APPENDIX 5.1C

Dispersion Modeling and Climate Information

APPENDIX 5.1C

Dispersion Modeling and Climate Information

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Table 5.1C-1
Commissioning Source Parameters for AERMOD Input

Point Sources

Case	Building Name	Easting (X)	Northing (Y)	Baes Elevation	Stack Height	Temperature	Exit Velocity	Stack Diameter	NO_2		CO	
		(m)	(m)	(m)	(m)	(K)	(m/s)	(m)	(g/s)	(lb/hr)	(g/s)	(lb/hr)
6	HRSG1	633100.06	4174630.8	53.64	45.72	360.37	10.363	5.18	17.868	141.81	19.391	153.9
	HRSG2	633139.19	4174600.3	53.78	45.72	360.37	10.363	5.18	17.868	141.81	19.391	153.9
7	HRSG1	633100.06	4174630.8	53.64	45.72	373.71	15.545	5.18	--	--	8.820	70
	HRSG2	633139.19	4174600.3	53.78	45.72	373.71	15.545	5.18	--	--	8.820	70
12	HRSG1	633100.06	4174630.8	53.64	45.72	373.71	15.545	5.18	5.456	43.3	--	--
	HRSG2	633139.19	4174600.3	53.78	45.72	373.71	15.545	5.18	5.456	43.3	--	--
14	HRSG1	633100.06	4174630.8	53.64	45.72	359.82	14.935	5.18	1.210	9.6	--	--
	HRSG2	633139.19	4174600.3	53.78	45.72	359.82	14.935	5.18	1.210	9.6	--	--
18	HRSG1	633100.06	4174630.8	53.64	45.72	359.82	14.935	5.18	2.318	18.4	3.112	24.7
	HRSG2	633139.19	4174600.3	53.78	45.72	359.82	14.935	5.18	2.318	18.4	3.112	24.7
22	HRSG1	633100.06	4174630.8	53.64	45.72	359.82	14.935	5.18	--	--	1.556	12.35
	HRSG2	633139.19	4174600.3	53.78	45.72	359.82	14.935	5.18	--	--	1.556	12.35

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Table 5.1C-2
Commissioning Modeling Results Summary

Case	Source	NO_2 (µg/m^3)	CO (µg/m^3)	
		1-hr	1-hr	8-hr
6	ALL	173.456	327.768	72.205
6	HRSG1	86.727	161.796	36.241
6	HRSG2	86.758	165.972	36.169
7	ALL	--	94.568	20.699
7	HRSG1	--	47.543	10.395
7	HRSG2	--	47.024	10.376
12	ALL	58.497	--	--
12	HRSG1	29.409	--	--
12	HRSG2	29.088	--	--
14	ALL	13.352	--	--
14	HRSG1	6.661	--	--
14	HRSG2	6.692	--	--
18	ALL	25.592	--	--
18	HRSG1	12.766	17.138	4.062
18	HRSG2	12.825	17.217	4.055
22	ALL	--	17.177	4.029
22	HRSG1	--	8.569	2.031
22	HRSG2	--	8.608	2.028

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-3
Stack Parameters for AERMOD Input

Point Sources

Case	Source ID	Source Description	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
1	HRSG1	HRSG Stack	633100.06	4174630.75	53.64	45.72	359.82	14.935	5.18
1	HRSG2	HRSG Stack	633139.19	4174600.25	53.78	45.72	359.82	14.935	5.18
1	WSAC1	WSAC Fan	633043.64	4174664.92	53.75	3.1115	302.59	14.3256	1.8098
1	WSAC2	WSAC Fan	633048.17	4174670.58	53.61	3.1115	302.59	14.3256	1.8098
1	EGEN	EmergencyGenerator	633002.63	4174632.75	54.58	1.9294	696.48	65.5025786	0.157
1	AUXBOIL	Auxiliary Boiler	633066.75	4174613	54.18	15.24	421.9	5.82408097	1.2192
1	PUMP	Diesel Fire Pump	632975.13	4174657.25	54.63	3.6576	784.26	40.8718847	0.1549
2	HRSG1	HRSG Stack	633100.06	4174630.75	53.64	45.72	372.59	15.24	5.182
2	HRSG2	HRSG Stack	633139.19	4174600.25	53.78	45.72	372.59	15.24	5.182
2	WSAC1	WSAC Fan	633043.64	4174664.92	53.75	3.1115	302.59	14.3256	1.8098
2	WSAC2	WSAC Fan	633048.17	4174670.58	53.61	3.1115	302.59	14.3256	1.8098
2	EGEN	EmergencyGenerator	633002.63	4174632.75	54.58	1.9294	696.48	65.5025786	0.157
2	AUXBOIL	Auxiliary Boiler	633066.75	4174613	54.18	15.24	421.9	5.82408097	1.2192
2	PUMP	Diesel Fire Pump	632975.13	4174657.25	54.63	3.6576	784.26	40.8718847	0.1549
3	HRSG1	HRSG Stack	633100.06	4174630.75	53.64	45.72	373.71	15.545	5.182
3	HRSG2	HRSG Stack	633139.19	4174600.25	53.78	45.72	373.71	15.545	5.182
3	WSAC1	WSAC Fan	633043.64	4174664.92	53.75	3.1115	302.59	14.3256	1.8098
3	WSAC2	WSAC Fan	633048.17	4174670.58	53.61	3.1115	302.59	14.3256	1.8098
3	EGEN	EmergencyGenerator	633002.63	4174632.75	54.58	1.9294	696.48	65.5025786	0.157
3	AUXBOIL	Auxiliary Boiler	633066.75	4174613	54.18	15.24	421.9	5.82408097	1.2192
3	PUMP	Diesel Fire Pump	632975.13	4174657.25	54.63	3.6576	784.26	40.8718847	0.1549
4	HRSG1	HRSG Stack	633100.06	4174630.75	53.64	45.72	366.48	12.192	5.182
4	HRSG2	HRSG Stack	633139.19	4174600.25	53.78	45.72	366.48	12.192	5.182
4	WSAC1	WSAC Fan	633043.64	4174664.92	53.75	3.1115	302.59	14.3256	1.8098
4	WSAC2	WSAC Fan	633048.17	4174670.58	53.61	3.1115	302.59	14.3256	1.8098
4	EGEN	EmergencyGenerator	633002.63	4174632.75	54.58	1.9294	696.48	65.5025786	0.157
4	AUXBOIL	Auxiliary Boiler	633066.75	4174613	54.18	15.24	421.9	5.82408097	1.2192
4	PUMP	Diesel Fire Pump	632975.13	4174657.25	54.63	3.6576	784.26	40.8718847	0.1549
5	HRSG1	HRSG Stack	633100.06	4174630.75	53.64	45.72	360.37	10.363	5.182
5	HRSG2	HRSG Stack	633139.19	4174600.25	53.78	45.72	360.37	10.363	5.182
5	WSAC1	WSAC Fan	633043.64	4174664.92	53.75	3.1115	302.59	14.3256	1.8098
5	WSAC2	WSAC Fan	633048.17	4174670.58	53.61	3.1115	302.59	14.3256	1.8098
5	EGEN	EmergencyGenerator	633002.63	4174632.75	54.58	1.9294	696.48	65.5025786	0.157
5	AUXBOIL	Auxiliary Boiler	633066.75	4174613	54.18	15.24	421.9	5.82408097	1.2192
5	PUMP	Diesel Fire Pump	632975.13	4174657.25	54.63	3.6576	784.26	40.8718847	0.1549
6	HRSG1	HRSG Stack	633100.06	4174630.75	53.64	45.72	368.15	14.326	5.182

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-3
Stack Parameters for AERMOD Input

Point Sources

Case	Source ID	Source Description	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
6	HRSG2	HRSG Stack	633139.19	4174600.25	53.78	45.72	368.15	14.326	5.182
6	WSAC1	WSAC Fan	633043.64	4174664.92	53.75	3.1115	302.59	14.3256	1.8098
6	WSAC2	WSAC Fan	633048.17	4174670.58	53.61	3.1115	302.59	14.3256	1.8098
6	EGEN	EmergencyGenerator	633002.63	4174632.75	54.58	1.9294	696.48	65.5025786	0.157
6	AUXBOIL	Auxiliary Boiler	633066.75	4174613	54.18	15.24	421.9	5.82408097	1.2192
6	PUMP	Diesel Fire Pump	632975.13	4174657.25	54.63	3.6576	784.26	40.8718847	0.1549
7	HRSG1	HRSG Stack	633100.06	4174630.75	53.64	45.72	375.37	13.411	5.182
7	HRSG2	HRSG Stack	633139.19	4174600.25	53.78	45.72	375.37	13.411	5.182
7	WSAC1	WSAC Fan	633043.64	4174664.92	53.75	3.1115	302.59	14.3256	1.8098
7	WSAC2	WSAC Fan	633048.17	4174670.58	53.61	3.1115	302.59	14.3256	1.8098
7	EGEN	EmergencyGenerator	633002.63	4174632.75	54.58	1.9294	696.48	65.5025786	0.157
7	AUXBOIL	Auxiliary Boiler	633066.75	4174613	54.18	15.24	421.9	5.82408097	1.2192
7	PUMP	Diesel Fire Pump	632975.13	4174657.25	54.63	3.6576	784.26	40.8718847	0.1549
8	HRSG1	HRSG Stack	633100.06	4174630.75	53.64	45.72	378.15	14.326	5.182
8	HRSG2	HRSG Stack	633139.19	4174600.25	53.78	45.72	378.15	14.326	5.182
8	WSAC1	WSAC Fan	633043.64	4174664.92	53.75	3.1115	302.59	14.3256	1.8098
8	WSAC2	WSAC Fan	633048.17	4174670.58	53.61	3.1115	302.59	14.3256	1.8098
8	EGEN	EmergencyGenerator	633002.63	4174632.75	54.58	1.9294	696.48	65.5025786	0.157
8	AUXBOIL	Auxiliary Boiler	633066.75	4174613	54.18	15.24	421.9	5.82408097	1.2192
8	PUMP	Diesel Fire Pump	632975.13	4174657.25	54.63	3.6576	784.26	40.8718847	0.1549
9	HRSG1	HRSG Stack	633100.06	4174630.75	53.64	45.72	368.71	10.973	5.182
9	HRSG2	HRSG Stack	633139.19	4174600.25	53.78	45.72	368.71	10.973	5.182
9	WSAC1	WSAC Fan	633043.64	4174664.92	53.75	3.1115	302.59	14.3256	1.8098
9	WSAC2	WSAC Fan	633048.17	4174670.58	53.61	3.1115	302.59	14.3256	1.8098
9	EGEN	EmergencyGenerator	633002.63	4174632.75	54.58	1.9294	696.48	65.5025786	0.157
9	AUXBOIL	Auxiliary Boiler	633066.75	4174613	54.18	15.24	421.9	5.82408097	1.2192
9	PUMP	Diesel Fire Pump	632975.13	4174657.25	54.63	3.6576	784.26	40.8718847	0.1549
10	HRSG1	HRSG Stack	633100.06	4174630.75	53.64	45.72	365.37	9.754	5.182
10	HRSG2	HRSG Stack	633139.19	4174600.25	53.78	45.72	365.37	9.754	5.182
10	WSAC1	WSAC Fan	633043.64	4174664.92	53.75	3.1115	302.59	14.3256	1.8098
10	WSAC2	WSAC Fan	633048.17	4174670.58	53.61	3.1115	302.59	14.3256	1.8098
10	EGEN	EmergencyGenerator	633002.63	4174632.75	54.58	1.9294	696.48	65.5025786	0.157
10	AUXBOIL	Auxiliary Boiler	633066.75	4174613	54.18	15.24	421.9	5.82408097	1.2192
10	PUMP	Diesel Fire Pump	632975.13	4174657.25	54.63	3.6576	784.26	40.8718847	0.1549
11	HRSG1	HRSG Stack	633100.06	4174630.75	53.64	45.72	363.15	16.459	5.182
11	HRSG2	HRSG Stack	633139.19	4174600.25	53.78	45.72	363.15	16.459	5.182

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-3
Stack Parameters for AERMOD Input

Point Sources									
Case	Source ID	Source Description	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
11	WSAC1	WSAC Fan	633043.64	4174664.92	53.75	3.1115	302.59	14.3256	1.8098
11	WSAC2	WSAC Fan	633048.17	4174670.58	53.61	3.1115	302.59	14.3256	1.8098
11	EGEN	EmergencyGenerator	633002.63	4174632.75	54.58	1.9294	696.48	65.5025786	0.157
11	AUXBOIL	Auxiliary Boiler	633066.75	4174613	54.18	15.24	421.9	5.82408097	1.2192
11	PUMP	Diesel Fire Pump	632975.13	4174657.25	54.63	3.6576	784.26	40.8718847	0.1549
12	HRSG1	HRSG Stack	633100.06	4174630.75	53.64	45.72	378.71	17.069	5.182
12	HRSG2	HRSG Stack	633139.19	4174600.25	53.78	45.72	378.71	17.069	5.182
12	WSAC1	WSAC Fan	633043.64	4174664.92	53.75	3.1115	302.59	14.3256	1.8098
12	WSAC2	WSAC Fan	633048.17	4174670.58	53.61	3.1115	302.59	14.3256	1.8098
12	EGEN	EmergencyGenerator	633002.63	4174632.75	54.58	1.9294	696.48	65.5025786	0.157
12	AUXBOIL	Auxiliary Boiler	633066.75	4174613	54.18	15.24	421.9	5.82408097	1.2192
12	PUMP	Diesel Fire Pump	632975.13	4174657.25	54.63	3.6576	784.26	40.8718847	0.1549
13	HRSG1	HRSG Stack	633100.06	4174630.75	53.64	45.72	372.04	13.716	5.182
13	HRSG2	HRSG Stack	633139.19	4174600.25	53.78	45.72	372.04	13.716	5.182
13	WSAC1	WSAC Fan	633043.64	4174664.92	53.75	3.1115	302.59	14.3256	1.8098
13	WSAC2	WSAC Fan	633048.17	4174670.58	53.61	3.1115	302.59	14.3256	1.8098
13	EGEN	EmergencyGenerator	633002.63	4174632.75	54.58	1.9294	696.48	65.5025786	0.157
13	AUXBOIL	Auxiliary Boiler	633066.75	4174613	54.18	15.24	421.9	5.82408097	1.2192
13	PUMP	Diesel Fire Pump	632975.13	4174657.25	54.63	3.6576	784.26	40.8718847	0.1549
14	HRSG1	HRSG Stack	633100.06	4174630.75	53.64	45.72	363.71	11.278	5.182
14	HRSG2	HRSG Stack	633139.19	4174600.25	53.78	45.72	363.71	11.278	5.182
14	WSAC1	WSAC Fan	633043.64	4174664.92	53.75	3.1115	302.59	14.3256	1.8098
14	WSAC2	WSAC Fan	633048.17	4174670.58	53.61	3.1115	302.59	14.3256	1.8098
14	EGEN	EmergencyGenerator	633002.63	4174632.75	54.58	1.9294	696.48	65.5025786	0.157
14	AUXBOIL	Auxiliary Boiler	633066.75	4174613	54.18	15.24	421.9	5.82408097	1.2192
14	PUMP	Diesel Fire Pump	632975.13	4174657.25	54.63	3.6576	784.26	40.8718847	0.1549

Note: The emergency generator is an existing GWF Tracy source.

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-4
Building Parameters for AERMOD Input

Building Name	Number of Tiers	Tier Number	Base Elevation (m)	Tier Height (m)	Number of Corners	Corner 1 East (X) (m)	Corner 1 North (Y) (m)	Corner 2 East (X) (m)	Corner 2 North (Y) (m)	Corner 3 East (X) (m)	Corner 3 North (Y) (m)	Corner 4 East (X) (m)	Corner 4 North (Y) (m)	Corner 5 East (X) (m)	Corner 5 North (Y) (m)	Corner 6 East (X) (m)	Corner 6 North (Y) (m)
HRSG1	1	1	53.62	27.432	11	633097.38	4174631.5	633094.08	4174629.6	633088.48	4174622.2	633083.78	4174612	633086.18	4174610.2	633094.58	4174617.5
HRSG2	1	1	53.81	27.432	11	633136.06	4174600.5	633132.76	4174598.6	633127.26	4174591.1	633122.56	4174580.9	633124.66	4174579.2	633133.36	4174586.5
ACC	1	1	77.5	11.5824	4	632959.06	4174686.3	632997.62	4174738	633053.68	4174695.5	633014.31	4174644				
WSAC	1	1	53.83	3.109	4	633037.25	4174665.4	633046.31	4174676.7	633054.56	4174670.1	633045.5	4174658.8				
PUMPBLDG	1	1	54.77	3.048	4	632971	4174656	632975	4174660.8	632978.5	4174658.5	632974.81	4174653.5				
WTT	1	1	54.99	6.096	4	633000.06	4174620.3	633010.5	4174633	633028.38	4174619.8	633018.94	4174606.8				
Admin	1	1	55.44	6.096	4	632978.5	4174601.5	632987.94	4174614	633010.25	4174597	633000.75	4174584.3				
Control	1	1	55.17	4.572	4	633005.44	4174585	633012.13	4174593.3	633015.81	4174590	633009.25	4174582				
EMERGEN	1	1	54.69	1.8288	4	632997.94	4174630	633003.38	4174637.8	633007.5	4174635	633002.13	4174627.5				
STEAMTRB	1	1	54.1	6.096	4	633053.56	4174636.5	633055.06	4174639.5	633059.88	4174635.5	633057.88	4174633				
AuxBoile	1	1	54.24	4.572	4	633065.25	4174611.3	633066.63	4174613	633070.19	4174610	633068.88	4174608.3				
AirFan1	1	1	54.46	14.6304	4	633080.56	4174583.8	633085	4174589.5	633089.44	4174586	633085.19	4174580.3				
AirFan2	1	1	54.19	14.6304	4	633119	4174555	633123.12	4174560.5	633127	4174557.5	633123.12	4174552				

Building Name	Number of Tiers	Tier Number	Base Elevation (m)	Tier Height (m)	Number of Corners	Corner 7 East (X) (m)	Corner 7 North (Y) (m)	Corner 8 East (X) (m)	Corner 8 North (Y) (m)	Corner 9 East (X) (m)	Corner 9 North (Y) (m)	Corner 10 East (X) (m)	Corner 10 North (Y) (m)	Corner 11 East (X) (m)	Corner 11 North (Y) (m)
HRSG1	1	1	53.62	27.432	11	633100.08	4174624.6	633101.28	4174628.5	633099.38	4174627.6	633097.78	4174628.1	633096.88	4174630.1
HRSG2	1	1	53.81	27.432	11	633138.86	4174593.5	633140.06	4174597.4	633138.26	4174596.6	633136.56	4174597	633135.46	4174599

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-5
Operational Modeling Parameters - Emission Rates

Emission Rates for 1-hr, 3-hr, 8-hr, and 24-hr Modeling

Cases 1 - 5 (59 °F)

Source ID	NO_2		CO		SO_2		PM_{10}		$PM_{2.5}$	
	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)
HRSG1	8.139	64.600	23.625	187.500	0.331	2.630	0.731	5.800	0.731	5.800
HRSG2	8.139	64.600	23.625	187.500	0.331	2.630	0.731	5.800	0.731	5.800
WSAC1	--	--	--	--	--	--	0.013	0.100	0.013	0.100
WSAC2	--	--	--	--	--	--	0.013	0.100	0.013	0.100
EGEN	0.614	4.870	0.016	0.125	0.001	0.005	0.004	0.030	0.004	0.030
AUXBOIL	0.078	0.619	0.396	3.142	0.006	0.051	0.075	0.595	0.075	0.595
PUMP	0.214	1.695	0.191	1.517	0.000	0.003	0.010	0.076	0.010	0.076

Cases 6 - 10 (115 °F)

Source ID	NO_2		CO		SO_2		PM_{10}		$PM_{2.5}$	
	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)
HRSG1	23.662	187.800	23.625	187.500	0.331	2.630	0.731	5.800	0.731	5.800
HRSG2	23.662	187.800	23.625	187.500	0.331	2.630	0.731	5.800	0.731	5.800
WSAC1	--	--	--	--	--	--	0.013	0.100	0.013	0.100
WSAC2	--	--	--	--	--	--	0.013	0.100	0.013	0.100
EGEN	0.614	4.870	0.016	0.125	0.001	0.005	0.004	0.030	0.004	0.030
AUXBOIL	0.078	0.619	0.396	3.142	0.006	0.051	0.075	0.595	0.075	0.595
PUMP	0.214	1.695	0.191	1.517	0.000	0.003	0.010	0.076	0.010	0.076

Cases 11 - 14 (15 °F)

Source ID	NO_2		CO		SO_2		PM_{10}		$PM_{2.5}$	
	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)
HRSG1	25.137	199.500	23.625	187.500	0.331	2.630	0.731	5.800	0.731	5.800
HRSG2	25.137	199.500	23.625	187.500	0.331	2.630	0.731	5.800	0.731	5.800
WSAC1	--	--	--	--	--	--	0.013	0.100	0.013	0.100
WSAC2	--	--	--	--	--	--	0.013	0.100	0.013	0.100
EGEN	0.614	4.870	0.016	0.125	0.001	0.005	0.004	0.030	0.004	0.030
AUXBOIL	0.078	0.619	0.396	3.142	0.006	0.051	0.075	0.595	0.075	0.595
PUMP	0.214	1.695	0.191	1.517	0.000	0.003	0.010	0.076	0.010	0.076

Emission Rates for Annual Modeling

All Cases

Source ID	NO_2		SO_2		PM_{10}		$PM_{2.5}$	
	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)
HRSG1	1.91643	15.21000	0.11134	0.88370	0.46392	3.68200	0.46392	3.68200
HRSG2	1.91643	15.21000	0.11134	0.88370	0.46392	3.68200	0.46392	3.68200
WSAC1	--	--	--	--	0.00079	0.00630	0.00079	0.00630
WSAC2	--	--	--	--	0.00079	0.00630	0.00079	0.00630
EGEN	0.00350	0.02780	0.00000	0.00003	0.00002	0.00017	0.00002	0.00017
AUXBOIL	0.03563	0.28280	0.00294	0.02330	0.03423	0.27170	0.03423	0.27170
PUMP	0.00122	0.00970	0.00011	0.00084	0.00005	0.00043	0.00005	0.00043

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-6
Operational Modeling Results Summary

Case	Source	NO_2 (µg/m^3)		CO (µg/m3)		SO_2 (µg/m3)				PM_{10} (µg/m3)		$PM_{2.5}$ (µg/m3)	
		1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	Annual	24-hr	Annual	24-hr	Annual
1	ALL	--	1.066	293.479	131.875	4.117	1.422	0.546	0.063	5.165	0.331	5.165	0.331
1	EGENRUN	165.095	--	293.479	62.498	4.117	1.422	0.545	--	3.578	--	3.578	--
1	PUMPRUN	115.821	--	293.479	126.837	4.117	1.422	0.544	--	4.707	--	4.707	--
1	HRSG	96.515	0.954	293.479	61.148	4.117	1.420	0.528	0.055	1.164	0.231	1.164	0.231
1	HRSG1	48.200	0.479	145.072	30.822	2.035	0.722	0.265	0.028	0.584	0.116	0.584	0.116
1	HRSG2	48.334	0.479	148.958	30.771	2.089	0.707	0.265	0.028	0.583	0.116	0.583	0.116
1	WSAC	--	--	--	--	--	--	--	--	1.773	0.024	1.773	0.024
1	WSAC1	--	--	--	--	--	--	--	--	0.898	0.012	0.898	0.012
1	WSAC2	--	--	--	--	--	--	--	--	0.890	0.012	0.890	0.012
1	EGEN	165.095	0.101	15.277	7.585	0.578	0.410	0.106	0.000	0.679	0.001	0.679	0.001
1	AUXBOIL	11.088	0.267	56.256	26.520	0.913	0.461	0.176	0.022	2.057	0.256	2.057	0.256
1	PUMP	109.767	0.040	147.146	100.437	0.298	0.210	0.073	0.003	1.808	0.002	1.808	0.002
2	ALL	--	0.970	265.456	131.875	3.723	1.310	0.500	0.058	5.159	0.308	5.159	0.308
2	EGENRUN	165.095	--	265.456	57.870	3.723	1.310	0.498	--	3.572	--	3.572	--
2	PUMPRUN	115.821	--	265.456	126.838	3.723	1.310	0.496	--	4.702	--	4.702	--
2	HRSG	91.458	0.860	265.456	56.520	3.723	1.308	0.476	0.050	1.049	0.208	1.049	0.208
2	HRSG1	45.851	0.432	133.083	28.399	1.867	0.657	0.240	0.025	0.530	0.104	0.530	0.104
2	HRSG2	45.607	0.432	132.373	28.326	1.857	0.661	0.238	0.025	0.526	0.105	0.526	0.105
2	WSAC	--	--	--	--	--	--	--	--	1.773	0.024	1.773	0.024
2	WSAC1	--	--	--	--	--	--	--	--	0.898	0.012	0.898	0.012
2	WSAC2	--	--	--	--	--	--	--	--	0.890	0.012	0.890	0.012
2	EGEN	165.095	0.101	15.277	7.585	0.578	0.410	0.106	0.000	0.679	0.001	0.679	0.001
2	AUXBOIL	11.088	0.267	56.256	26.520	0.913	0.461	0.176	0.022	2.057	0.256	2.057	0.256
2	PUMP	109.767	0.040	147.146	100.437	0.298	0.210	0.073	0.003	1.808	0.002	1.808	0.002
3	ALL	--	0.948	260.665	131.875	3.656	1.299	0.488	0.056	5.158	0.303	5.158	0.303
3	EGENRUN	165.095	--	260.665	56.772	3.656	1.299	0.486	--	3.571	--	3.571	--
3	PUMPRUN	115.821	--	260.665	126.838	3.656	1.299	0.484	--	4.700	--	4.700	--
3	HRSG	89.808	0.839	260.665	55.422	3.656	1.297	0.462	0.049	1.019	0.203	1.019	0.203
3	HRSG1	45.026	0.421	130.688	27.833	1.833	0.648	0.233	0.024	0.514	0.102	0.514	0.102
3	HRSG2	44.781	0.421	129.977	27.781	1.823	0.655	0.232	0.024	0.511	0.102	0.511	0.102
3	WSAC	--	--	--	--	--	--	--	--	1.773	0.024	1.773	0.024
3	WSAC1	--	--	--	--	--	--	--	--	0.898	0.012	0.898	0.012
3	WSAC2	--	--	--	--	--	--	--	--	0.890	0.012	0.890	0.012
3	EGEN	165.095	0.101	15.277	7.585	0.578	0.410	0.106	0.000	0.679	0.001	0.679	0.001
3	AUXBOIL	11.088	0.267	56.256	26.520	0.913	0.461	0.176	0.022	2.057	0.256	2.057	0.256
3	PUMP	109.767	0.040	147.146	100.437	0.298	0.210	0.073	0.003	1.808	0.002	1.808	0.002
4	ALL	--	1.226	328.700	131.875	4.611	1.537	0.660	0.072	5.172	0.372	5.172	0.372
4	EGENRUN	165.095	--	328.700	72.778	4.611	1.537	0.659	--	3.585	--	3.585	--
4	PUMPRUN	115.821	--	328.700	126.837	4.611	1.537	0.658	--	4.714	--	4.714	--
4	HRSG	97.728	1.107	328.700	71.706	4.611	1.537	0.631	0.064	1.392	0.268	1.392	0.268
4	HRSG1	48.781	0.555	161.929	36.003	2.271	0.765	0.317	0.032	0.699	0.134	0.699	0.134
4	HRSG2	48.947	0.555	166.771	35.771	2.339	0.780	0.316	0.032	0.697	0.134	0.697	0.134
4	WSAC	--	--	--	--	--	--	--	--	1.773	0.024	1.773	0.024
4	WSAC1	--	--	--	--	--	--	--	--	0.898	0.012	0.898	0.012
4	WSAC2	--	--	--	--	--	--	--	--	0.890	0.012	0.890	0.012
4	EGEN	165.095	0.101	15.277	7.585	0.578	0.410	0.106	0.000	0.679	0.001	0.679	0.001
4	AUXBOIL	11.088	0.267	56.256	26.520	0.913	0.461	0.176	0.022	2.057	0.256	2.057	0.256
4	PUMP	109.767	0.040	147.146	100.437	0.298	0.210	0.073	0.003	1.808	0.002	1.808	0.002
5	ALL	--	1.485	399.131	131.875	5.598	1.866	0.818	0.088	5.183	0.438	5.183	0.438
5	EGENRUN	165.095	--	399.130	89.238	5.598	1.866	0.817	--	3.596	--	3.596	--
5	PUMPRUN	115.821	--	399.131	126.837	5.598	1.866	0.815	--	4.725	--	4.725	--
5	HRSG	105.606	1.354	399.130	87.937	5.598	1.866	0.785	0.079	1.731	0.328	1.731	0.328
5	HRSG1	52.789	0.681	197.023	44.139	2.764	0.921	0.394	0.040	0.868	0.165	0.868	0.165
5	HRSG2	52.942	0.681	202.107	44.050	2.835	0.945	0.393	0.040	0.866	0.165	0.866	0.165
5	WSAC	--	--	--	--	--	--	--	--	1.773	0.024	1.773	0.024
5	WSAC1	--	--	--	--	--	--	--	--	0.898	0.012	0.898	0.012
5	WSAC2	--	--	--	--	--	--	--	--	0.890	0.012	0.890	0.012
5	EGEN	165.095	0.101	15.277	7.585	0.578	0.410	0.106	0.000	0.679	0.001	0.679	0.001
5	AUXBOIL	11.088	0.267	56.256	26.520	0.913	0.461	0.176	0.022	2.057	0.256	2.057	0.256
5	PUMP	109.767	0.040	147.146	100.437	0.298	0.210	0.073	0.003	1.808	0.002	1.808	0.002
6	ALL	--	1.050	282.363	131.875	3.961	1.381	0.543	0.062	5.163	0.328	5.163	0.328
6	EGENRUN	210.032	--	282.363	61.616	3.961	1.381	0.542	--	3.577	--	3.577	--
6	PUMPRUN	209.886	--	282.363	126.837	3.961	1.380	0.542	--	4.706	--	4.706	--
6	HRSG	209.831	0.937	282.363	60.266	3.961	1.378	0.525	0.054	1.158	0.227	1.158	0.227
6	HRSG1	105.440	0.470	141.462	30.365	1.984	0.701	0.263	0.027	0.581	0.114	0.581	0.114
6	HRSG2	105.430	0.470	143.283	30.320	2.010	0.682	0.263	0.027	0.580	0.114	0.580	0.114
6	WSAC	--	--	--	--	--	--	--	--	1.773	0.024	1.773	0.024
6	WSAC1	--	--	--	--	--	--	--	--	0.898	0.012	0.898	0.012
6	WSAC2	--	--	--	--	--	--	--	--	0.890	0.012	0.890	0.012
6	EGEN	165.095	0.101	15.277	7.585	0.578	0.410	0.106	0.000	0.679	0.001	0.679	0.001
6	AUXBOIL	11.088	0.267	56.256	26.520	0.913	0.461	0.176	0.022	2.057	0.256	2.057	0.256
6	PUMP	109.767	0.040	147.146	100.437	0.298	0.210	0.073	0.003	1.808	0.002	1.808	0.002
7	ALL	--	1.069	282.719	131.875	3.966	1.375	0.564	0.063	5.164	0.333	5.164	0.333

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-6
Operational Modeling Results Summary

Case	Source	NO_2 (µg/m^3)		CO (µg/m3)		SO_2 (µg/m3)				PM_{10} (µg/m3)		$PM_{2.5}$ (µg/m3)	
		1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	Annual	24-hr	Annual	24-hr	Annual
7	EGENRUN	209.956	--	282.719	62.673	3.966	1.375	0.562	--	3.577	--	3.577	--
7	PUMPRUN	209.809	--	282.719	126.837	3.966	1.375	0.559	--	4.706	--	4.706	--
7	HRSG	209.755	0.954	282.719	61.165	3.966	1.372	0.543	0.055	1.196	0.231	1.196	0.231
7	HRSG1	105.400	0.479	141.583	30.870	1.986	0.698	0.273	0.028	0.601	0.116	0.601	0.116
7	HRSG2	105.386	0.480	143.465	30.843	2.012	0.679	0.272	0.028	0.599	0.116	0.599	0.116
7	WSAC	--	--	--	--	--	--	--	--	1.773	0.024	1.773	0.024
7	WSAC1	--	--	--	--	--	--	--	--	0.898	0.012	0.898	0.012
7	WSAC2	--	--	--	--	--	--	--	--	0.890	0.012	0.890	0.012
7	EGEN	165.095	0.101	15.277	7.585	0.578	0.410	0.106	0.000	0.679	0.001	0.679	0.001
7	AUXBOIL	11.088	0.267	56.256	26.520	0.913	0.461	0.176	0.022	2.057	0.256	2.057	0.256
7	PUMP	109.767	0.040	147.146	100.437	0.298	0.210	0.073	0.003	1.808	0.002	1.808	0.002
8	ALL	--	0.994	267.676	131.875	3.755	1.313	0.521	0.059	5.160	0.315	5.160	0.315
8	EGENRUN	206.552	--	267.676	58.896	3.755	1.313	0.519	--	3.573	--	3.573	--
8	PUMPRUN	206.406	--	267.676	126.838	3.755	1.312	0.517	--	4.702	--	4.702	--
8	HRSG	206.351	0.882	267.676	57.547	3.755	1.311	0.496	0.051	1.094	0.214	1.094	0.214
8	HRSG1	105.061	0.442	134.192	28.937	1.882	0.660	0.250	0.026	0.551	0.107	0.551	0.107
8	HRSG2	105.024	0.443	133.484	28.878	1.872	0.662	0.249	0.026	0.548	0.107	0.548	0.107
8	WSAC	--	--	--	--	--	--	--	--	1.773	0.024	1.773	0.024
8	WSAC1	--	--	--	--	--	--	--	--	0.898	0.012	0.898	0.012
8	WSAC2	--	--	--	--	--	--	--	--	0.890	0.012	0.890	0.012
8	EGEN	165.095	0.101	15.277	7.585	0.578	0.410	0.106	0.000	0.679	0.001	0.679	0.001
8	AUXBOIL	11.088	0.267	56.256	26.520	0.913	0.461	0.176	0.022	2.057	0.256	2.057	0.256
8	PUMP	109.767	0.040	147.146	100.437	0.298	0.210	0.073	0.003	1.808	0.002	1.808	0.002
9	ALL	--	1.337	357.105	131.875	5.009	1.670	0.732	0.079	5.176	0.401	5.176	0.401
9	EGENRUN	212.890	--	357.104	80.308	5.009	1.670	0.730	--	3.589	--	3.589	--
9	PUMPRUN	212.723	--	357.104	126.837	5.009	1.670	0.729	--	4.718	--	4.718	--
9	HRSG	212.668	1.210	357.104	79.112	5.009	1.670	0.701	0.070	1.545	0.293	1.545	0.293
9	HRSG1	106.780	0.609	176.402	39.818	2.474	0.825	0.352	0.035	0.777	0.147	0.777	0.147
9	HRSG2	106.615	0.608	180.702	39.692	2.535	0.845	0.351	0.035	0.774	0.147	0.774	0.147
9	WSAC	--	--	--	--	--	--	--	--	1.773	0.024	1.773	0.024
9	WSAC1	--	--	--	--	--	--	--	--	0.898	0.012	0.898	0.012
9	WSAC2	--	--	--	--	--	--	--	--	0.890	0.012	0.890	0.012
9	EGEN	165.095	0.101	15.277	7.585	0.578	0.410	0.106	0.000	0.679	0.001	0.679	0.001
9	AUXBOIL	11.088	0.267	56.256	26.520	0.913	0.461	0.176	0.022	2.057	0.256	2.057	0.256
9	PUMP	109.767	0.040	147.146	100.437	0.298	0.210	0.073	0.003	1.808	0.002	1.808	0.002
10	ALL	--	1.523	401.397	131.875	5.630	1.877	0.846	0.090	5.183	0.448	5.183	0.448
10	EGENRUN	223.045	--	401.396	92.091	5.630	1.877	0.844	--	3.597	--	3.597	--
10	PUMPRUN	222.803	--	401.397	126.837	5.630	1.877	0.842	--	4.726	--	4.726	--
10	HRSG	222.692	1.393	401.396	90.790	5.630	1.877	0.812	0.081	1.790	0.337	1.790	0.337
10	HRSG1	112.866	0.699	198.531	45.430	2.785	0.928	0.407	0.041	0.899	0.169	0.899	0.169
10	HRSG2	112.847	0.699	203.273	45.436	2.851	0.950	0.406	0.041	0.895	0.169	0.895	0.169
10	WSAC	--	--	--	--	--	--	--	--	1.773	0.024	1.773	0.024
10	WSAC1	--	--	--	--	--	--	--	--	0.898	0.012	0.898	0.012
10	WSAC2	--	--	--	--	--	--	--	--	0.890	0.012	0.890	0.012
10	EGEN	165.095	0.101	15.277	7.585	0.578	0.410	0.106	0.000	0.679	0.001	0.679	0.001
10	AUXBOIL	11.088	0.267	56.256	26.520	0.913	0.461	0.176	0.022	2.057	0.256	2.057	0.256
10	PUMP	109.767	0.040	147.146	100.437	0.298	0.210	0.073	0.003	1.808	0.002	1.808	0.002
11	ALL	--	0.961	267.393	131.875	3.751	1.317	0.480	0.057	5.159	0.305	5.159	0.305
11	EGENRUN	210.865	--	267.393	57.408	3.751	1.317	0.480	--	3.573	--	3.573	--
11	PUMPRUN	210.719	--	267.393	126.838	3.751	1.317	0.479	--	4.702	--	4.702	--
11	HRSG	210.664	0.854	267.393	56.058	3.751	1.315	0.463	0.050	1.020	0.207	1.020	0.207
11	HRSG1	105.877	0.429	134.051	28.151	1.880	0.667	0.233	0.025	0.514	0.104	0.514	0.104
11	HRSG2	105.844	0.429	133.343	28.116	1.870	0.665	0.231	0.025	0.510	0.104	0.510	0.104
11	WSAC	--	--	--	--	--	--	--	--	1.773	0.024	1.773	0.024
11	WSAC1	--	--	--	--	--	--	--	--	0.898	0.012	0.898	0.012
11	WSAC2	--	--	--	--	--	--	--	--	0.890	0.012	0.890	0.012
11	EGEN	165.095	0.101	15.277	7.585	0.578	0.410	0.106	0.000	0.679	0.001	0.679	0.001
11	AUXBOIL	11.088	0.267	56.256	26.520	0.913	0.461	0.176	0.022	2.057	0.256	2.057	0.256
11	PUMP	109.767	0.040	147.146	100.437	0.298	0.210	0.073	0.003	1.808	0.002	1.808	0.002
12	ALL	--	0.855	239.414	131.875	3.358	1.235	0.432	0.051	5.152	0.298	5.152	0.298
12	EGENRUN	208.850	--	239.414	51.800	3.358	1.235	0.431	--	3.566	--	3.566	--
12	PUMPRUN	208.764	--	239.414	126.838	3.358	1.235	0.429	--	4.695	--	4.695	--
12	HRSG	208.733	0.751	239.414	50.451	3.358	1.233	0.409	0.044	0.901	0.182	0.901	0.182
12	HRSG1	104.817	0.376	120.006	25.308	1.683	0.617	0.205	0.022	0.452	0.091	0.452	0.091
12	HRSG2	104.742	0.376	119.628	25.343	1.678	0.621	0.205	0.022	0.452	0.091	0.452	0.091
12	WSAC	--	--	--	--	--	--	--	--	1.773	0.024	1.773	0.024
12	WSAC1	--	--	--	--	--	--	--	--	0.898	0.012	0.898	0.012
12	WSAC2	--	--	--	--	--	--	--	--	0.890	0.012	0.890	0.012
12	EGEN	165.095	0.101	15.277	7.585	0.578	0.410	0.106	0.000	0.679	0.001	0.679	0.001
12	AUXBOIL	11.088	0.267	56.256	26.520	0.913	0.461	0.176	0.022	2.057	0.256	2.057	0.256
12	PUMP	109.767	0.040	147.146	100.437	0.298	0.210	0.073	0.003	1.808	0.002	1.808	0.002
13	ALL	--	1.067	284.477	131.875	3.990	1.383	0.558	0.063	5.164	0.333	5.164	0.333
13	EGENRUN	211.401	--	284.477	62.503	3.990	1.383	0.556	--	3.577	--	3.577	--

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-6
Operational Modeling Results Summary

Case	Source	NO_2 (µg/m^3)		CO (µg/m3)		SO_2 (µg/m3)				PM_{10} (µg/m3)		$PM_{2.5}$ (µg/m3)	
		1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	Annual	24-hr	Annual	24-hr	Annual
13	PUMPRUN	211.255	--	284.477	126.837	3.990	1.383	0.556	--	4.706	--	4.706	--
13	HRSG	211.200	0.953	284.477	61.053	3.990	1.381	0.539	0.055	1.189	0.231	1.189	0.231
13	HRSG1	106.157	0.478	142.173	30.796	1.994	0.702	0.271	0.028	0.597	0.116	0.597	0.116
13	HRSG2	106.146	0.479	144.362	30.767	2.025	0.684	0.270	0.028	0.595	0.116	0.595	0.116
13	WSAC	--	--	--	--	--	--	--	--	1.773	0.024	1.773	0.024
13	WSAC1	--	--	--	--	--	--	--	--	0.898	0.012	0.898	0.012
13	WSAC2	--	--	--	--	--	--	--	--	0.890	0.012	0.890	0.012
13	EGEN	165.095	0.101	15.277	7.585	0.578	0.410	0.106	0.000	0.679	0.001	0.679	0.001
13	AUXBOIL	11.088	0.267	56.256	26.520	0.913	0.461	0.176	0.022	2.057	0.256	2.057	0.256
13	PUMP	109.767	0.040	147.146	100.437	0.298	0.210	0.073	0.003	1.808	0.002	1.808	0.002
14	ALL	--	1.342	364.211	131.875	5.109	1.703	0.731	0.079	5.177	0.402	5.177	0.402
14	EGENRUN	222.278	--	364.211	80.265	5.109	1.703	0.730	--	3.590	--	3.590	--
14	PUMPRUN	222.035	--	364.211	126.837	5.109	1.703	0.728	--	4.719	--	4.719	--
14	HRSG	221.924	1.217	364.211	79.077	5.109	1.703	0.701	0.071	1.545	0.295	1.545	0.295
14	HRSG1	112.746	0.612	179.894	39.799	2.523	0.841	0.352	0.036	0.777	0.148	0.777	0.148
14	HRSG2	112.462	0.611	184.317	39.673	2.585	0.862	0.351	0.036	0.774	0.148	0.774	0.148
14	WSAC	--	--	--	--	--	--	--	--	1.773	0.024	1.773	0.024
14	WSAC1	--	--	--	--	--	--	--	--	0.898	0.012	0.898	0.012
14	WSAC2	--	--	--	--	--	--	--	--	0.890	0.012	0.890	0.012
14	EGEN	165.095	0.101	15.277	7.585	0.578	0.410	0.106	0.000	0.679	0.001	0.679	0.001
14	AUXBOIL	11.088	0.267	56.256	26.520	0.913	0.461	0.176	0.022	2.057	0.256	2.057	0.256
14	PUMP	109.767	0.040	147.146	100.437	0.298	0.210	0.073	0.003	1.808	0.002	1.808	0.002

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-7
Construction Source Parameters for AERMOD Input

Area Sources

Source ID	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Release Height (m)	Length (m)	Width (m)	Angle from North
EXHAUST	632824.75	4174704.1	56	4.6	355	125	37.000
FUGITIVE	632824.75	4174704.1	56	2	355	125	37.000

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-8
Construction Modeling Parameters - Emission Rates

Emission Rates for 1-hr, 3-hr, 8-hr, and 24-hr Modeling

Source ID	NO_2		CO		SO_2		PM_{10}		$PM_{2.5}$	
	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)
EXHAUST	1.625	12.897	0.766	6.079	0.002	0.014	0.112	0.889	0.100	0.791
FUGITIVE	--	--	--	--	--	--	0.096	0.758	0.010	0.076

Emission Rates for Annual Modeling

Source ID	NO_2		CO		SO_2		PM_{10}		$PM_{2.5}$	
	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)
EXHAUST	0.45964	3.64800	0.216	1.714	0.00050	0.00400	0.02772	0.22000	0.02470	0.19600
FUGITIVE	--	--	--	--	--	--	0.02709	0.21500	0.00277	0.02200

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-9
Construction Modeling Results

Source	NO_2 (µg/m^3)		CO (µg/m3)		SO_2 (µg/m3)				PM_{10} (µg/m3)		$PM_{2.5}$ (µg/m3)	
	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	Annual	24-hr	Annual	24-hr	Annual
ALL	211.129	7.118	726.677	180.169	1.674	0.910	0.161	0.008	24.231	0.909	10.438	0.432
EXHAUST	211.129	7.118	726.677	180.169	1.674	0.910	0.161	0.008	10.206	0.429	9.081	0.382
FUGITIVE	--	--	--	--	--	--	--	--	14.088	0.480	1.412	0.049

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-10a
First Quarter Wind Table

Frequency Distribution (Hours)
Date Range: Jan 1 - Mar 31

Wind Speed (m/s) Wind Direction (from)	0.5 -2.1	2.1 -3.6	3.6 -5.7	5.7 -8.8	8.8 - 11.1	>= 11.1	Total
N	34	31	4	0	0	0	69
NNE	26	19	0	0	0	0	45
NE	19	11	0	0	0	0	30
ENE	25	11	0	0	0	0	36
E	39	15	2	0	0	0	56
ESE	92	79	7	3	0	0	181
SE	49	49	12	6	1	0	117
SSE	34	25	12	5	0	0	76
S	16	12	1	0	0	0	29
SSW	12	9	2	1	0	0	24
SW	18	6	2	0	0	0	26
WSW	22	7	1	0	0	0	30
W	24	24	10	3	0	0	61
WNW	14	48	92	46	5	0	205
NW	40	100	88	46	13	2	289
NNW	37	64	31	5	0	0	137
Total	501	510	264	115	19	2	1937

Frequency of Calm Winds: 526

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-10b
Second Quarter Wind Table

Frequency Distribution (Hours)
Date Range: Apr 1 - Jun 30

Wind Speed (m/s) Wind Direction (from)	0.5 -2.1	2.1 -3.6	3.6 -5.7	5.7 -8.8	8.8 - 11.1	>= 11.1	Total
N	50	130	39	1	0	0	220
NNE	26	32	2	0	0	0	60
NE	7	11	0	0	0	0	18
ENE	9	3	2	0	0	0	14
E	6	8	3	1	0	0	18
ESE	15	22	7	0	0	0	44
SE	17	23	18	4	1	0	63
SSE	8	15	15	0	2	0	40
S	8	15	4	3	0	0	30
SSW	3	6	7	4	0	0	20
SW	10	5	5	5	0	0	25
WSW	9	9	4	1	0	0	23
W	7	24	13	8	1	1	54
WNW	6	46	107	60	5	1	225
NW	29	161	270	94	3	0	557
NNW	36	181	202	45	3	0	467
Total	246	691	698	226	15	2	2057

Frequency of Calm Winds: 179

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-10c
Third Quarter Wind Table

Frequency Distribution (Hours)
Date Range: Jul 1 - Sep 30

Wind Speed (m/s) Wind Direction (from)	0.5 -2.1	2.1 -3.6	3.6 -5.7	5.7 -8.8	8.8 - 11.1	>= 11.1	Total
N	62	161	50	0	0	0	273
NNE	18	25	3	0	0	0	46
NE	6	4	0	0	0	0	10
ENE	3	2	0	0	0	0	5
E	6	1	0	0	0	0	7
ESE	12	5	0	0	0	0	17
SE	2	1	0	0	1	0	3
SSE	3	0	0	0	0	0	3
S	5	0	0	0	0	0	5
SSW	1	1	0	0	0	0	2
SW	5	3	0	0	0	0	8
WSW	8	7	2	0	0	0	17
W	11	17	8	0	0	0	36
WNW	13	63	87	43	1	0	207
NW	44	233	316	93	0	0	686
NNW	49	302	291	36	0	0	678
Total	248	825	757	172	1	0	2134

Frequency of Calm Winds: 131

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-10d
Fourth Quarter Wind Table

Frequency Distribution (Hours)
Date Range: Oct 1 - Dec 31

Wind Speed (m/s) Wind Direction (from)	0.5 -2.1	2.1 -3.6	3.6 -5.7	5.7 -8.8	8.8 - 11.1	>= 11.1	Total
N	38	31	4	0	0	0	73
NNE	11	15	0	0	0	0	26
NE	12	2	0	0	0	0	14
ENE	13	4	1	0	0	0	18
E	36	11	4	0	0	0	51
ESE	115	78	14	1	2	1	211
SE	78	97	52	22	5	1	255
SSE	30	35	16	1	0	0	82
S	17	10	1	0	0	0	28
SSW	9	3	0	0	0	0	12
SW	10	3	0	0	0	0	13
WSW	21	6	0	0	0	0	27
W	32	15	10	0	0	0	57
WNW	24	59	69	35	0	0	187
NW	45	98	100	53	2	0	298
NNW	38	97	42	6	0	0	183
Total	529	564	313	118	9	2	2125

Frequency of Calm Winds: 590

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-11
Ambient Air Quality Standards Summary

Ambient Air Quality Standards						
Pollutant	Averaging Time	California Standards [1]		Federal Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	—
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m^3)		—		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	—	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	1 Hour	0.25 ppm (655 µg/m^3)		—	—	—
Lead[8]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[8]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990 California Air Resources Board (04/01/08)

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calender year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.

8. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

GWF Tracy Combined Cycle Power Plant Project
Table 5.1C-12
Climatic Summary for Tracy Carbona, CA

TRACY CARBONA, CALIFORNIA (048999)

Period of Record Monthly Climate Summary

Period of Record : 10/1/1949 to 6/30/2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	54.1	61.0	66.8	73.2	80.8	88.2	93.8	92.2	87.9	78.6	64.9	54.7	74.7
Average Min. Temperature (F)	36.7	40.0	42.6	45.4	50.2	55.0	57.0	55.6	53.8	48.7	42.1	36.6	47.0
Average Total Precipitation (in.)	1.89	1.71	1.39	0.83	0.47	0.08	0.03	0.09	0.23	0.51	1.13	1.56	9.91
Average Total SnowFall (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

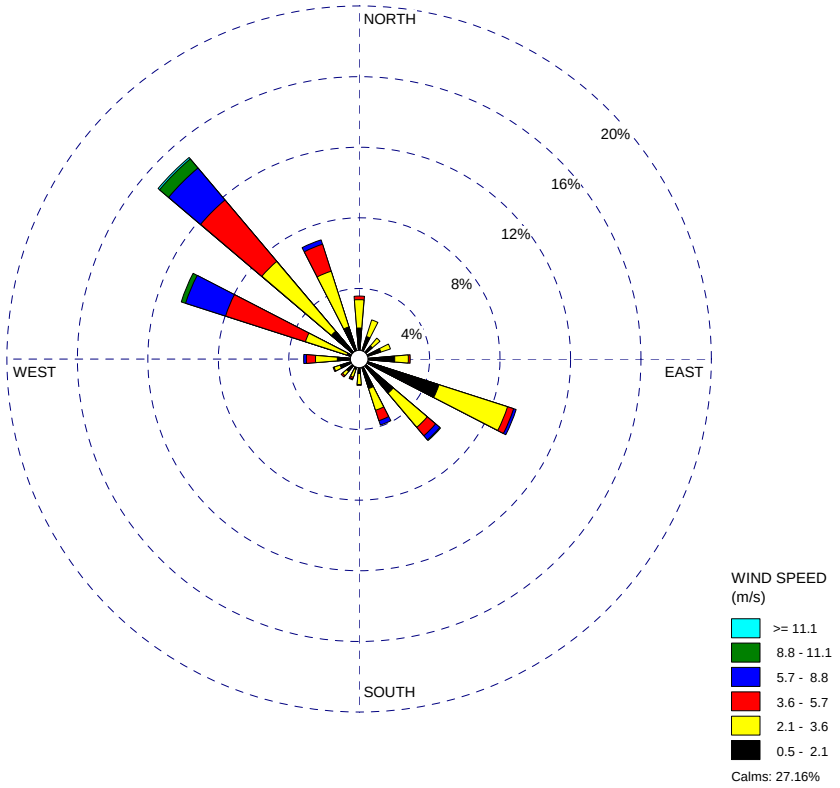
Percent of possible observations for period of record.
Max. Temp.: 94.9% Min. Temp.: 94.4% Precipitation: 95.8% Snowfall: 97% Snow Depth: 96.8%
Check Station Metadata or Metadata graphics for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu

Tracy Power Plant
Figure 5.1C-1a
First Quarter Wind Rose
Date Range: Jan 1 – Mar 31

WIND ROSE PLOT:
Station #23258
Tracy Power Plant

DISPLAY:
Wind Speed
Direction (blowing from)



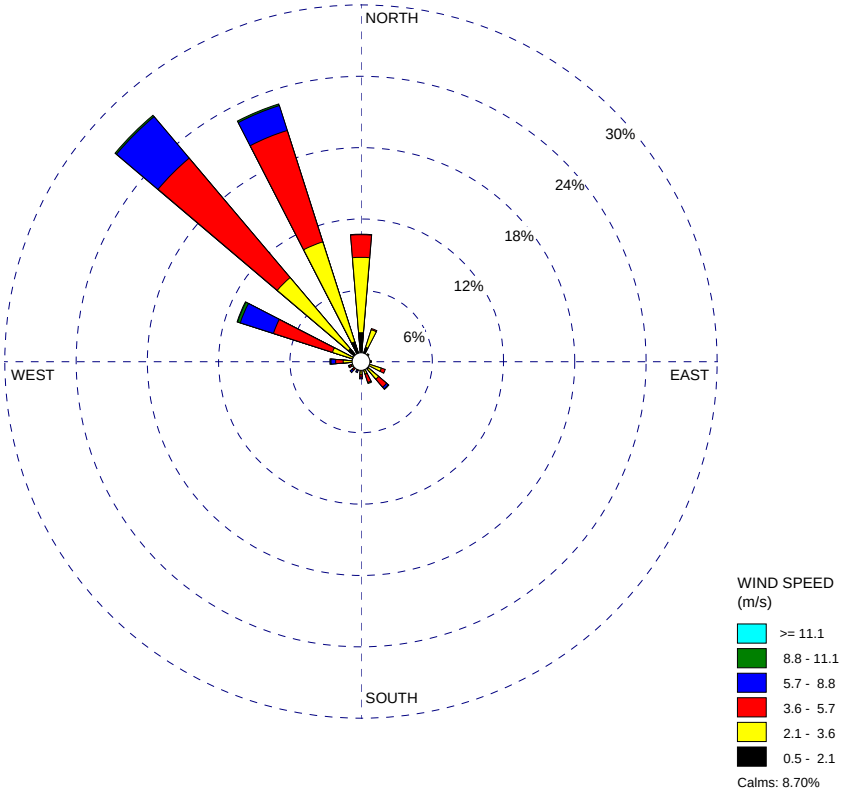
COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	2003 **Jan 1 - Mar 31** **00:00 - 23:00**	MODELER:	
	CALM WINDS: **27.16%**	TOTAL COUNT: **1937 hrs.**	
	AVG. WIND SPEED: **2.43 m/s**	DATE: **6/11/2008**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

Tracy Power Plant
Figure 5.1C-1b
Second Quarter Wind Rose
Date Range: Apr 1 – Jun 30

WIND ROSE PLOT:
Station #23258
Tracy Power Plant

DISPLAY:
Wind Speed
Direction (blowing from)



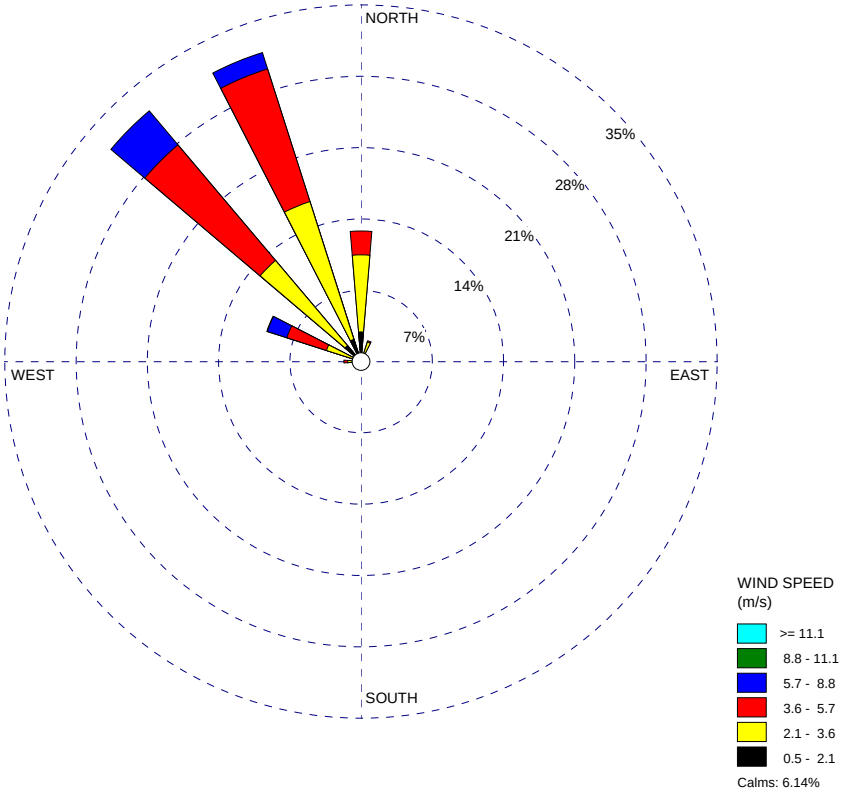
COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	2003 **Apr 1 - Jun 30** **00:00 - 23:00**	MODELER:	
	CALM WINDS: **8.70%**	TOTAL COUNT: **2057 hrs.**	
	AVG. WIND SPEED: **3.71 m/s**	DATE: **6/11/2008**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

Tracy Power Plant
Figure 5.1C-1c
Third Quarter Wind Rose
Date Range: Jul 1 – Sep 30

WIND ROSE PLOT:
Station #23258
Tracy Power Plant

DISPLAY:
Wind Speed
Direction (blowing from)



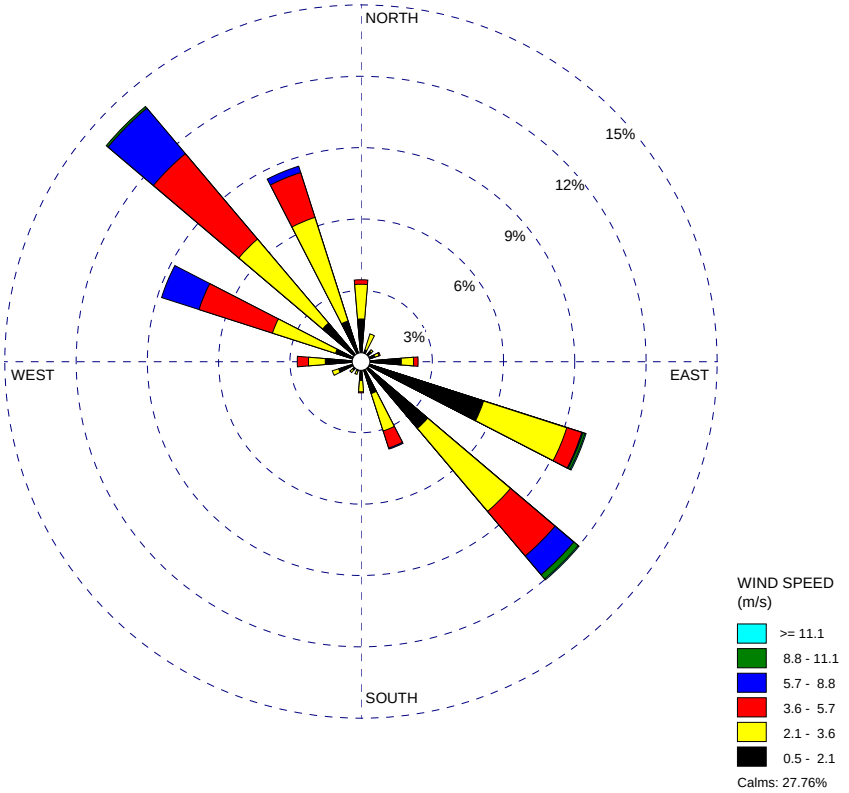
COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	2003 **Jul 1 - Sep 30** **00:00 - 23:00**	MODELER:	
	CALM WINDS: **6.14%**	TOTAL COUNT: **2134 hrs.**	
	AVG. WIND SPEED: **3.65 m/s**	DATE: **6/11/2008**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

Tracy Power Plant
Figure 5.1C-1d
Fourth Quarter Wind Rose
Date Range: Oct 1 – Dec 31

WIND ROSE PLOT:
Station #23258
Tracy Power Plant

DISPLAY:
Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	2003 **Oct 1 - Dec 31** **00:00 - 23:00**	MODELER:	
	CALM WINDS: **27.76%**	TOTAL COUNT: **2125 hrs.**	
	AVG. WIND SPEED: **2.37 m/s**	DATE: **6/11/2008**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

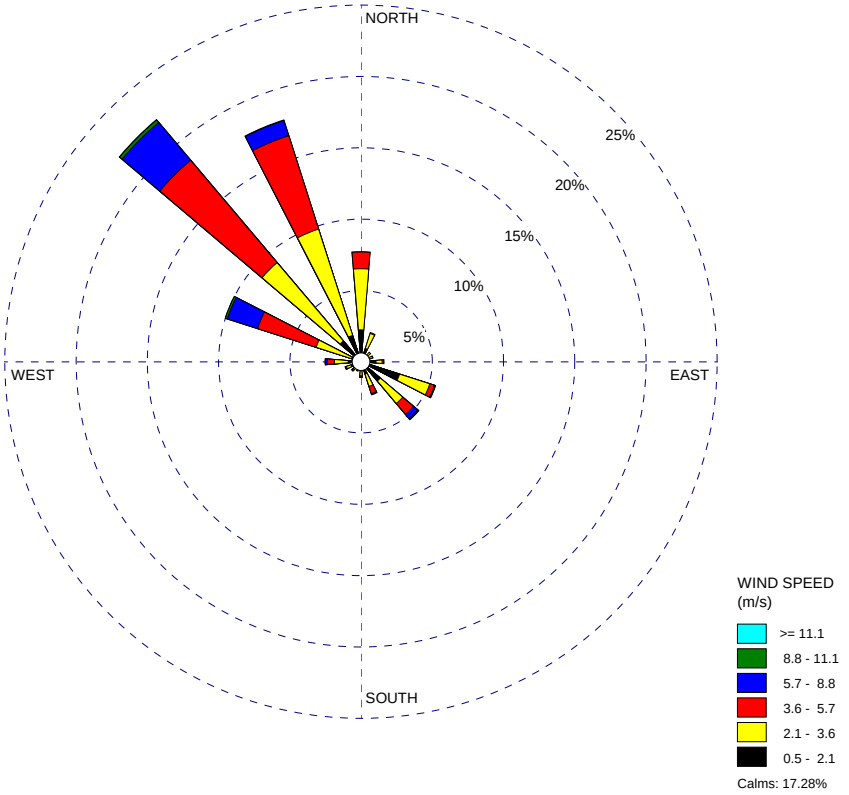
Tracy Power Plant
Figure 5.1C-1e
Annual Wind Rose
Date Range: Jan 1 – Dec 31

WIND ROSE PLOT:

Station #23258
Tracy Power Plant

DISPLAY:

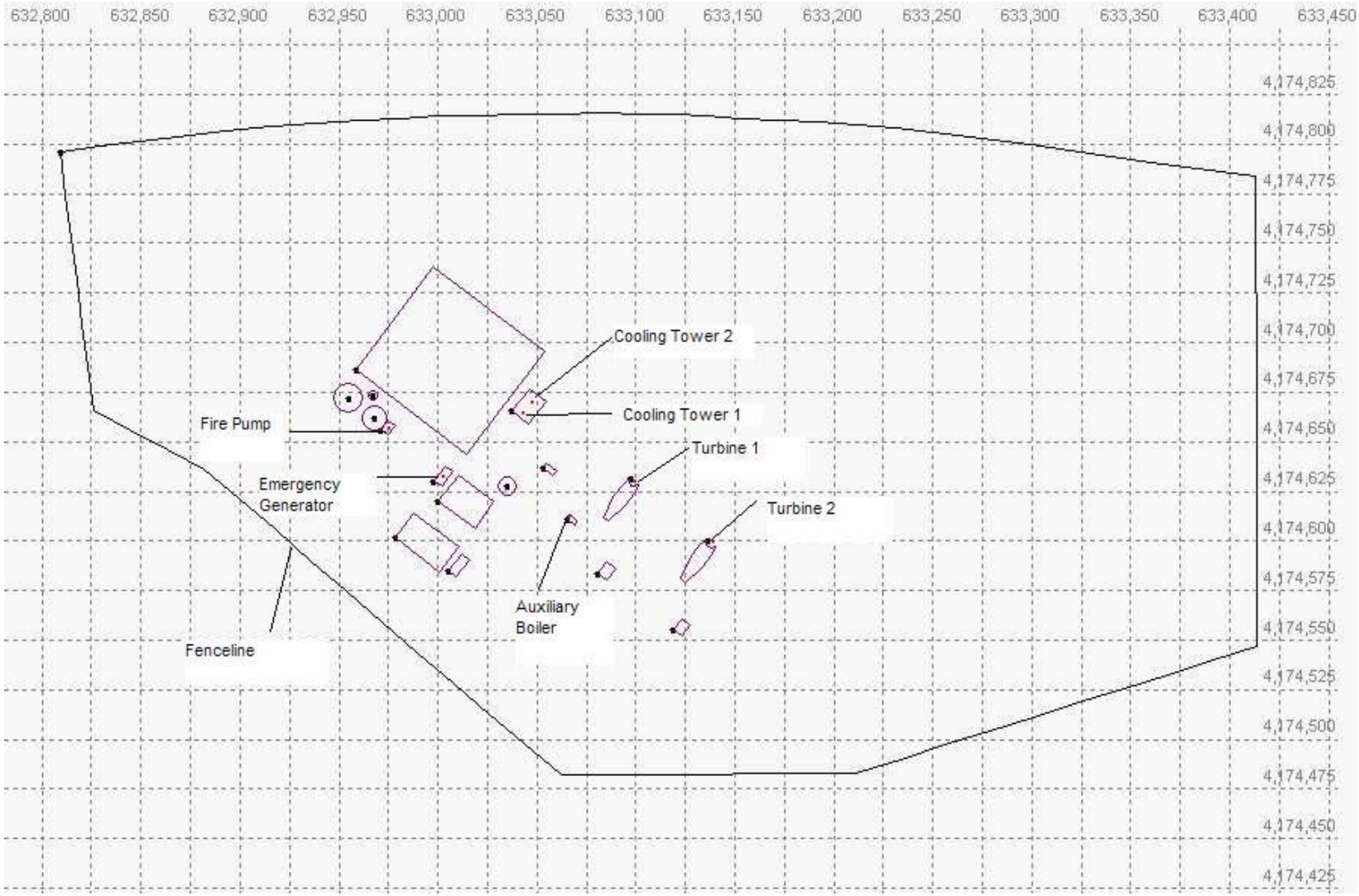
Wind Speed
Direction (blowing from)



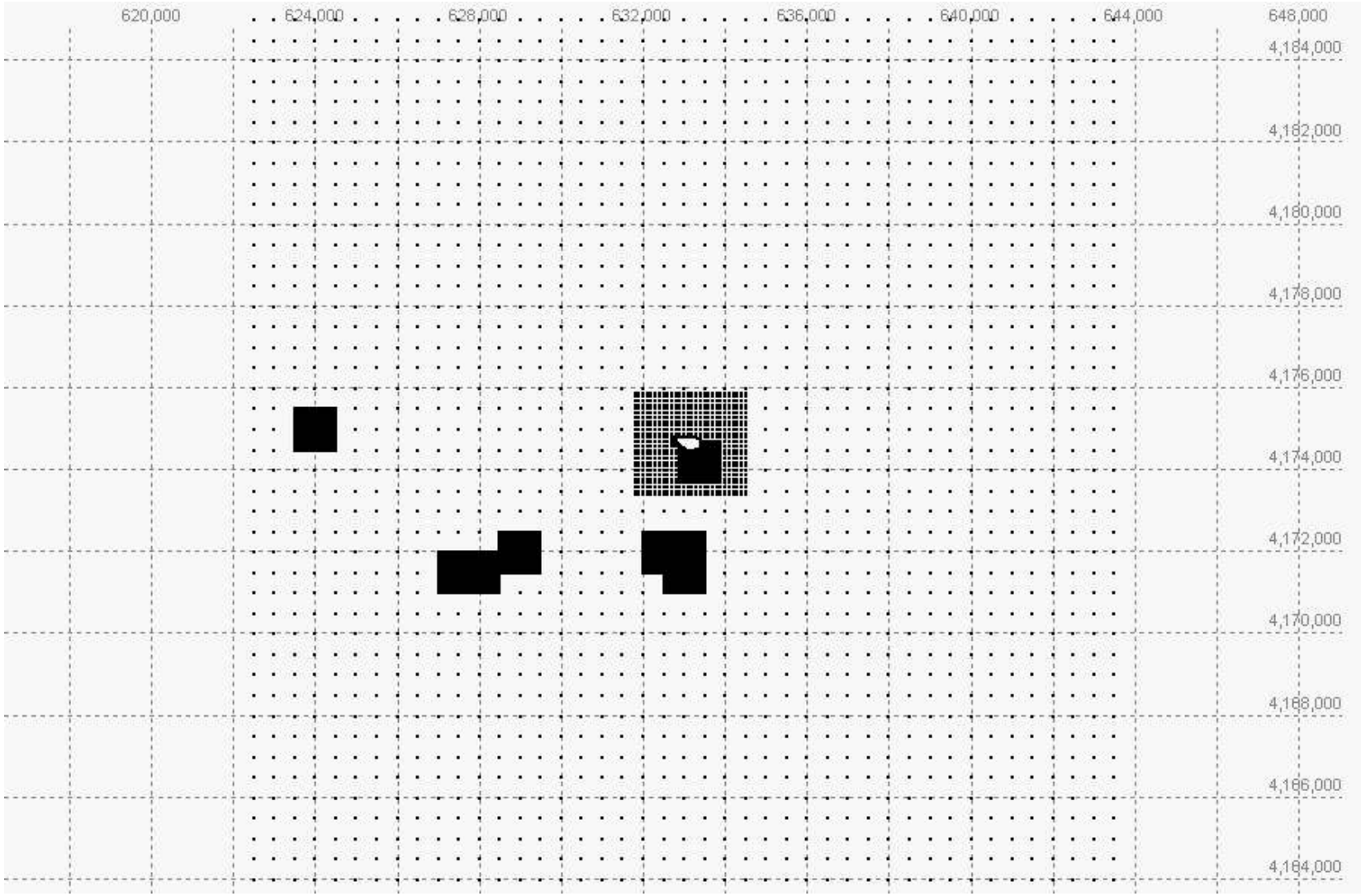
COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	2003 **Jan 1 - Dec 31** **00:00 - 23:00**	MODELER:	
	CALM WINDS: **17.28%**	TOTAL COUNT: **8253 hrs.**	
	AVG. WIND SPEED: **3.05 m/s**	DATE: **6/11/2008**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

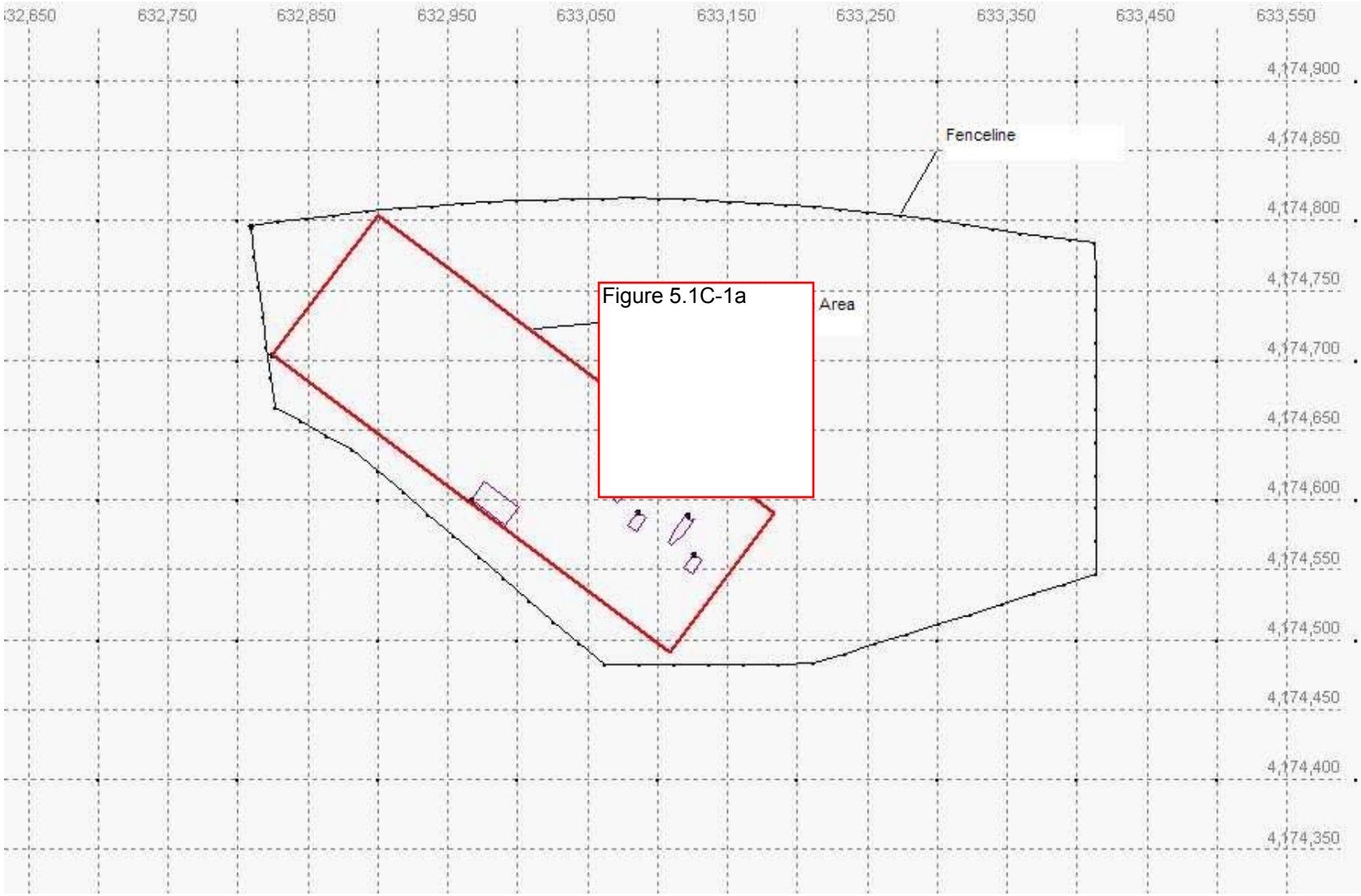
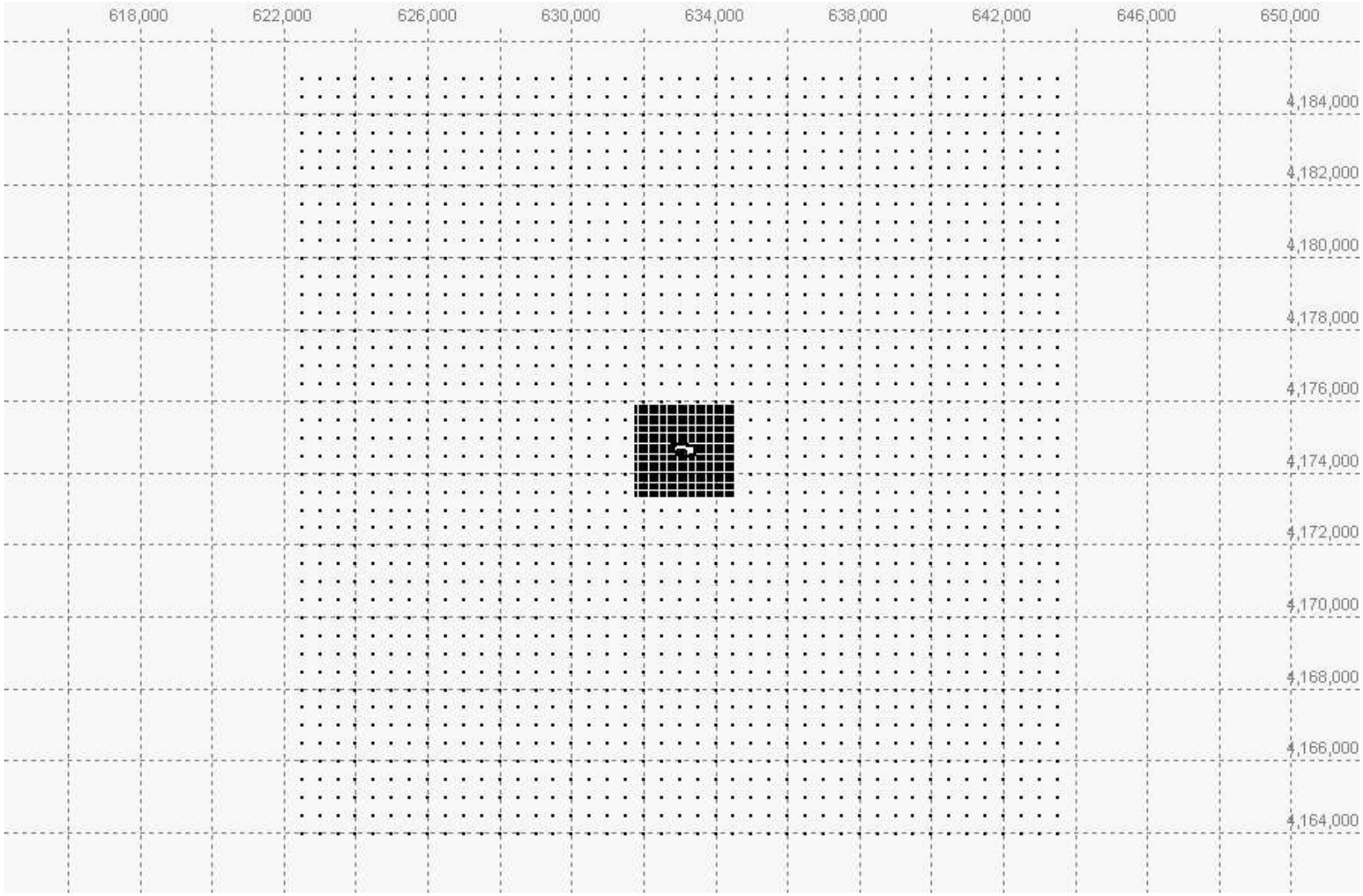
Tracy Power Plant
Figure 5.1C-2
Operations Model Setup



Tracy Power Plant
Figure 5.1C-3
Operations Coarse and Fine Receptor Grids



Tracy Power Plant
Figure 5.1C-4
Construction Model Setup



Tracy Power Plant
Figure 5.1C-5
Construction Receptor Grid