil

[11] DTSC, Enforcement and Emergency Response Program, Emergency Response Branch, Nancy McGee, office 916. 255.6585, nmcgee@dtsc.ca.gov

[12] California National Guard, Andrew H. Hanson Cptn, Operations Officer, 9th Civil Support Team, cell 562-370-3798, mailto:andrew.h.hanson2.mil@mail.mil

Appendix C

Air District Program Reference Documents

C-1 Bay Area Documents

Malone, Kurt, Basso, Michael, and Nguyen, Duc. “2013 Air Monitoring Network Plan.” Bay Area Air Quality Management District (Report), San Francisco, California (July 2014).

Bay Area Air Quality Management District. “Air Monitoring Technology and Methodology Expert Panel Report and Findings.” Bay Area Air Quality Management District (Report), San Francisco, Ca. (July 2013)

Bay Area Air Quality Management District. “Air Monitoring Technology and Methodology Expert Panel Report and Findings.” Bay Area Air Quality Management District (Report), San Francisco, Ca. (June 2014)

Bay Area Air Quality Management District. “Board of Directors Special Meeting: Approved Minutes.” Bay Area Air Quality Management District (Minutes), San Francisco, California. (September 2013)

Bay Area Air Quality Management District. “Work Plan for Action Items Related to Accidental Releases from Industrial Facilities.” Bay Area Air Quality Management District (Report), San Francisco, California. (October 2012)

Bay Area Air Quality Management District. “Incident Response Communication Flowchart.” Bay Area Air Quality Management District (Report) San Francisco, California.

Mellqvist, John, Samuelsson, Jerker, Offerle, Brian, Brohede, Samuel, Andersson, Pontus, and Ericsson, Marianne. “Pilot study to quantify industrial emissions of VOCs, NO_2 and SO_2 by SOF and mobile DOAS in the Bay Area.” FluxSense (Report). San Diego, California. (March 2014)

Fujita, Eric M. and Campbell, David E. “Review of Current Air Monitoring Capabilities near Refineries in the San Francisco Bay Area.” Desert Research Institute (Report), Reno, Nevada. (June 2013)

Appendix C

Air District Program and Reference Documents

C-2 South Coast Documents

South Coast Air Quality Management District. “Emergency Response Program.” South Coast Air Quality Management District (Policies and Procedures) Diamond Bar, California. (June 2010)

South Coast Air Quality Management District. “Execute Contract to Demonstrate Remote Sensing Technology for Fugitive Emissions from Refineries.” Board Meeting, Agenda No. 4. South Coast Air Quality Management District (Report), Diamond Bar, California. (September 2013)

Southern California Industrial Mutual-Aid Organization. “Resource Binder.” Southern California Industrial Mutual-Aid Organization (Report), El Segundo, California. (March 2011)

South Coast Air Quality Management District. “South Coast Air Quality Management District Annual Air Quality Monitoring Network Plan.” South Coast Air Quality Management District (Report), Diamond Bar, California. (July 2014)

Polidori, Andrea, Low, Jason, and Bermudez, Rene. “South Coast Air Quality Management District Annual Air Quality Monitoring Network Plan.” South Coast Air Quality Air Quality Management District (Report), Diamond Bar, California. (July 2014)

South Coast Air Quality Management District. “Transfer Funds, Execute Contract and Issue Purchase Order to Evaluate and Deploy Advanced Remote Sensing Technologies for Emissions Monitoring.” Board Meeting, Agenda No. 5. South Coast Air Quality Management District (Report), Diamond Bar, California. (March 2011)

Appendix C

Air District Program and Reference Documents

C-3 San Joaquin Valley Documents

San Joaquin Valley Air Pollution Control District. “2014 Air Monitoring Network Plan.” San Joaquin Valley Air Pollution Control District (Report), Fresno, California. (January 2015)

Appendix C

Air District Program and Reference Documents

C-4 San Luis Obispo Documents

Brooks, Karen. “2014 Ambient Air Monitoring Network Plan.” San Luis Obispo County Air Pollution Control District (Report), San Luis Obispo, California. (May 2014)

San Luis Obispo County Air Pollution Control District. “San Luis Obispo County Air Pollution Control District: Policy and Procedures for Health Advisory Episodes.” San Luis Obispo County Air Pollution Control District (Policy and Procedures), San Luis Obispo, California. (February 2005)

The SLOAPCD Steering Committee. “ Overview for SLOAPCD Emergency Response Team.” The SLOAPCD Steering Committee (Report), Version 1.5, San Luis Obispo, California. (February 2005)

Appendix D

Local Agency Program Reference Documents

D-1 Bay Area Documents

Solano County Area Plan 2013 + Appendices: Windows, 2013. “Hazardous Materials Area Plan,” Solano County Environmental Health Services Division. http://www.solanocounty.com/depts/rm/environmental_health/hazmat/default.asp

Solano County Interagency Hazardous Materials Team. “Memorandum of Understanding Establishing an Interagency Hazardous Materials Team Within Solano County.” Solano County Interagency Hazardous Materials Team (Memorandum), Solano County, California (November 2007)

Contra Costa Health Services. http://cchealth.org/hazmat/differences-rmp-calarp-iso.php. (Web) Contra Costa County, California. (2000 – 2014)

Appendix D

Local Agency Program Reference Documents

D-2 South Coast Documents

Marquez, Jess N. “Los Angeles Community Environmental Enforcement Network Invitation.” Coalition For A Safe Environment (Letter), Wilmington, California. (February 2014)

Torrance Fire Department. “Formal Radio Communication and Joint Incident Command Protocol.” Torrance Fire Department (Report). Torrance, California.

Appendix D

Local Agency Program Reference Documents

D-3 San Joaquin Valley Documents

Kern Environmental Enforcement Network. http://www.kernreport.org/ (Web). Kern County, California. (2013)

Appendix D

Local Agency Program Reference Documents

D-4 San Luis Obispo Documents

San Luis Obispo County Hazardous Materials Program. http://www.slocounty.ca.gov/health/publichealth/ehs/services/hazmat.htm(Web). San Luis Obispo County, California. (2014)

Appendix E

Refinery Program Reference Documents

E-1 Bay Area Documents

Bay Area Petro-Chemical Mutual Aid Organization. “Emergency Response Manual.” Bay Area Petro-Chemical Mutual Aid Organization (Report), San Francisco, Ca. (April 2013)

Chevron Richmond. “Richmond Community Air Quality Monitoring Program Work Plan.” Chevron Richmond (Work Plan), Richmond California. (November 2012)

U.S Chemical Safety and Hazard Investigation Board. “Interim Investigation Report: Chevron Richmond Refinery Fire.” U.S Chemical Safety and Hazard Investigation Board (Report), Richmond, California. (August 2012)

Appendix E

Refinery Program Reference Documents

E-2 South Coast Documents

Beach Cities Caer: Community Awareness and Emergency Response. http://www.bccaer.org/ (Web). Contra Costa County, California. (2011)

Appendix E

Refinery Program Reference Documents

E-3 San Joaquin Valley Documents

Clausen, Glenn. “Alon Bakersfield Refinery, Area 1 & 2: Risk Management Plan Re-submission.” Alon USA: Bakersfield (Letter), Bakersfield, California. (July 2013)

Clausen, Glenn. “Alon Bakersfield Refinery, Area 3: Risk Management Plan Re-submission.” Alon USA: Bakersfield (Letter), Bakersfield, California. (July 2013)

Kern Oil and Refining Co. “RMP Report for Kern Oil and Refining Co.” Kern Oil and Refining Co (Report), Bakersfield, California. (August 2009)

Appendix E

Refinery Program Reference Documents

E-4 San Luis Obispo Documents

Stumbo, Jerry “Risk Management Plan (RMP) submission has been CERTIFIED” (Web), Arroyo Grande, CA (May 2012)

Appendix F

U.S. EPA and Federal Program Reference Documents

Office of Solid Waste and Emergency Response. “Air Monitoring for Emergency Response.” United States Environmental Protection Agency (Report), Washington, District of Columbia. (March 2012)

United States Environmental Protection Agency. “Draft Roadmap for Next Generation Air Monitoring.” United States Environmental Protection Agency (Report), Washington, District of Columbia. (March 2013)

United States Environmental Protection Agency. “Emergency Response Technical Group.” http://www.epaosc.org/site/doc_list.aspx?site_id=0001

United States Environmental Protection Agency. “Environmental Response Team Monitoring and Analytical Capabilities For Pre-Deployments.” USEPA Environmental Response Team (Report) Washington, District of Columbia.

United States Environmental Protection Agency. “EPA Emergency Response Air Monitoring Guidance Tables.” United States Environmental Protection Agency (Report), Edition 2, Washington, District of Columbia. (2009)

Durkovich, Caitlin, Michaels, David, and Stanislaus, Mathy. “Executive Order 13650, Actions to Improve Chemical Facility Safety and Security – A Shared Commitment.” Occupational Safety and Health Administration (Report), Washington, District of Columbia. (May 2014)

United States Environmental Protection Agency. “Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standards.” United States Environmental Protection Agency (Web), Sacramento, California. (May 2014)

Appendix G

ARB and State Program Reference Documents

California Air Resources Board and CAPCOA. “Air monitoring for Accidental Refinery Releases: Assessment of Existing Capabilities and Potential Improvements.” California Air Resources Board (Report), Sacramento, California. (July 2013)

California Office of Emergency Services. “HAZ-MAT Company Resources Types – Quick Reference.” Fire and Rescue Division: Special Operations Unit (Report), Mather, California.

Interagency Working Group on Refinery Safety. “Improving Public and Worker Safety at Oil Refineries.” Interagency Working Group on Refinery Safety (Report), Sacramento, California. (February 2014)

Interagency Refinery Task Force. “Refinery-Specific Elements in Area Plans.” Interagency Refinery Task Force (Report), Sacramento, California. (November 2013)

California Emergency Management Agency. “Text of Regulations.” California Emergency Management Agency, Title 19. Public Safety, Sacramento, California.

Appendix H

Technical Reference Documents

Hong, Thomas S. “Air Quality Plume characterization and Tracking Using Small Unmanned Aircraft.” PowerPoint Presentation. 2011 National Air Quality Conferences, San Diego, California. (March 2011)

Air and Waste Management Association. “Recent Advances in Air Quality Forecasting.” Air and Waste Management Association (Print), California. (November 2013)

Mellqvist, Johan, Samuelsson, Jerker, Johansson, John, and Offerle, Brian. “AQRP Project 10-0006: Quantification of Industrial Emissions of VOCs, NO_2 and SO_2 by SOF and Mobile DOAS.” University of Texas at Austin, PowerPoint Presentation, Houston, Texas.

Mellqvist, Johan, Samuelsson, Jerker, Johansson, John, Rivera, Claudia, Lefer, Barry, and Alvarez, Sergio. “Comparison of Solar Occultation Flux Measurements to the 2006 TCEQ Emission Inventory and Airborne Measurements for the TexAQS II.” Texas commission on Environmental quality, Austin, Texas. (November 2008)

Mellqvist, Johan, Samuelsson, Jerker, Johansson, John, and Offerle, Brian. “Emission Measurements of Volatile Organic Compounds with the SOF method in Normandy 2008.” Chalmers University of Technology (Report), Göteborg, Sweden. (September 2009)

Mellqvist, Johan. “Emission Measurements of VOCs Using Optical Remote Sensing.” PowerPoint Presentation, Göteborg, Sweden

Mellqvist, Johan. “Environmental Measurement Techniques to Study Gaseous and Particle Emissions.” PowerPoint Presentation, Goteborg, Sweden

Kim, S.-W. , et al. “Evaluations of NO_x and highly reactive VOC Emission Inventories in Texas and Their Implications for Ozone Plume Simulations during the Texas Air Quality Study 2006.” Copernicus Publications, Göttingen, Germany. (November 2011)

Wrenn, Christopher. “Getting the Most from Toxic Gas Sensors.” Environics USA (Report), Abingdon, Maryland.

Technical Reference Documents (cont'd)

Refinery Action Collaborative. "Initial Response of the Collaborative to the Findings and Recommendations of the July 2013 Draft Report of the Interagency Working Group on the Refinery Safety, Governor Jerry Brown: improving Public and Worker Safety at Oil Refineries." Refinery Action Collaborative (Report), San Francisco, Ca. (October 2013)

FluxSense AB. "Introducing 'Bubble Measurements' of VOCs using Optical Remote Sensing." FluxSense AB, PowerPoint Presentation, Göteborg, Sweden.

Mellqvist, Johan, Samuelsson, Jerker, Johansson, John, Rivera, Claudia, Lefer, Barry, Alvarez, Sergio, and Jolly, John. "Measurements of Industrial Emissions of Alkenes in Texas using the Solar Occultation Flux Method." Journal of Geophysical Research, Vol 115, Washington, District of Columbia.

Math Pro. " An Introduction to Petroleum Refining and the Production of Ultra Low Sulfur Gasoline and Diesel Fuel." Math Pro (Report), Bethesda, Maryland. (October 2011)

Lega, M., R.M.A Napoli, G. Persechino, J. J. Kosmatka. "New Techniques in Real-Time 3D Air Quality Monitoring: CO, NO_2, O_3, CO_2, and PM Measurements with Drones and Remote Airborne Sensors." PowerPoint Presentation. 2011 National Air Quality Conferences, San Diego, California. (March 2011)

Wilson, Michael. "Refinery Safety in California: Labor, Community and Fire Agency Views." University of California: Berkeley (Report), Berkeley, California. (March 2013)

American Petroleum Institute. "Workplace Injuries and Illness Safety (WIIS) Report." American Petroleum Institute (Report), Washington, District of Columbia. (2012)

Appendix I

Air Monitoring Contacts

Type	Agency	Name	Title	Section	Office Location	Office Phone	Mobile Phone	Email
State	ARB	Mike Miguel	Chief	Quality Management Branch	Sacramento	(916) 322-0960	(916) 416-3407	mmiguel@arb.ca.gov
State	ARB	Greg Vlasek	Chief	Office of Emergency Response	Sacramento	(916) 323-4294	(916) 838-0872	gvlasek@arb.ca.gov
State	ARB	Charles Pearson	Staff	Office of Emergency Response	Sacramento	(916) 322-7054	(916) 541-9026	cpearson@arb.ca.gov
State	ARB	Russ Bennett	Staff	Office of Emergency Response	Sacramento	(916) 324-1149	(916) 206-1771	russ.bennett@arb.ca.gov
State	ARB	Joseph McCormack	Staff	Office of Emergency Response	Sacramento	(916) 445-3621		joseph.mccormack @arb.ca.gov
State	ARB	Mark Copple	Staff	Office of Emergency Response	Sacramento	(916) 445-3606		mcopple@arb.ca.gov
State	DTSC	Adam Palmer	Supervisor	Emergency Response Branch	Sacramento	(916) 255-6572		apalmer@dtsc.ca.gov
State	DTSC	Nancy McGee	Staff	Emergency Response Branch	Sacramento	(916) 255-6585		nmcgee@dtsc.ca.gov
State	DTSC	Michael Pixton	Staff	Emergency Response Branch	Berkeley	(510) 540-3937		mpixton@dtsc.ca.gov
State	CDPH	Stephen Wall	Chief	Outdoor Air Quality Section	Richmond	(510) 620-2818		swall@cdph.ca.gov

Air Monitoring Contacts (cont'd)

Type	Agency	Name	Title	Section	Office Location	Office Phone	Mobile Phone	Email
State	CDPH	Kevin Chao	Staff	Emergency Preparedness Unit	Richmond	(510) 620-2889		kevin.chao@cdph.ca.gov
Federal	U.S. EPA	John Kennedy	Supervisor	Superfund Division	San Francisco	(415) 947-4129	(415) 218-7395	Kennedy.John@epa.gov
Federal	U.S. EPA	Harry Allen	Chief	Emergency Response Section (R9)	San Francisco	(415) 972-3063		allen.harryl@epa.gov
Contractor	Ecology & the Environment for U.S. EPA R9				Oakland	(510) 550-2760		
Contractor	Weston Soultions for U.S. EPA R9							
District	BAAQMD	Eric Stevenson	Director	Technical Services Division	San Francisco	(415) 749-4695	(415) 740-4793	estevenson@baaqmd.gov
District	BAAQMD	James Hesson	Manager	Laboratory Services	San Francisco	(415) 749-4625	(925) 330-6056	jhesson@baaqmd.gov
District	BAAQMD	Robert Bartley	Manager	Source Test	San Francisco	(415) 749-4601	(415) 740-8830	rbartley@baaqmd.gov
District	BAAQMD	Glen Colwell	Manager	Air Monitoring	San Francisco	(415) 749-4672	(415) 740-7557	gcolwell@baaqmd.gov
District	BAAQMD	Robert Franicevich	Incident Responder	Source Test	San Francisco	(415) 749-4985	(415) 740-4151	rfranicevich@baaqmd.gov
District	BAAQMD	Michael Chan	Incident Responder	Source Test	San Francisco	(415) 749-4985	(415) 740-4178	mchan@baaqmd.gov
District	BAAQMD	Robert Hefley	Incident Responder	Source Test	San Francisco	(415) 749-4985	(415) 740-4163	rhefley@baaqmd.gov
State	National Guard 95th CST	Matthew Shilk	1st Lieutenant/Section Leader	95th Civil Support Team	Hayward		(510) 750-3137	matthew.t.shilk.mil@mail.mil
Refinery	Phillips 66 Rodeo	Art Bertz			Rodeo	(510) 245-4464		art.o.bertz@p66.com

Air Monitoring Contacts (cont'd)

Type	Agency	Name	Title	Section	Office Location	Office Phone	Mobile Phone	Email
Refinery	Valero	Joe Bateman (Valero Fire/SCIHMT Team Leader)	Superintendent	Emergency Services	Benicia	(707) 745-7829	(707) 745-7562 / (707) 816-9969	joe.bateman@valero.com
Refinery	Chevron Richmond	Walt Gill	Manager of Government Affairs					
Refinery	Chevron Richmond	Matt Diez	Air Specialist					
Refinery	Chevron Richmond	Nicole Barber	Public Affairs			(510) 242-3087	(925) 858-3387	
Refinery	Chevron Richmond	Steve	Air Monitoring Project Engineer					
Contractor	Argos Scientific for Chevron Richmond	Axel Abellard	Director of Field Services/ Community and Fenceline Monitoring Programs			(415) 758-2248		axabellard@argos-sci.com
Refinery	Shell				Martinez			
Refinery	Tesoro	Tom Johnston			Pacheco	(925) 370-3226		
Refinery	Shell	Steve Lesher		Public Affairs	Martinez	(925) 313-3462		stephen.lesher@shell.com
Refinery	Shell	Teresa Makarewicz	California Cross-Business Manager					
Refinery	Shell	Natalie Braden	Environmental Manager					natalie.braden@shell.com
Refinery	Tesoro	Claire Spencer				(925) 370-3274		
Refinery	Tesoro	Matt Buell	Environmental Manager			(925) 370-3275		

Air Monitoring Contacts (cont'd)

Type	Agency	Name	Title	Section	Office Location	Office Phone	Mobile Phone	Email
Refinery	Tesoro	Jim Broker				(925) 372-3096 ex 2100		
Hazmat	Benicia Hazmat Response				Benicia	(707) 746-4275		
Hazmat	Solano County Interagency Hazardous Materials Team (SCIHMT)	Dave Martenelli (Solano County Interagency Hazardous Materials Team Leader/City of Vacaville Fire)			Vacaville	(707) 784-6765		dmartinelli@cityofvacaville.com
Hazmat	Valero Fire Industrial Hazardous Materials Team	Joe Bateman (Valero Fire)	Superintendent	Emergency Services	Benicia	(707) 745-7829	(707) 745-7562	joe.bateman@valero.com
Hazmat	San Ramon Valley Fire	Mark Trilevsky			San Ramon	(925) 838-6633		MTrilevsky@srvfire.ca.gov
Environmental Health / CUPA	Solano County Department of Resources	Matthew Geisert	Hazardous Materials Supervisor		Fairfield	(707) 784-3314		MGeisert@solanocounty.com
Hazmat	Oakland Fire	Dan Keenan					(510) 773-0881	testtube@ix.netcom.com

Air Monitoring Contacts (cont'd)

Type	Agency	Name	Title	Section	Office Location	Office Phone	Mobile Phone	Email
Environmental Health	Contra Costa Health Services Hazardous Materials Programs	Trisha Asuncion	Hazardous Materials Specialist	Hazardous Materials Programs	Martinez	(925) 335-3247		trisha.asuncion@hsd.cccounty.us
Hazmat	Richmond Fire Department (Station 64)	Luis M. Padilla	Haz-Mat Captain		Richmond	(510) 620-6984	(925) 200-1130	Luis_Padilla@ci.richmond.ca.us
Hazmat	Richmond Fire Department (Station 64)	Manly M. Moulton Jr.	Battalion Chief		Richmond	(510) 620-6989	(510) 778-0822	Manly_Moulton@ci.richmond.ca.us
District	SCAQMD	Jason Low	Manager	Atmospheric Measurements	Diamond Bar	(909) 396-2269	(909) 263-6975	jlow@aqmd.gov
District	SCAQMD	Andrea Polidori	Manager	Quality Assurance	Diamond Bar	(909) 396-3283		apolidori@aqmd.gov
District	SCAQMD	Lisa Tanaka O'Malley	Community Relations Manager	Legislative & Public Affairs	Diamond Bar	(909) 396-3327		lomalley@aqmd.gov
District	SCAQMD	Mohsen Nazemi	Deputy Executive Officer	Engineering and Compliance Office	Diamond Bar	(909) 396-2662		MNazemi1@aqmd.gov
District	SCAQMD	Jill Whynot	Assistant Deputy Executive Officer	Engineering and Compliance Office	Diamond Bar	(909) 396-3104		jwhynot@aqmd.gov
District	SCAQMD	Edwin Pupka	Senior Enforcement Manager	Engineering and Compliance Office	Diamond Bar	(909) 396-3332		epupka@aqmd.gov
Refinery	Chevron				El Segundo			

Air Monitoring Contacts (cont'd)

Type	Agency	Name	Title	Section	Office Location	Office Phone	Mobile Phone	Email
Refinery	Valero-Ultramar				Wilmington			
Refinery	ExxonMobil				Torrance			
Refinery	Paramount Oil				Paramount			
Refinery	Phillips 66				Wilmington			
Refinery	Tesoro				Carson			
Refinery	Tesoro				Wilmington			
Refinery	Chevron	Susan Worley	Manager, Environmental and Safety		El Segundo	(310) 615-3749		susb@chevron.com
Refinery	Chevron	R.k. (Rod) Spackman	Manager, Policy, Government, and Public Affairs		El Segundo	(310) 615-5281		rspackman@chevron.com
Refinery	Chevron	Robert Orinion	Environmental Section Head	HES Division	El Segundo	(310) 615-4147		rorinion@chevron.com
Hazmat	LA County Fire	Karen Codding	Assistant Chief	Special Operations Section	Commerce	(323) 890-4063		Karen.Codding@fire.lacounty.gov
Hazmat	LA County Fire	Bill Jones	Chief	Health Haz-Mat Division		(323) 890-4042		Bill.Jones@fire.lacounty.gov
Hazmat	LA County Fire	Walter Uroff				(323) 890-4043		Walter.Uroff@fire.lacounty.gov
Hazmat	LA County Fire	Kenneth Smith						Ken.Smith@fire.lacounty.gov
Hazmat	LA County Fire	Richard Clark				(323) 890-4056		Richard.Clark@fire.lacounty.gov
Hazmat	LA County Fire	Mario Tresierras						
City Official	Torrance	Judy Gibson		Planning Commission	Torrance	(310) 618-5990		
Hazmat	Torrance	Kenneth Lew	Hazardous Materials Specialist	Hazardous Materials Division	Torrance	(310) 618-2973		klew@torranceca.gov

Air Monitoring Contacts (cont'd)

Type	Agency	Name	Title	Section	Office Location	Office Phone	Mobile Phone	Email
Fire	Torrance	David Dumais	Deputy Fire Chief	Torrance Fire Department	Torrance	(310) 781-7040		ddumais@torranceca.gov
Fire	Torrance	Martin Serna	Assistant Chief/ Fire Marshal	Torrance Fire Department	Torrance	(310) 618-2973		mserna@torranceca.gov
	Torrance	Patty Senecal	Manager, Southern California Region and Infrastructure Issues		Torrance	(310) 808-2144	(310) 678-7782	psenecal@wspa.org
	Shafter	Ron H. Conrow	West District Manager		Shafter	(661) 368-7917	(6610 319-9978	ronald.conrow@plainsmidstream.com
District	SJVAPCD	Samir Sheikh			Fresno	(559) 230-6000		
District	SJVAPCD	Shawn Ferreria						
District	SJVAPCD	Mike Oldershaw	Manager	Air Quality Compliance Manager	Bakersfield	(661) 392-5521		mike.oldershaw@valleyair.org
Refinery	Kern Oil & Refining Company	Melinda Hicks	Manager	Environmental, Health & Safety Manager	Bakersfield	(661) 282-2646	(661) 447-1484	mhicks@kernoil.com
Refinery	San Joaquin Refining Company	David G. Campbell	Manager	Environmental Manager	Bakersfield	(661) 852-2504	(661) 331-7644	davidc@sjr.com
Refinery	Paramount Petroleum/ Alon USA	Helen Ordway	Manager	Environmental Manager	Bakersfield	(661) 326-4422	(661) 201-8152	helen.ordway@alonusa.com
Hazmat	Bakersfield Fire Department	Craig Perkins	Hazardous Materials Specialist	Fire/Hazmat	Bakersfield	(661) 326-3684		ctperkins@bakersfieldfire.us

Air Monitoring Contacts (cont'd)

Type	Agency	Name	Title	Section	Office Location	Office Phone	Mobile Phone	Email
Environmental Health	Kern County/ Hazmat Program	Vicky Furnish	Supervising Environmental Health Specialist	Hazardous Materials Programs	Bakersfield	(661) 862-8874	(661) 340-1493	furnishv@co.kern.ca.us
District	SLOAPCD	Karen Brooks	Manager	Compliance & Monitoring	San Luis Obispo	(805) 781-5912		kbrooks@co.slo.ca.us
Refinery	Phillips 66	Jerry Stumbo	Site Manager		Santa Maria	(805) 343-3273		jerry.d.stumbo@p66.com
Refinery	Phillips 66	Kristen Kopp		Environmental Health and Safety	Santa Maria	(805) 343-3241		kristen.m.kopp@p66.com
Hazmat	CALFIRE	Chief Robert Lewin				(805) 543-4244		rlewin@co.slo.ca.us
OES	SLO County Emergenc y Services	Ron Alsop				(805) 781-5011		ralsop@co.slo.ca.us
OES	SLO County Emergenc y Services	Kelly Van Buren				(805) 781-5011		kvanburen@co.slo.ca.us
CUPA	County Environme ntal Health	Aaron LaBarre	Supervising Environmental Health Specialist	Environmental Health Services	San Luis Obispo	(805) 781-5595		alabarre@co.slo.ca.us

Appendix J

Internet Reference Sites

Contra Costa Health Services: Haz-Mat. http://cchealth.org/hazmat/about-us.php. Contra Costa Health Services, (Web). Contra Costa County, California. (2000–2014)

U.S. DEPARTMENT OF HOMELAND SECURITY: Science and Technology Directorate. https://narac.llnl.gov/uploads/DHS_IMAAC_Fact_Sheet_4-05_vcuny.pdf. U.S. DEPARTMENT OF HOMELAND SECURITY (Web). Washington, District of Columbia.

Interagency Modeling and Atmospheric Assessment Center (IMAAC). http://www.dhs.gov/imaac. U.S. DEPARTMENT OF HOMELAND SECURITY (Web). Washington, District of Columbia.

Joint Effects Model. http://www.jpeocbd.osd.mil/packs/Default.aspx?pg=1701. Joint Program Executive Office for Chemical and Biological Defense (Web). Maryland

CATS for Emergency Response. http://www.esri.com/industries/public-safety/tools/cats. ESRI (Web). Redlands, Ca.

Specialized Radiological Monitoring and Hazard Assessment Capabilities. http://www.acq.osd.mil/ncbdp/narp/Radiation_Data/Specialized_Radiological.htm. Office of the Assistant Secretary of Defense (Web). Washington, District of Columbia.

National Atmospheric Release Advisory Center. https://narac.llnl.gov/. National Atmospheric Release Advisory Center (Web). Livermore, CA.

CoCoCAER Community Warning System. http://www.cococws.us/getCurrentAlerts.action. Contra Costa County (Web). Contra Costa County, California.

CoCoCAER Community Alert Network. http://www.cococws.us/loadlogin.action. Contra Costa County (Web). Contra Costa County, California.

Tesoro: Health and Safety. http://tsocorp.com/social-responsibility/health-safety. Tesoro (Web). Avon, California.

Internet Reference Sites (cont'd)

Argos Scientific Main Page. http://www.argos-sci.com/about.htm. Argos Scientific (Web). Portland, Oregon.

SAFER Real Time. http://www.safersystem.com/. Safer Systems (Web). Camarillo, CA.

Nixle. http://www.nixle.com/. Nixle (Web). San Francisco, California (2011).

Ecology and Environment, Inc. Global Environmental Specialist. http://www.ene.com/. Ecology and Environment, Inc. Global Environmental Specialist (Web). Lancaster, New York.

Weston Solutions. http://www.westonsolutions.com/. Weston Solutions (Web). Vallejo, California.

NRC. http://www.nrcc.com/Pages/default.aspx. NRC (Web). Chico, California.

Clean Harbors. http://www.cleanharbors.com/. Clean Harbors (Web). San Jose, Ca.

Environmental Dynamics, Inc. http://environmentaldynamicsinc.com/. Environmental Dynamics, Inc. (Web). Gardena, California.

PARC Environmental. http://www.parcenvironmental.com/. http://www.parcenvironmental.com/ (Web). Fresno, California. (2014)

Interagency Modeling and Atmospheric Assessment Center. http://www.dhs.gov/imaac. U.S. Department of Homeland Security: Science and Technology Directorate (Web). Washington, District of Columbia. (April 2005)

Joint Effects Model. http://www.jpeocbd.osd.mil/packs/Default.aspx?pg=1701. Joint Program Executive Office for Chemical and Biological Defense (Web). Baltimore, Maryland.

Consequence Assessment Toolset. http://www.esri.com/industries/public-safety/tools/cats. ESRI (Web). Redlands, California. (February 2011)

Hazardous Predictions and Assessment Capabilities. http://www.acq.osd.mil/ncbdp/narp/Radiation_Data/Specialized_Radiological.htm. Office of the Assistant Secretary of Defense for Nuclear, Chemical and Biological Defense Programs/ Nuclear Matters (Web). Washington, District of Columbia.

Internet Reference Sites (cont'd)

National Atmospheric Release Advisory Center. https://narac.llnl.gov/. National Atmospheric Release Advisory Center (Web). Livermore, California.

FluxSense. http://www.fluxsense.se/. FluxSense (Web). Göteborg, Sweden

Appendix K
Acronyms

LIST OF ACRONYMS

AIHA	American Industrial Hygiene Association
Aldehydes	Toxic aldehyde compounds, using filter media
ALOHA	Areal Locations of Hazardous Atmospheres
APCD	Air Pollution Control District
APCO	Air Pollution Control Officer
AQMD	Air Quality Management District
AQPM	Air Quality Program Manager
ARB	Air Resources Board
ARS	Alternative Release Scenarios
BAAQMD	Bay Area Air Quality Management District
$BAM_{2.5}$	$PM_{2.5}$ by beta attenuation monitor
BAM_{10}	PM_{10} beta attenuation monitor
BC	Battalion Chief or Black Carbon
BCAMP	Benicia Community Air Monitoring Program
BFD	Bakersfield City Fire Department
BLEVE	Boiling Liquid Expanding Vapor Explosion
BP	Barometric pressure
BTV	Benicia Television
CA	California
CAA	Clean Air Act
CAC	Community Advisory Council
CAER	Community Awareness and Emergency Response
CAHAN	California Health Alert Network
CalARP	California Accidental Release Prevention
CalEPA	California Environmental Protection Agency
CalOES	California Office of Emergency Services
CAMEO	Computer-Aided Management of Emergency Operations
CAN	Community Alert and Notification
CAP	Community Advisory Panel
CAPCOA	California Air Pollution Control Officers Association
CARPA	California Air Response Planning Alliance
CATS	Consequence Assessment Tool Set
CCCHMP	Contra Costa County Hazardous Materials Program
CCCHSD	Contra Costa County Health Services Department
CCCOES	Contra Costa County Office of Emergency Services
CDPH	California Department of Public Health

Acronyms (cont'd)

CED	Compliance and Enforcement Division
CEQA	California Environmental Quality Act
CERT	Community Emergency Response Teams
CFD	Chevron Fire Department
Cl_2	Chlorine
CMS	Chip Measurement System
CO	Carbon monoxide
CRHMRO	Coastal Region Hazardous Materials Response Organization
Cr_{6+}	Toxic chromium, using filter media
CSB	Chemical Safety Board
CSN	Chemical Speciation Network
CST	Civil Support Teams
CUPA	Certified Unified Program Agency
CWS	Community Warning System
DRI	Desert Research Institute
DTRA	Defense Threat Reduction Agency
DTSC	Department of Toxic Substances Control
EAS	Emergency Alert System
EHS	Environmental, Health and Safety
ELLAP	Environmental Lead Laboratory Accreditation Program
EMLAP	Environmental Microbiology Laboratory Accreditation Program
EMSL	Environmental Molecular Sciences Laboratory
EMS	Emergency Medical Service
EOC	Emergency Operations Center
ERP	Emergency Response Program
ERT	Emergency Response Team
ESFD	El Segundo Fire Department
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FTIR	Fourier Transform Infrared Spectroscopy
Gas Organics	Speciated toxic organic compounds, using sample canisters
GC	Gas Chromatography
GCM	Global Community Monitoring
GIS	Geographic Information System
GLM	Ground Level Monitors
H&S	Health and Safety

Acronyms (cont'd)

HazMat	Hazardous Materials
HAZWOPER	Hazardous Waste Operations and Emergency Response
HC	Hydrocarbons
HCN	Hydrogen Cyanide
HES	Health and Environmental Safety
HF	Hydrogen Fluoride
HHMD	Health Hazardous Materials Division
Hi-vol	High Volume
HPAC	Hazardous Predictions and Assessment Capabilities
H_2S	Hydrogen Sulfide
HSIP	Homeland Security Infrastructure Program
HWS	Horizontal Wind Speed
HYSPLIT	HYbrid Single-Particle Lagrangian
IC	Incident Command or Incident Commander
ICC	Incident Collaboration Center
ICR	Information Collection Request
ICS	Incident Command System
IH	Industrial Hygiene
IHLAP	Industrial Hygiene Laboratory Accreditation Program
IMAAC	Interagency Modeling and Atmospheric Assessment Center
IMAT	Incident Management Assist Team
IMT	Incident Management Team
INS	Incident of National Significance
IR	Infrared
ISO	Industrial Safety Ordinance
JEM	Joint Effects Model
KCFD	Kern County Fire Department
KCEH	Kern County Environmental Health
LA	Los Angeles
LACoFD-HHMD	Los Angeles County Fire Department – Health and Hazardous Materials Division
LAFD	Los Angeles Fire Department
LEL	Lower Explosive Limits
LEPC	Local Emergency Planning Committee
MET	Meteorological instrument package, typically consisting of temperature, wind speed, wind direction and relative humidity measurement device.
Metals	Speciated metals, using filter media

Acronyms (cont'd)

MMB	Modeling and Meteorology Branch
MSRC	Marine Spill Response Corporation & Stars Contractors
NARAC	National Atmospheric Release Advisory Center
NATTS	National Air Toxics Trends Stations
NBC	Nuclear, Biological, Chemical
NESHAPS	National Emission Standards for hazardous Air Pollutants
Nephelometer	small and portable light scattering devices to detect $PM_{2.5}$
NFPA	National Fire Protection Association
NH_3	Ammonia
NIMS	National Incident Management System
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology
NMHC	Non-Methane Hydrocarbons
NMOC	Non-Methane Organic Compounds
NO_X	Oxides of Nitrogen, various
NO_y	Reactive Nitrogen Oxides
NOAA	National Oceanographic and Atmospheric Administration
NRC	National Response Corporation
NVLAP	National Voluntary Laboratory Accreditation Program
NWS	National Weather Service
O_3	Ozone
OER	Office of Emergency Response
OES	Office of Emergency Service
OT	Outdoor temperature
OSC	On Scene Coordinator
OSHA	Occupational Safety and Health Administration
PAHs	Polycyclic Aromatic Hydrocarbons, speciated organic fractions of PM10
PAMS	Photochemical Assessment Monitoring Stations
Pb	Lead, using filter media
PID	Photoionization Detector
PIER	Public Information and Emergency Response
PIO	Public Information Officer
PM	Particulate matter
$PM_{2.5}$ (continuous)	$PM_{2.5}$ is a hybrid of direct reading monitors and manual samplers

Acronyms (cont'd)

PM2.5 (filter)	PM2.5 is collected on 47 mm PTFE membrane media at a volumetric sample rate of 16.67 lpm.
PM_{10} (continuous)	PM_{10} is a hybrid of direct reading monitors and manual samplers
PM_{10} (filter)	PM_{10} is collected on 47 mm PTFE membrane media at a volumetric sample rate of 16.67 lpm.
$PM_{2.5}$ Spec	$PM_{2.5}$ sampling with ability for chemical speciation
PMAO	Petro-chemical Mutual Aid Organization
ppb	Parts Per Billion
ppm	Part Per Million
PUF	Poly-Urethane Foam
RAN	Radio Alert Network
RCAP	Rodeo Community Advisory Panel
REACT	Richmond Emergency Action Community Teams
RH	Relative Humidity
RIO	Refinery Information Officer
RMP	Risk Management Plan
SCAQMD	South Coast Air Quality Management District
SCIHMT	Solano County Interagency HazMat Team
SCIMO	Southern California Industrial Mutual Aid Organization
SIP	Shelter in Place
SJVAPCD	San Joaquin Valley Air Pollution Control district
SLAMS	State and Local Air Monitoring Stations
SLO	San Luis Obispo
SLOAPCD	San Luis Obispo Air Pollution Control District
SO_2	Sulfur Dioxide
SOF	Solar Occultation Flux
SPM	Single Point Monitor
SR	Solar Radiation
SRA	State Responsibility Area
TAC	Toxic Air Contaminants
TENS	Telephone Emergency Notification System
TEOM	Tapered Element Oscillating Microbalance, Analytical method
TFD	Torrance Fire Department
TIC	Toxic Industrial Chemicals
TIM	Toxic Industrial Materials
Toxics	Spatial variations in average concentration of air toxics

Acronyms (cont'd)

TSD	Technical Services Division
TSP	Total Suspended Particulates
TSP_{lead}	Total Suspended Particulates, lead speciated
UATMP	Urban Air Toxic Monitoring Program
UC	Unified command
UCS	Unified Command Suite
UFP	Ultrafine Particle (< 0.1 micrometers diameter)
US	United States
USEPA	United States Environmental Protection Agency
UV	Ultraviolet
UV-DOAS	Ultraviolet Differential Optical Absorption Spectroscopy
VCAP	Valero Community Advisory Panel
VOC	Volatile Organic Compounds
VOIP	Voice over Internet Protocol
WCS	Worst-case-scenario
WCES	West Coast Environmental Solutions
WD	Wind direction