

## DOCKETED

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**Appendix 5.1C**  
**Dispersion Modeling and Climate Information**

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## APPENDIX 5.1C

### Dispersion Modeling and Climate Information

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Alamitos Energy Center  
Table 5.1C.1  
Commissioning Source Parameters for AERMOD Input  
December 2013

**Short-Term Commissioning Scenarios**

Scenario	Source Name	Easting (X)	Northing (Y)	Base Elevation	Stack Height	Temperature	Exit Velocity	Stack Diameter	1-hour NO <sub>2</sub>		1-hour CO		8-hour CO	
		(m)	(m)	(m)	(m)	(K)	(m/s)	(m)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)
Block 4 5% Load	BLOCK4_1_05	398073	3737086	5.18	36.6	500	10.1	5.49	6.11	48.5	215	1,709	215	1,709
	BLOCK4_2_05	398111	3737086	5.18	36.6	500	10.1	5.49	6.11	48.5	215	1,709	215	1,709
	BLOCK4_3_05	398148	3737086	5.18	36.6	500	10.1	5.49	6.11	48.5	215	1,709	215	1,709
Block 4 40% Load	BLOCK4_1_40	398073	3737086	5.18	36.6	473	9.95	5.49	3.27	26.0	173	1,373	173	1,373
	BLOCK4_2_40	398111	3737086	5.18	36.6	473	9.95	5.49	3.27	26.0	173	1,373	173	1,373
	BLOCK4_3_40	398148	3737086	5.18	36.6	473	9.95	5.49	3.27	26.0	173	1,373	173	1,373
Block 4 50% Load	BLOCK4_1_50	398073	3737086	5.18	36.6	466	9.91	5.49	13.8	110	399	3,169	399	3,169
	BLOCK4_2_50	398111	3737086	5.18	36.6	466	9.91	5.49	13.8	110	399	3,169	399	3,169
	BLOCK4_3_50	398148	3737086	5.18	36.6	466	9.91	5.49	13.8	110	399	3,169	399	3,169
Block 4 100% Load	BLOCK4_1F	398073	3737086	5.18	36.6	485	23.0	5.49	5.29	42.0	3.57	28.4	3.57	28.4
	BLOCK4_2F	398111	3737086	5.18	36.6	485	23.0	5.49	5.29	42.0	3.57	28.4	3.57	28.4
	BLOCK4_3F	398148	3737086	5.18	36.6	485	23.0	5.49	5.29	42.0	3.57	28.4	3.57	28.4
Block 1	BLOCK1_1	398174	3736846	3.96	36.6	467	15.5	5.49	3.21	25.5	14.4	114	5.72	45.4
	BLOCK1_2	398174	3736883	3.96	36.6	467	15.5	5.49	3.21	25.5	14.4	114	5.72	45.4
	BLOCK1_3	398174	3736919	3.96	36.6	467	15.5	5.49	3.21	25.5	14.4	114	5.72	45.4
Block 2	BLOCK2_1	398174	3736956	3.81	36.6	467	15.5	5.49	3.21	25.5	14.4	114	5.72	45.4
	BLOCK2_2	398174	3736992	3.81	36.6	467	15.5	5.49	3.21	25.5	14.4	114	5.72	45.4
	BLOCK2_3	398174	3737028	3.81	36.6	467	15.5	5.49	3.21	25.5	14.4	114	5.72	45.4
Block 3	BLOCK3_1	398174	3736599	5.18	36.6	467	15.5	5.49	3.21	25.5	14.4	114	5.72	45.4
	BLOCK3_2	398174	3736636	5.18	36.6	467	15.5	5.49	3.21	25.5	14.4	114	5.72	45.4
	BLOCK3_3	398174	3736672	5.18	36.6	467	15.5	5.49	3.21	25.5	14.4	114	5.72	45.4

**Annual Commissioning Scenarios**

Scenario	Source Name	Easting (X)	Northing (Y)	Base Elevation	Stack Height	Temperature	Exit Velocity	Stack Diameter	Annual NO <sub>2</sub>		Annual PM <sub>10</sub>		Annual PM <sub>2.5</sub>	
		(m)	(m)	(m)	(m)	(K)	(m/s)	(m)	(g/s)	(tpy)	(g/s)	(tpy)	(g/s)	(tpy)
Block 4 70% Load	BLOCK4_1	398073	3737086	5.18	36.6	466	16.4	5.49	0.76	26.4	0.27	9.32	0.27	9.32
	BLOCK4_2	398111	3737086	5.18	36.6	466	16.4	5.49	0.76	26.4	0.27	9.32	0.27	9.32
	BLOCK4_3	398148	3737086	5.18	36.6	466	16.4	5.49	0.76	26.4	0.27	9.32	0.27	9.32
Block 1	BLOCK1_1	398174	3736846	3.96	36.6	466	16.4	5.49	0.65	22.7	0.24	8.29	0.24	8.29
	BLOCK1_2	398174	3736883	3.96	36.6	466	16.4	5.49	0.65	22.7	0.24	8.29	0.24	8.29
	BLOCK1_3	398174	3736919	3.96	36.6	466	16.4	5.49	0.65	22.7	0.24	8.29	0.24	8.29
Block 2	BLOCK2_1	398174	3736956	3.81	36.6	466	16.4	5.49	0.65	22.7	0.24	8.29	0.24	8.29
	BLOCK2_2	398174	3736992	3.81	36.6	466	16.4	5.49	0.65	22.7	0.24	8.29	0.24	8.29
	BLOCK2_3	398174	3737028	3.81	36.6	466	16.4	5.49	0.65	22.7	0.24	8.29	0.24	8.29
Block 3	BLOCK3_1	398174	3736599	5.18	36.6	466	16.4	5.49	0.65	22.7	0.24	8.29	0.24	8.29
	BLOCK3_2	398174	3736636	5.18	36.6	466	16.4	5.49	0.65	22.7	0.24	8.29	0.24	8.29
	BLOCK3_3	398174	3736672	5.18	36.6	466	16.4	5.49	0.65	22.7	0.24	8.29	0.24	8.29

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Table 5.1C.2

Commissioning Building Parameters for AERMOD Input

December 2013

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)
ACC1	1	1	4.57	31.7	4	398225	3736794	398225	3736731	398187	3736731	398187	3736794		
AIRIN1_3	1	1	3.96	11.6	12	398223	3736914	398221	3736911	398221	3736906	398218	3736905	398217	3736901
AIRIN1_2	1	1	3.96	11.6	12	398223	3736877	398221	3736874	398221	3736870	398218	3736868	398217	3736864
AIRIN1_1	1	1	3.96	11.6	12	398223	3736841	398221	3736838	398221	3736833	398218	3736832	398217	3736828
CTG1_1	1	1	3.96	28.0	8	398179	3736853	398188	3736853	398188	3736854	398192	3736855	398192	3736838
CTG1_2	1	1	3.96	28.0	8	398178	3736890	398187	3736889	398187	3736891	398192	3736891	398192	3736874
CTG1_3	1	1	3.96	28.0	8	398178	3736926	398187	3736926	398187	3736927	398192	3736927	398192	3736911
STG1	1	1	3.90	15.5	4	398240	3736806	398264	3736806	398264	3736795	398240	3736795		
AIRIN2_1	1	1	3.81	11.6	12	398223	3736950	398221	3736947	398221	3736943	398218	3736941	398218	3736937
AIRIN2_2	1	1	3.81	11.6	12	398223	3736987	398221	3736984	398221	3736979	398218	3736978	398218	3736974
AIRIN2_3	1	1	3.81	11.6	12	398224	3737023	398221	3737020	398221	3737016	398218	3737014	398218	3737010
CTG2_1	1	1	3.81	28.0	8	398179	3736963	398188	3736962	398188	3736964	398193	3736964	398193	3736947
CTG2_2	1	1	3.81	28.0	8	398179	3736999	398188	3736999	398188	3737000	398193	3737001	398193	3736984
CTG2_3	1	1	3.81	28.0	8	398179	3737036	398188	3737035	398188	3737037	398193	3737037	398193	3737020
STG2	1	1	4.24	15.5	4	398198.94	3737112.6	398222.49	3737112.8	398222	3737102	398199	3737102.2		
ACC2	1	1	4.02	31.7	4	398278	3737178	398278	3737115	398240	3737115	398240	3737178		
ACC3	1	1	3.93	31.7	4	398150	3736646	398150	3736583	398112	3736583	398112	3736646		
CTG3_1	1	1	5.18	28.0	8	398179	3736606	398187	3736606	398188	3736607	398192	3736607	398192	3736591
CTG3_2	1	1	5.18	28.0	8	398179	3736643	398187	3736643	398188	3736644	398192	3736644	398192	3736627
CTG3_3	1	1	5.18	28.0	8	398179	3736679	398187	3736678	398188	3736680	398192	3736680	398192	3736663
AIRIN3_1	1	1	5.18	11.6	12	398223	3736593	398221	3736591	398221	3736586	398218	3736585	398218	3736581
AIRIN3_2	1	1	5.18	11.6	12	398223	3736630	398221	3736627	398221	3736623	398218	3736621	398218	3736618
AIRIN3_3	1	1	5.18	11.6	12	398223	3736666	398221	3736664	398221	3736659	398218	3736658	398217	3736654
STG3	1	1	5.18	15.5	4	398191	3736582	398215	3736582	398215	3736571	398191	3736571		
ACC4	1	1	4.57	31.7	4	398105	3737062	398105	3736999	398066	3736999	398067	3737062		
AIRIN4_1	1	1	5.18	11.6	12	398154	3737134	398157	3737132	398161	3737131	398163	3737128	398166	3737128
CTG4_1	1	1	5.18	28.0	8	398141	3737090	398141	3737099	398139	3737099	398139	3737104	398157	3737104
AIRIN4_2	1	1	5.18	11.6	12	398117	3737133	398120	3737131	398124	3737131	398126	3737128	398129	3737128
AIRIN4_3	1	1	5.18	11.6	12	398079	3737133	398082	3737131	398086	3737131	398088	3737128	398092	3737128
CTG4_2	1	1	5.18	28.0	8	398103	3737090	398103	3737099	398102	3737099	398102	3737104	398119	3737104
CTG4_3	1	1	5.18	28.0	8	398066	3737090	398066	3737099	398064	3737099	398064	3737104	398082	3737104
STG4	1	1	4.57	15.5	4	398121	3737074	398145	3737074	398145	3737063	398121	3737063		
WALL3	1	1	5.18	16.8	13	398169	3736582	398169	3736686	398213	3736686	398220	3736689	398242	3736689
WALL12	1	1	3.96	16.8	10	398167	3736832	398167	3737035	398198	3737046	398241	3737045	398241	3736813
WALL4	1	1	5.18	16.8	8	398030	3737053	398030	3737156	398177	3737155	398177	3737059	398176	3737060

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Table 5.1C.2  
Commissioning Buildi  
December 2013

Building Name	Corner 6 East (X) (m)	Corner 6 North (Y) (m)	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)	Corner 12 East (X) (m)	Corner 12 North (Y) (m)	Corner 13 East (X) (m)	Corner 13 North (Y) (m)
ACC1																
AIRIN1_3	398230	3736901	398230	3736905	398227	3736906	398227	3736910	398225	3736913	398225	3736915	398223	3736915		
AIRIN1_2	398230	3736864	398230	3736868	398227	3736870	398226	3736873	398225	3736876	398225	3736878	398223	3736878		
AIRIN1_1	398230	3736828	398230	3736832	398227	3736833	398227	3736837	398225	3736840	398225	3736842	398223	3736842		
CTG1_1	398188	3736838	398188	3736839	398179	3736840										
CTG1_2	398187	3736874	398187	3736876	398179	3736876										
CTG1_3	398187	3736910	398187	3736912	398179	3736912										
STG1																
AIRIN2_1	398230	3736937	398230	3736941	398227	3736943	398227	3736947	398225	3736950	398225	3736951	398223	3736951		
AIRIN2_2	398230	3736974	398230	3736978	398227	3736979	398227	3736983	398225	3736986	398225	3736988	398223	3736988		
AIRIN2_3	398230	3737010	398230	3737014	398227	3737016	398227	3737020	398225	3737023	398225	3737024	398224	3737024		
CTG2_1	398188	3736947	398188	3736949	398179	3736949										
CTG2_2	398188	3736984	398188	3736985	398179	3736986										
CTG2_3	398188	3737020	398188	3737022	398179	3737022										
STG2																
ACC2																
ACC3																
CTG3_1	398187	3736591	398187	3736592	398179	3736592										
CTG3_2	398187	3736627	398187	3736629	398179	3736629										
CTG3_3	398187	3736663	398187	3736665	398179	3736665										
AIRIN3_1	398230	3736581	398230	3736584	398227	3736586	398227	3736590	398225	3736593	398225	3736595	398223	3736595		
AIRIN3_2	398230	3736617	398230	3736621	398227	3736623	398227	3736627	398225	3736630	398225	3736631	398223	3736631		
AIRIN3_3	398230	3736654	398230	3736657	398227	3736659	398227	3736663	398225	3736666	398225	3736667	398223	3736668		
STG3																
ACC4																
AIRIN4_1	398167	3737140	398162	3737140	398161	3737137	398156	3737137	398154	3737135	398152	3737135	398152	3737133		
CTG4_1	398157	3737099	398155	3737099	398155	3737090										
AIRIN4_2	398130	3737140	398125	3737140	398124	3737137	398119	3737137	398117	3737135	398115	3737135	398115	3737133		
AIRIN4_3	398092	3737140	398088	3737140	398086	3737137	398082	3737137	398079	3737135	398077	3737135	398077	3737133		
CTG4_2	398119	3737099	398117	3737099	398117	3737090										
CTG4_3	398082	3737099	398080	3737099	398080	3737090										
STG4																
WALL3	398242	3736566	398240	3736566	398240	3736687	398220	3736687	398213	3736685	398171	3736685	398170	3736684	398170.16	3736582.18
WALL12	398240	3736813	398240	3737044	398198	3737045	398168	3737034	398168	3736832						
WALL4	398176	3737154	398032	3737154	398031	3737053										

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 Table 5.1C.3  
 Commissioning Modeling Results Summary  
 December 2013

**Short-Term Results**

Source Group	Year	NO <sub>2</sub> (µg/m <sup>3</sup> ) <sup>a</sup>		CO (µg/m <sup>3</sup> )	
		1-hour (Full Block)	1-hour (Single CTG)	1-hour	8-hour
5% Load with Blocks 1-3	2006	262	-	3,007	726
	2007	263	-	1,296	731
	2008	266	-	1,214	687
	2009	265	-	1,183	808
	2011	269	-	3,533	1,180
40% Load with Blocks 1-3	2006	253	-	2,628	635
	2007	253	-	1,342	626
	2008	257	-	1,053	594
	2009	255	-	1,012	689
	2011	258	-	3,033	1,015
50% Load with Blocks 1-3	2006	328	287	5,806	1,495
	2007	296	261	3,137	1,465
	2008	302	265	2,393	1,392
	2009	299	264	2,250	1,609
	2011	367	294	7,213	2,326
Full Load with Blocks 1-3	2006	251	-	147	32.9
	2007	249	-	124	31.8
	2008	252	-	137	33.1
	2009	251	-	143	39.9
	2011	254	-	214	52.2

<sup>a</sup> The maximum 1-hour NO<sub>2</sub> concentrations include an ambient NO<sub>2</sub> ratio of 0.80 combined with the seasonal maximum background concentration from the SCAQMD Port of Long Beach ambient monitor.

**Annual Results**

Source Group	Year	NO <sub>2</sub> (µg/m <sup>3</sup> ) <sup>a</sup>	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )
		Annual	Annual	Annual
ALL	2006	0.31	0.15	0.15
	2007	0.31	0.15	0.15
	2008	0.33	0.16	0.16
	2009	0.32	0.15	0.15
	2011	0.31	0.15	0.15
Block 1	2006	0.10	0.05	0.05
	2007	0.09	0.04	0.04
	2008	0.09	0.04	0.04
	2009	0.09	0.04	0.04
	2011	0.09	0.05	0.05
Block 2	2006	0.10	0.05	0.05
	2007	0.09	0.04	0.04
	2008	0.09	0.04	0.04
	2009	0.09	0.04	0.04
	2011	0.09	0.05	0.05
Block 3	2006	0.10	0.05	0.05
	2007	0.09	0.04	0.04
	2008	0.09	0.04	0.04
	2009	0.09	0.04	0.04
	2011	0.09	0.05	0.05
Block 4	2006	0.12	0.05	0.05
	2007	0.10	0.05	0.05
	2008	0.10	0.05	0.05
	2009	0.10	0.05	0.05
	2011	0.11	0.05	0.05

<sup>a</sup> The maximum annual NO<sub>2</sub> concentrations include an ambient NO<sub>2</sub> ratio of 0.75.

**Point Sources**

Scenario	Source ID	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
2	Block 1 Stack 1	398174	3736846	3.96	36.6	484	25.2	5.49
	Block 1 Stack 2	398174	3736883	3.96	36.6	484	25.2	5.49
	Block 1 Stack 3	398174	3736919	3.96	36.6	484	25.2	5.49
	Block 2 Stack 1	398174	3736956	3.81	36.6	484	25.2	5.49
	Block 2 Stack 2	398174	3736992	3.81	36.6	484	25.2	5.49
	Block 2 Stack 3	398174	3737028	3.81	36.6	484	25.2	5.49
	Block 3 Stack 1	398174	3736599	5.18	36.6	484	25.2	5.49
	Block 3 Stack 2	398174	3736636	5.18	36.6	484	25.2	5.49
	Block 3 Stack 3	398174	3736672	5.18	36.6	484	25.2	5.49
	Block 4 Stack 1	398073	3737086	5.18	36.6	484	25.2	5.49
	Block 4 Stack 2	398111	3737086	5.18	36.6	484	25.2	5.49
	Block 4 Stack 3	398148	3737086	5.18	36.6	484	25.2	5.49
3	Block 1 Stack 1	398174	3736846	3.96	36.6	479	22.5	5.49
	Block 1 Stack 2	398174	3736883	3.96	36.6	479	22.5	5.49
	Block 1 Stack 3	398174	3736919	3.96	36.6	479	22.5	5.49
	Block 2 Stack 1	398174	3736956	3.81	36.6	479	22.5	5.49
	Block 2 Stack 2	398174	3736992	3.81	36.6	479	22.5	5.49
	Block 2 Stack 3	398174	3737028	3.81	36.6	479	22.5	5.49
	Block 3 Stack 1	398174	3736599	5.18	36.6	479	22.5	5.49
	Block 3 Stack 2	398174	3736636	5.18	36.6	479	22.5	5.49
	Block 3 Stack 3	398174	3736672	5.18	36.6	479	22.5	5.49
	Block 4 Stack 1	398073	3737086	5.18	36.6	479	22.5	5.49
	Block 4 Stack 2	398111	3737086	5.18	36.6	479	22.5	5.49
	Block 4 Stack 3	398148	3737086	5.18	36.6	479	22.5	5.49
4	Block 1 Stack 1	398174	3736846	3.96	36.6	473	19.9	5.49
	Block 1 Stack 2	398174	3736883	3.96	36.6	473	19.9	5.49
	Block 1 Stack 3	398174	3736919	3.96	36.6	473	19.9	5.49
	Block 2 Stack 1	398174	3736956	3.81	36.6	473	19.9	5.49
	Block 2 Stack 2	398174	3736992	3.81	36.6	473	19.9	5.49
	Block 2 Stack 3	398174	3737028	3.81	36.6	473	19.9	5.49
	Block 3 Stack 1	398174	3736599	5.18	36.6	473	19.9	5.49
	Block 3 Stack 2	398174	3736636	5.18	36.6	473	19.9	5.49
	Block 3 Stack 3	398174	3736672	5.18	36.6	473	19.9	5.49
	Block 4 Stack 1	398073	3737086	5.18	36.6	473	19.9	5.49
	Block 4 Stack 2	398111	3737086	5.18	36.6	473	19.9	5.49
	Block 4 Stack 3	398148	3737086	5.18	36.6	473	19.9	5.49
5	Block 1 Stack 1	398174	3736846	3.96	36.6	468	17.3	5.49
	Block 1 Stack 2	398174	3736883	3.96	36.6	468	17.3	5.49
	Block 1 Stack 3	398174	3736919	3.96	36.6	468	17.3	5.49
	Block 2 Stack 1	398174	3736956	3.81	36.6	468	17.3	5.49
	Block 2 Stack 2	398174	3736992	3.81	36.6	468	17.3	5.49
	Block 2 Stack 3	398174	3737028	3.81	36.6	468	17.3	5.49
	Block 3 Stack 1	398174	3736599	5.18	36.6	468	17.3	5.49
	Block 3 Stack 2	398174	3736636	5.18	36.6	468	17.3	5.49
	Block 3 Stack 3	398174	3736672	5.18	36.6	468	17.3	5.49
	Block 4 Stack 1	398073	3737086	5.18	36.6	468	17.3	5.49
	Block 4 Stack 2	398111	3737086	5.18	36.6	468	17.3	5.49
	Block 4 Stack 3	398148	3737086	5.18	36.6	468	17.3	5.49



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Table 5.1C.4  
Operational Modeling Parameters - Stack Parameters  
December 2013

Point Sources								
Scenario	Source ID	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
7	Block 1 Stack 1	398174	3736846	3.96	36.6	482	23.3	5.49
	Block 1 Stack 2	398174	3736883	3.96	36.6	482	23.3	5.49
	Block 1 Stack 3	398174	3736919	3.96	36.6	482	23.3	5.49
	Block 2 Stack 1	398174	3736956	3.81	36.6	482	23.3	5.49
	Block 2 Stack 2	398174	3736992	3.81	36.6	482	23.3	5.49
	Block 2 Stack 3	398174	3737028	3.81	36.6	482	23.3	5.49
	Block 3 Stack 1	398174	3736599	5.18	36.6	482	23.3	5.49
	Block 3 Stack 2	398174	3736636	5.18	36.6	482	23.3	5.49
	Block 3 Stack 3	398174	3736672	5.18	36.6	482	23.3	5.49
	Block 4 Stack 1	398073	3737086	5.18	36.6	482	23.3	5.49
	Block 4 Stack 2	398111	3737086	5.18	36.6	482	23.3	5.49
	Block 4 Stack 3	398148	3737086	5.18	36.6	482	23.3	5.49
8	Block 1 Stack 1	398174	3736846	3.96	36.6	476	20.9	5.49
	Block 1 Stack 2	398174	3736883	3.96	36.6	476	20.9	5.49
	Block 1 Stack 3	398174	3736919	3.96	36.6	476	20.9	5.49
	Block 2 Stack 1	398174	3736956	3.81	36.6	476	20.9	5.49
	Block 2 Stack 2	398174	3736992	3.81	36.6	476	20.9	5.49
	Block 2 Stack 3	398174	3737028	3.81	36.6	476	20.9	5.49
	Block 3 Stack 1	398174	3736599	5.18	36.6	476	20.9	5.49
	Block 3 Stack 2	398174	3736636	5.18	36.6	476	20.9	5.49
	Block 3 Stack 3	398174	3736672	5.18	36.6	476	20.9	5.49
	Block 4 Stack 1	398073	3737086	5.18	36.6	476	20.9	5.49
	Block 4 Stack 2	398111	3737086	5.18	36.6	476	20.9	5.49
	Block 4 Stack 3	398148	3737086	5.18	36.6	476	20.9	5.49
9	Block 1 Stack 1	398174	3736846	3.96	36.6	471	18.7	5.49
	Block 1 Stack 2	398174	3736883	3.96	36.6	471	18.7	5.49
	Block 1 Stack 3	398174	3736919	3.96	36.6	471	18.7	5.49
	Block 2 Stack 1	398174	3736956	3.81	36.6	471	18.7	5.49
	Block 2 Stack 2	398174	3736992	3.81	36.6	471	18.7	5.49
	Block 2 Stack 3	398174	3737028	3.81	36.6	471	18.7	5.49
	Block 3 Stack 1	398174	3736599	5.18	36.6	471	18.7	5.49
	Block 3 Stack 2	398174	3736636	5.18	36.6	471	18.7	5.49
	Block 3 Stack 3	398174	3736672	5.18	36.6	471	18.7	5.49
	Block 4 Stack 1	398073	3737086	5.18	36.6	471	18.7	5.49
	Block 4 Stack 2	398111	3737086	5.18	36.6	471	18.7	5.49
	Block 4 Stack 3	398148	3737086	5.18	36.6	471	18.7	5.49
10	Block 1 Stack 1	398174	3736846	3.96	36.6	466	16.4	5.49
	Block 1 Stack 2	398174	3736883	3.96	36.6	466	16.4	5.49
	Block 1 Stack 3	398174	3736919	3.96	36.6	466	16.4	5.49
	Block 2 Stack 1	398174	3736956	3.81	36.6	466	16.4	5.49
	Block 2 Stack 2	398174	3736992	3.81	36.6	466	16.4	5.49
	Block 2 Stack 3	398174	3737028	3.81	36.6	466	16.4	5.49
	Block 3 Stack 1	398174	3736599	5.18	36.6	466	16.4	5.49
	Block 3 Stack 2	398174	3736636	5.18	36.6	466	16.4	5.49
	Block 3 Stack 3	398174	3736672	5.18	36.6	466	16.4	5.49
	Block 4 Stack 1	398073	3737086	5.18	36.6	466	16.4	5.49
	Block 4 Stack 2	398111	3737086	5.18	36.6	466	16.4	5.49
	Block 4 Stack 3	398148	3737086	5.18	36.6	466	16.4	5.49

Alamitos Energy Center  
Table 5.1C.4  
Operational Modeling Parameters - Stack Parameters  
December 2013

Point Sources								
Scenario	Source ID	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
12	Block 1 Stack 1	398174	3736846	3.96	36.6	485	23.0	5.49
	Block 1 Stack 2	398174	3736883	3.96	36.6	485	23.0	5.49
	Block 1 Stack 3	398174	3736919	3.96	36.6	485	23.0	5.49
	Block 2 Stack 1	398174	3736956	3.81	36.6	485	23.0	5.49
	Block 2 Stack 2	398174	3736992	3.81	36.6	485	23.0	5.49
	Block 2 Stack 3	398174	3737028	3.81	36.6	485	23.0	5.49
	Block 3 Stack 1	398174	3736599	5.18	36.6	485	23.0	5.49
	Block 3 Stack 2	398174	3736636	5.18	36.6	485	23.0	5.49
	Block 3 Stack 3	398174	3736672	5.18	36.6	485	23.0	5.49
	Block 4 Stack 1	398073	3737086	5.18	36.6	485	23.0	5.49
	Block 4 Stack 2	398111	3737086	5.18	36.6	485	23.0	5.49
	Block 4 Stack 3	398148	3737086	5.18	36.6	485	23.0	5.49
13	Block 1 Stack 1	398174	3736846	3.96	36.6	475	19.3	5.49
	Block 1 Stack 2	398174	3736883	3.96	36.6	475	19.3	5.49
	Block 1 Stack 3	398174	3736919	3.96	36.6	475	19.3	5.49
	Block 2 Stack 1	398174	3736956	3.81	36.6	475	19.3	5.49
	Block 2 Stack 2	398174	3736992	3.81	36.6	475	19.3	5.49
	Block 2 Stack 3	398174	3737028	3.81	36.6	475	19.3	5.49
	Block 3 Stack 1	398174	3736599	5.18	36.6	475	19.3	5.49
	Block 3 Stack 2	398174	3736636	5.18	36.6	475	19.3	5.49
	Block 3 Stack 3	398174	3736672	5.18	36.6	475	19.3	5.49
	Block 4 Stack 1	398073	3737086	5.18	36.6	475	19.3	5.49
	Block 4 Stack 2	398111	3737086	5.18	36.6	475	19.3	5.49
	Block 4 Stack 3	398148	3737086	5.18	36.6	475	19.3	5.49
14	Block 1 Stack 1	398174	3736846	3.96	36.6	471	17.5	5.49
	Block 1 Stack 2	398174	3736883	3.96	36.6	471	17.5	5.49
	Block 1 Stack 3	398174	3736919	3.96	36.6	471	17.5	5.49
	Block 2 Stack 1	398174	3736956	3.81	36.6	471	17.5	5.49
	Block 2 Stack 2	398174	3736992	3.81	36.6	471	17.5	5.49
	Block 2 Stack 3	398174	3737028	3.81	36.6	471	17.5	5.49
	Block 3 Stack 1	398174	3736599	5.18	36.6	471	17.5	5.49
	Block 3 Stack 2	398174	3736636	5.18	36.6	471	17.5	5.49
	Block 3 Stack 3	398174	3736672	5.18	36.6	471	17.5	5.49
	Block 4 Stack 1	398073	3737086	5.18	36.6	471	17.5	5.49
	Block 4 Stack 2	398111	3737086	5.18	36.6	471	17.5	5.49
	Block 4 Stack 3	398148	3737086	5.18	36.6	471	17.5	5.49
15	Block 1 Stack 1	398174	3736846	3.96	36.6	467	15.5	5.49
	Block 1 Stack 2	398174	3736883	3.96	36.6	467	15.5	5.49
	Block 1 Stack 3	398174	3736919	3.96	36.6	467	15.5	5.49
	Block 2 Stack 1	398174	3736956	3.81	36.6	467	15.5	5.49
	Block 2 Stack 2	398174	3736992	3.81	36.6	467	15.5	5.49
	Block 2 Stack 3	398174	3737028	3.81	36.6	467	15.5	5.49
	Block 3 Stack 1	398174	3736599	5.18	36.6	467	15.5	5.49
	Block 3 Stack 2	398174	3736636	5.18	36.6	467	15.5	5.49
	Block 3 Stack 3	398174	3736672	5.18	36.6	467	15.5	5.49
	Block 4 Stack 1	398073	3737086	5.18	36.6	467	15.5	5.49
	Block 4 Stack 2	398111	3737086	5.18	36.6	467	15.5	5.49
	Block 4 Stack 3	398148	3737086	5.18	36.6	467	15.5	5.49

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Table 5.1C.5

Operational Modeling Parameters - Emission Rates

December 2013

**Per Turbine Emission Rates for 1-hour, 3-hour, 8-hour, and 24-hour Modeling**

Exhaust Scenario	1-hour NO <sub>2</sub>		1-hour CO		8-hour CO		1-hour SO <sub>2</sub>		3-hour SO <sub>2</sub>		24-hour SO <sub>2</sub>		24-hour PM <sub>10</sub>		24-hour PM <sub>2.5</sub>	
	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)
Scenario 2	3.21	25.5	14.35	114	5.92	47.0	0.39	3.09	0.39	3.09	0.39	3.09	0.57	4.50	0.57	4.50
Scenario 3	3.21	25.5	14.35	114	5.87	46.6	0.35	2.80	0.35	2.80	0.35	2.80	0.57	4.50	0.57	4.50
Scenario 4	3.21	25.5	14.35	114	5.82	46.2	0.32	2.51	0.32	2.51	0.32	2.51	0.57	4.50	0.57	4.50
Scenario 5	3.21	25.5	14.35	114	5.78	45.9	0.28	2.26	0.28	2.26	0.28	2.26	0.57	4.50	0.57	4.50
Scenario 7	3.21	25.5	14.35	114	5.88	46.6	0.36	2.82	0.36	2.82	0.36	2.82	0.57	4.50	0.57	4.50
Scenario 8	3.21	25.5	14.35	114	5.83	46.3	0.32	2.58	0.32	2.58	0.32	2.58	0.57	4.50	0.57	4.50
Scenario 9	3.21	25.5	14.35	114	5.79	46.0	0.29	2.32	0.29	2.32	0.29	2.32	0.57	4.50	0.57	4.50
Scenario 10	3.21	25.5	14.35	114	5.75	45.7	0.26	2.10	0.26	2.10	0.26	2.10	0.57	4.50	0.57	4.50
Scenario 12	3.21	25.5	14.35	114	5.84	46.3	0.31	2.49	0.31	2.49	0.31	2.49	0.57	4.50	0.57	4.50
Scenario 13	3.21	25.5	14.35	114	5.79	45.9	0.29	2.29	0.29	2.29	0.29	2.29	0.57	4.50	0.57	4.50
Scenario 14	3.21	25.5	14.35	114	5.75	45.7	0.26	2.09	0.26	2.09	0.26	2.09	0.57	4.50	0.57	4.50
Scenario 15	3.21	25.5	14.35	114	5.72	45.4	0.24	1.90	0.24	1.90	0.24	1.90	0.57	4.50	0.57	4.50

**Per Turbine Emission Rates for Annual Modeling**

Exhaust Scenario	Annual NO <sub>2</sub>		Annual PM <sub>10</sub>		Annual PM <sub>2.5</sub>	
	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)
Scenario 7	0.65	5.17	0.24	1.89	0.24	1.89
Scenario 8	0.61	4.82	0.24	1.89	0.24	1.89
Scenario 9	0.57	4.49	0.24	1.89	0.24	1.89
Scenario 10	0.53	4.19	0.24	1.89	0.24	1.89

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Table 5.1C.6

Operational Building Parameters for AERMOD Input

December 2013

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)
ACC1	1	1	4.57	31.7	4	398225	3736794	398225	3736731	398187	3736731	398187	3736794		
AIRIN1_3	1	1	3.96	11.6	12	398223	3736914	398221	3736911	398221	3736906	398218	3736905	398217	3736901
AIRIN1_2	1	1	3.96	11.6	12	398223	3736877	398221	3736874	398221	3736870	398218	3736868	398217	3736864
AIRIN1_1	1	1	3.96	11.6	12	398223	3736841	398221	3736838	398221	3736833	398218	3736832	398217	3736828
CTG1_1	1	1	3.96	28.0	8	398179	3736853	398188	3736853	398188	3736854	398192	3736855	398192	3736838
CTG1_2	1	1	3.96	28.0	8	398178	3736890	398187	3736889	398187	3736891	398192	3736891	398192	3736874
CTG1_3	1	1	3.96	28.0	8	398178	3736926	398187	3736926	398187	3736927	398192	3736927	398192	3736911
STG1	1	1	3.90	15.5	4	398240	3736806	398264	3736806	398264	3736795	398240	3736795		
AIRIN2_1	1	1	3.81	11.6	12	398223	3736950	398221	3736947	398221	3736943	398218	3736941	398218	3736937
AIRIN2_2	1	1	3.81	11.6	12	398223	3736987	398221	3736984	398221	3736979	398218	3736978	398218	3736974
AIRIN2_3	1	1	3.81	11.6	12	398224	3737023	398221	3737020	398221	3737016	398218	3737014	398218	3737010
CTG2_1	1	1	3.81	28.0	8	398179	3736963	398188	3736962	398188	3736964	398193	3736964	398193	3736947
CTG2_2	1	1	3.81	28.0	8	398179	3736999	398188	3736999	398188	3737000	398193	3737001	398193	3736984
CTG2_3	1	1	3.81	28.0	8	398179	3737036	398188	3737035	398188	3737037	398193	3737037	398193	3737020
STG2	1	1	4.24	15.5	4	398199	3737112.6	398222	3737112.8	398222	3737102.2	398199	3737102.2		
ACC2	1	1	4.02	31.7	4	398278	3737177.8	398278	3737114.9	398240	3737114.9	398240	3737177.8		
ACC3	1	1	3.93	31.7	4	398150	3736646.4	398150	3736583.4	398112	3736583.4	398112	3736646.4		
CTG3_1	1	1	5.18	28.0	8	398179	3736606	398187	3736605.9	398188	3736607.2	398192.03	3736607.3	398192.03	3736590.7
CTG3_2	1	1	5.18	28.0	8	398179	3736642.7	398187	3736642.5	398188	3736643.9	398192.03	3736644	398192.03	3736627.4
CTG3_3	1	1	5.18	28.0	8	398179	3736678.6	398187	3736678.4	398188	3736679.7	398192.03	3736679.9	398192.03	3736663.3
AIRIN3_1	1	1	5.18	11.6	12	398223	3736593.4	398221	3736590.6	398221	3736586.1	398218	3736584.7	398218	3736580.9
AIRIN3_2	1	1	5.18	11.6	12	398223	3736630.1	398221	3736627.3	398221	3736622.8	398218	3736621.3	398218	3736617.5
AIRIN3_3	1	1	5.18	11.6	12	398223	3736666.3	398221	3736663.5	398221	3736659.1	398218	3736657.6	398217	3736653.8
STG3	1	1	5.18	15.5	4	398191	3736581.6	398215	3736581.7	398215	3736571.2	398191	3736571.2		
ACC4	1	1	4.57	31.7	4	398105	3737062.1	398105	3736999.2	398066	3736999.2	398067	3737062.1		
AIRIN4_1	1	1	5.18	11.6	12	398154	3737133.7	398157	3737131.6	398161	3737131.2	398163	3737128.5	398166	3737128.5
CTG4_1	1	1	5.18	28.0	8	398141	3737090.3	398141	3737098.9	398139	3737099.1	398139	3737103.7	398157	3737103.9
AIRIN4_2	1	1	5.18	11.6	12	398117	3737133.3	398120	3737131.1	398124	3737130.7	398126	3737128	398129	3737128
AIRIN4_3	1	1	5.18	11.6	12	398079	3737133	398082	3737131	398086	3737131	398088	3737128	398092	3737128
CTG4_2	1	1	5.18	28.0	8	398103	3737090	398103	3737099	398102	3737099	398102	3737104	398119	3737104
CTG4_3	1	1	5.18	28.0	8	398066	3737090	398066	3737099	398064	3737099	398064	3737104	398082	3737104
STG4	1	1	4.57	15.5	4	398121	3737074	398145	3737074	398145	3737063	398121	3737063		
WALL3	1	1	5.18	16.8	13	398169	3736582	398169	3736686	398213	3736686	398220	3736689	398242	3736689
WALL12	1	1	3.96	16.8	10	398167	3736832	398167	3737035	398198	3737046	398241	3737045	398241	3736813
WALL4	1	1	5.18	16.8	8	398030	3737053	398030	3737156	398177	3737155	398177	3737059	398176	3737060

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Table 5.1C.6  
Operational Building  
December 2013

Building Name	Corner 6	Corner 6	Corner 7	Corner 7	Corner 8	Corner 8	Corner 9	Corner 9	Corner 10	Corner 10	Corner 11	Corner 11	Corner 12	Corner 12	Corner 13	Corner 13
	East (X) (m)	North (Y) (m)	East (X) (m)	North (Y) (m)	East (X) (m)	North (Y) (m)	East (X) (m)	North (Y) (m)	East (X) (m)	North (Y) (m)	East (X) (m)	North (Y) (m)	East (X) (m)	North (Y) (m)	East (X) (m)	North (Y) (m)
ACC1																
AIRIN1_3	398230	3736901	398230	3736905	398227	3736906	398227	3736910	398225	3736913	398225	3736915	398223	3736915		
AIRIN1_2	398230	3736864	398230	3736868	398227	3736870	398226	3736873	398225	3736876	398225	3736878	398223	3736878		
AIRIN1_1	398230	3736828	398230	3736832	398227	3736833	398227	3736837	398225	3736840	398225	3736842	398223	3736842		
CTG1_1	398188	3736838	398188	3736839	398179	3736840										
CTG1_2	398187	3736874	398187	3736876	398179	3736876										
CTG1_3	398187	3736910	398187	3736912	398179	3736912										
STG1																
AIRIN2_1	398230	3736937	398230	3736941	398227	3736943	398227	3736947	398225	3736950	398225	3736951	398223	3736951		
AIRIN2_2	398230	3736974	398230	3736978	398227	3736979	398227	3736983	398225	3736986	398225	3736988	398223	3736988		
AIRIN2_3	398230	3737010	398230	3737014	398227	3737016	398227	3737020	398225	3737023	398225	3737024	398224	3737024		
CTG2_1	398188	3736947	398188	3736949	398179	3736949										
CTG2_2	398188	3736984	398188	3736985	398179	3736986										
CTG2_3	398188	3737020	398188	3737022	398179	3737022										
STG2																
ACC2																
ACC3																
CTG3_1	398187	3736590.5	398187	3736592.2	398179	3736592.3										
CTG3_2	398187	3736627.2	398187	3736628.9	398179	3736629										
CTG3_3	398187	3736663.1	398187	3736664.7	398179	3736664.9										
AIRIN3_1	398230	3736580.7	398230	3736584.5	398227	3736586.1	398226.98	3736589.9	398225	3736593.1	398225	3736594.5	398223	3736594.7		
AIRIN3_2	398230	3736617.4	398230	3736621.2	398227	3736622.8	398226.98	3736626.6	398225	3736629.7	398225	3736631.2	398223	3736631.4		
AIRIN3_3	398230	3736653.7	398230	3736657.4	398227	3736659.1	398227	3736662.9	398225	3736666	398225	3736667.5	398223	3736667.7		
STG3																
ACC4																
AIRIN4_1	398167	3737140.1	398162	3737140.2	398161	3737137.5	398156	3737137.1	398154	3737135.4	398152	3737135.3	398152	3737133.4		
CTG4_1	398157	3737098.8	398155	3737098.6	398155	3737090.3										
AIRIN4_2	398130	3737139.6	398125	3737139.8	398124.04	3737137	398119	3737136.7	398117	3737135	398115	3737134.8	398115	3737133		
AIRIN4_3	398092	3737140	398088	3737140	398086	3737137	398082	3737137	398079	3737135	398077	3737135	398077	3737133		
CTG4_2	398119	3737099	398117	3737099	398117	3737090										
CTG4_3	398082	3737099	398080	3737099	398080	3737090										
STG4																
WALL3	398242	3736566	398240	3736566	398240	3736687	398220	3736687	398213	3736685	398171	3736685	398170	3736684	398170.16	3736582.18
WALL12	398240	3736813	398240	3737044	398198	3737045	398168	3737034	398168	3736832						
WALL4	398176	3737154	398032	3737154	398031	3737053										

**Case 2: 28°F, 100% Load**

Year	NO <sub>2</sub> (µg/m <sup>3</sup> ) <sup>a</sup>		CO (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )			PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )	
	1-hour	Annual	1-hour	8-hour	1-hour	3-hour	24-hour	24-hour	Annual	24-hour	Annual
2006	18.4	-	103	22.5	2.79	2.24	0.65	0.95	-	0.95	-
2007	18.2	-	102	23.0	2.75	2.43	0.61	0.89	-	0.89	-
2008	19.5	-	109	23.6	2.94	2.02	0.55	0.81	-	0.81	-
2009	19.6	-	110	28.3	2.97	2.48	0.74	1.08	-	1.08	-
2011	28.5	-	159	42.6	4.32	3.16	1.12	1.64	-	1.64	-

**Case 3: 28°F, 90% Load**

Year	NO <sub>2</sub> (µg/m <sup>3</sup> ) <sup>a</sup>		CO (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )			PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )	
	1-hour	Annual	1-hour	8-hour	1-hour	3-hour	24-hour	24-hour	Annual	24-hour	Annual
2006	20.9	-	117	25.5	2.87	2.31	0.69	1.11	-	1.11	-
2007	20.5	-	115	26.4	2.81	2.50	0.64	1.03	-	1.03	-
2008	22.1	-	124	27.0	3.03	2.11	0.58	0.94	-	0.94	-
2009	21.5	-	120	32.3	2.94	2.56	0.77	1.25	-	1.25	-
2011	30.7	-	172	46.3	4.23	3.16	1.14	1.84	-	1.84	-

**Case 4: 28°F, 80% Load**

Year	NO <sub>2</sub> (µg/m <sup>3</sup> ) <sup>a</sup>		CO (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )			PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )	
	1-hour	Annual	1-hour	8-hour	1-hour	3-hour	24-hour	24-hour	Annual	24-hour	Annual
2006	23.8	-	133	29.7	2.93	2.37	0.72	1.30	-	1.30	-
2007	23.2	-	130	30.4	2.86	2.54	0.67	1.21	-	1.21	-
2008	25.2	-	141	31.0	3.10	2.20	0.60	1.09	-	1.09	-
2009	24.1	-	135	37.2	2.96	2.62	0.81	1.46	-	1.46	-
2011	33.4	-	187	51.5	4.12	3.22	1.15	2.07	-	2.07	-

**Case 5: 28°F, 70% Load**

Year	NO <sub>2</sub> (µg/m <sup>3</sup> ) <sup>a</sup>		CO (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )			PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )	
	1-hour	Annual	1-hour	8-hour	1-hour	3-hour	24-hour	24-hour	Annual	24-hour	Annual
2006	27.3	-	153	35.1	3.01	2.45	0.77	1.54	-	1.54	-
2007	26.5	-	148	35.4	2.92	2.61	0.71	1.43	-	1.43	-
2008	28.9	-	162	36.1	3.19	2.31	0.64	1.28	-	1.28	-
2009	27.1	-	152	43.2	2.99	2.71	0.86	1.71	-	1.71	-
2011	36.1	-	202	60.0	4.00	3.35	1.20	2.40	-	2.40	-

**Case 7: 65.3°F, 100% Load**

Year	NO <sub>2</sub> (µg/m <sup>3</sup> ) <sup>a</sup>		CO (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )			PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )	
	1-hour	Annual	1-hour	8-hour	1-hour	3-hour	24-hour	24-hour	Annual	24-hour	Annual
2006	20.1	0.20	112	24.4	2.77	2.23	0.66	1.05	0.10	1.05	0.10
2007	19.7	0.19	110	25.1	2.72	2.41	0.61	0.98	0.09	0.98	0.09
2008	21.2	0.20	119	25.7	2.93	2.03	0.56	0.89	0.10	0.89	0.10
2009	20.8	0.19	116	30.8	2.87	2.47	0.74	1.19	0.10	1.19	0.10
2011	29.9	0.20	167	44.5	4.14	3.08	1.11	1.77	0.10	1.77	0.10

**Case 8: 65.3°F, 90% Load**

Year	NO <sub>2</sub> (µg/m <sup>3</sup> ) <sup>a</sup>		CO (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )			PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )	
	1-hour	Annual	1-hour	8-hour	1-hour	3-hour	24-hour	24-hour	Annual	24-hour	Annual
2006	22.5	0.21	126	27.7	2.84	2.29	0.69	1.21	0.11	1.21	0.11
2007	22.0	0.21	123	28.6	2.78	2.47	0.64	1.13	0.11	1.13	0.11
2008	23.8	0.22	133	29.2	3.01	2.12	0.58	1.02	0.12	1.02	0.12
2009	22.9	0.21	128	34.9	2.89	2.54	0.78	1.36	0.11	1.36	0.11
2011	32.2	0.21	180	49.7	4.07	3.11	1.14	1.99	0.11	1.99	0.11

Alamitos Energy Center  
 Table 5.1C.7a  
 Operational Modeling Results Summary  
 December 2013  
**Case 9: 65.3°F, 80% Load**

Year	NO <sub>2</sub> (µg/m <sup>3</sup> ) <sup>a</sup>		CO (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )			PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )	
	1-hour	Annual	1-hour	8-hour	1-hour	3-hour	24-hour	24-hour	Annual	24-hour	Annual
2006	25.3	0.22	142	31.9	2.88	2.33	0.72	1.40	0.13	1.40	0.13
2007	24.6	0.22	138	32.5	2.80	2.50	0.67	1.30	0.12	1.30	0.12
2008	26.8	0.24	150	33.1	3.05	2.18	0.60	1.17	0.13	1.17	0.13
2009	25.4	0.22	142	39.7	2.89	2.59	0.80	1.56	0.13	1.56	0.13
2011	34.6	0.22	194	55.5	3.95	3.18	1.16	2.26	0.13	2.26	0.13

**Case 10: 65.3°F, 70% Load**

Year	NO <sub>2</sub> (µg/m <sup>3</sup> ) <sup>a</sup>		CO (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )			PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )	
	1-hour	Annual	1-hour	8-hour	1-hour	3-hour	24-hour	24-hour	Annual	24-hour	Annual
2006	28.7	0.24	160	37.2	2.94	2.40	0.76	1.64	0.15	1.64	0.15
2007	27.7	0.24	155	37.3	2.85	2.55	0.70	1.52	0.15	1.52	0.15
2008	30.4	0.26	170	38.0	3.12	2.27	0.63	1.36	0.16	1.36	0.16
2009	28.3	0.25	158	45.5	2.90	2.65	0.84	1.82	0.15	1.82	0.15
2011	37.0	0.24	207	63.0	3.81	3.29	1.16	2.50	0.15	2.50	0.15

**Case 12: 107°F, 100% Load**

Year	NO <sub>2</sub> (µg/m <sup>3</sup> ) <sup>a</sup>		CO (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )			PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )	
	1-hour	Annual	1-hour	8-hour	1-hour	3-hour	24-hour	24-hour	Annual	24-hour	Annual
2006	20.1	-	112	24.2	2.45	1.97	0.58	1.06	-	1.06	-
2007	19.8	-	111	25.0	2.40	2.13	0.54	0.98	-	0.98	-
2008	21.2	-	119	25.6	2.59	1.79	0.49	0.89	-	0.89	-
2009	20.8	-	117	30.6	2.54	2.18	0.65	1.19	-	1.19	-
2011	30.0	-	168	44.3	3.67	2.73	0.98	1.77	-	1.77	-

**Case 13: 107°F, 90% Load**

Year	NO <sub>2</sub> (µg/m <sup>3</sup> ) <sup>a</sup>		CO (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )			PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )	
	1-hour	Annual	1-hour	8-hour	1-hour	3-hour	24-hour	24-hour	Annual	24-hour	Annual
2006	24.4	-	136	30.3	2.73	2.21	0.68	1.33	-	1.33	-
2007	23.7	-	133	31.0	2.66	2.37	0.63	1.24	-	1.24	-
2008	25.8	-	144	31.6	2.89	2.06	0.57	1.12	-	1.12	-
2009	24.5	-	137	37.9	2.75	2.45	0.76	1.49	-	1.49	-
2011	33.8	-	189	52.6	3.80	3.02	1.10	2.15	-	2.15	-

**Case 14: 107°F, 80% Load**

Year	NO <sub>2</sub> (µg/m <sup>3</sup> ) <sup>a</sup>		CO (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )			PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )	
	1-hour	Annual	1-hour	8-hour	1-hour	3-hour	24-hour	24-hour	Annual	24-hour	Annual
2006	26.8	-	150	34.2	2.74	2.23	0.70	1.51	-	1.51	-
2007	26.0	-	146	34.5	2.66	2.37	0.65	1.40	-	1.40	-
2008	28.4	-	159	35.2	2.91	2.10	0.58	1.25	-	1.25	-
2009	26.7	-	150	42.2	2.73	2.47	0.78	1.68	-	1.68	-
2011	35.8	-	200	57.8	3.67	3.05	1.09	2.35	-	2.35	-

**Case 15: 107°F, 70% Load**

Year	NO <sub>2</sub> (µg/m <sup>3</sup> ) <sup>a</sup>		CO (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )			PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )	
	1-hour	Annual	1-hour	8-hour	1-hour	3-hour	24-hour	24-hour	Annual	24-hour	Annual
2006	30.0	-	168	39.2	2.78	2.27	0.73	1.74	-	1.74	-
2007	28.9	-	162	39.1	2.68	2.40	0.67	1.60	-	1.60	-
2008	31.8	-	178	39.8	2.95	2.16	0.60	1.43	-	1.43	-
2009	29.6	-	165	47.7	2.74	2.51	0.81	1.92	-	1.92	-
2011	38.5	-	215	65.2	3.58	3.13	1.10	2.61	-	2.61	-

<sup>a</sup> The maximum 1-hour and annual NO<sub>2</sub> concentrations include ambient NO<sub>2</sub> ratios of 0.80 and 0.75, respectively.

**Block 1 Stack 1**

Year	1-hour Concentration (µg/m <sup>3</sup> )	Annual Concentration (µg/m <sup>3</sup> )
2006	3.72	0.020
2007	2.95	0.018
2008	3.11	0.018
2009	2.96	0.018
2011	7.36	0.019

**Block 1 Stack 2**

Year	1-hour Concentration (µg/m <sup>3</sup> )	Annual Concentration (µg/m <sup>3</sup> )
2006	3.70	0.020
2007	2.97	0.018
2008	3.86	0.018
2009	2.96	0.018
2011	13.2	0.019

**Block 1 Stack 3**

Year	1-hour Concentration (µg/m <sup>3</sup> )	Annual Concentration (µg/m <sup>3</sup> )
2006	4.53	0.021
2007	4.16	0.018
2008	3.37	0.018
2009	3.15	0.018
2011	12.8	0.019

**Block 3 Stack 1**

Year	1-hour Concentration (µg/m <sup>3</sup> )	Annual Concentration (µg/m <sup>3</sup> )
2006	8.18	0.020
2007	4.41	0.019
2008	3.08	0.018
2009	4.01	0.018
2011	12.2	0.019

**Block 3 Stack 2**

Year	1-hour Concentration (µg/m <sup>3</sup> )	Annual Concentration (µg/m <sup>3</sup> )
2006	6.28	0.020
2007	5.64	0.018
2008	7.29	0.018
2009	5.45	0.018
2011	11.6	0.020

**Block 3 Stack 3**

Year	1-hour Concentration (µg/m <sup>3</sup> )	Annual Concentration (µg/m <sup>3</sup> )
2006	3.67	0.020
2007	2.95	0.018
2008	3.80	0.018
2009	2.98	0.018
2011	8.79	0.019

**Block 2 Stack 1**

Year	1-hour Concentration (µg/m <sup>3</sup> )	Annual Concentration (µg/m <sup>3</sup> )
2006	19.1	0.020
2007	3.45	0.018
2008	3.37	0.018
2009	2.99	0.018
2011	22.5	0.019

**Block 2 Stack 2**

Year	1-hour Concentration (µg/m <sup>3</sup> )	Annual Concentration (µg/m <sup>3</sup> )
2006	2.96	0.020
2007	2.96	0.018
2008	3.11	0.019
2009	2.97	0.018
2011	6.91	0.019

**Block 2 Stack 3**

Year	1-hour Concentration (µg/m <sup>3</sup> )	Annual Concentration (µg/m <sup>3</sup> )
2006	3.78	0.020
2007	3.00	0.018
2008	3.07	0.019
2009	2.98	0.018
2011	9.16	0.019

**Block 4 Stack 1**

Year	1-hour Concentration (µg/m <sup>3</sup> )	Annual Concentration (µg/m <sup>3</sup> )
2006	10.5	0.020
2007	2.96	0.018
2008	2.92	0.018
2009	2.91	0.018
2011	16.5	0.019

**Block 4 Stack 2**

Year	1-hour Concentration (µg/m <sup>3</sup> )	Annual Concentration (µg/m <sup>3</sup> )
2006	2.97	0.020
2007	2.92	0.018
2008	2.96	0.018
2009	2.93	0.018
2011	8.12	0.019

**Block 4 Stack 3**

Year	1-hour Concentration (µg/m <sup>3</sup> )	Annual Concentration (µg/m <sup>3</sup> )
2006	2.91	0.020
2007	2.87	0.018
2008	3.03	0.018
2009	2.93	0.018
2011	9.51	0.019

The maximum 1-hour and annual NO<sub>2</sub> concentrations include ambient NO<sub>2</sub> ratios of 0.80 and 0.75, respectively.



Alamitos Energy Center  
 Table 5.1C.7c  
 Class I SIL and Increment Modeling Results  
 December 2013

**Annual NO<sub>2</sub> Concentrations at 50 km Receptor Ring <sup>a</sup>**

Year	2006	2007	2008	2009	2011
All	0.0102	0.0097	0.0111	0.0141	0.0120
Stack 1	0.0026	0.0024	0.0028	0.0035	0.0030
Stack 2	0.0025	0.0024	0.0028	0.0035	0.0030
Stack 3	0.0026	0.0025	0.0028	0.0036	0.0030
Stack 4	0.0025	0.0024	0.0027	0.0035	0.0030

**24-hour PM<sub>10</sub> Concentrations at 50 km Receptor Ring**

Year	2006	2007	2008	2009	2011
All	0.0700	0.0590	0.0786	0.0998	0.0832
Stack 1	0.0175	0.0148	0.0197	0.0250	0.0208
Stack 2	0.0175	0.0147	0.0195	0.0251	0.0206
Stack 3	0.0176	0.0149	0.0202	0.0247	0.0214
Stack 4	0.0175	0.0146	0.0196	0.0251	0.0204

**Annual PM<sub>10</sub> Concentrations at 50 km Receptor Ring**

Year	2006	2007	2008	2009	2011
All	0.0061	0.0058	0.0067	0.0085	0.0073
Stack 1	0.0015	0.0015	0.0017	0.0021	0.0018
Stack 2	0.0015	0.0014	0.0017	0.0021	0.0018
Stack 3	0.0016	0.0015	0.0017	0.0022	0.0018
Stack 4	0.0015	0.0014	0.0017	0.0021	0.0018

<sup>a</sup> The maximum annual NO<sub>2</sub> concentrations include an ambient NO<sub>2</sub> ratio of 0.75.

Alamitos Energy Center  
 Table 5.1C.8  
 PSD Competing Source Modeling Parameters - Stack Parameters  
 December 2013

**Point Sources**

Facility	Source ID	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
AEC	BLOCK1_1	398174	3736846	3.96	36.6	467	15.5	5.49
	BLOCK1_2	398174	3736883	3.96	36.6	467	15.5	5.49
	BLOCK1_3	398174	3736919	3.96	36.6	467	15.5	5.49
	BLOCK2_1	398174	3736956	3.81	36.6	467	15.5	5.49
	BLOCK2_2	398174	3736992	3.81	36.6	467	15.5	5.49
	BLOCK2_3	398174	3737028	3.81	36.6	467	15.5	5.49
	BLOCK3_1	398174	3736599	5.18	36.6	467	15.5	5.49
	BLOCK3_2	398174	3736636	5.18	36.6	467	15.5	5.49
	BLOCK3_3	398174	3736672	5.18	36.6	467	15.5	5.49
	BLOCK4_1	398073	3737086	5.18	36.6	467	15.5	5.49
	BLOCK4_2	398111	3737086	5.18	36.6	467	15.5	5.49
	BLOCK4_3	398148	3737086	5.18	36.6	467	15.5	5.49
	Haynes Generating Station	80007401	398554	3736805	2.74	45.7	627	21.6
80007402		398554	3736811	2.67	45.7	627	21.6	4.11
80007403		398554	3736912	2.60	45.7	627	21.6	4.11
80007404		398554	3736919	2.61	45.7	627	21.6	4.11
80007405		398554	3737019	2.60	45.7	627	21.6	4.11
80007406		398554	3737025	2.60	45.7	627	21.6	4.11
80007407		398601	3736258	3.20	73.2	386	17.1	5.33
80007408		398601	3736293	3.20	73.2	384	15.7	5.33
80007409		398652	3736693	3.54	42.7	368	19.1	5.79
80007410		398652	3736739	3.54	42.7	368	19.1	5.79
Beta Offshore	16607301	395222	3716431	0.00	18.3	661	31.1	0.30
	16607302	395222	3716431	0.00	18.3	641	30.0	0.30
	16607303	395222	3716431	0.00	18.3	585	24.2	0.30
	16607304	394082	3717932	0.00	18.3	663	28.7	0.30
	16607305	394082	3717932	0.00	18.3	684	34.7	0.30
	16607306	394082	3717932	0.00	18.3	583	21.1	0.30
	16607307	395265	3716554	0.00	18.3	671	39.4	0.61
	16607308	395265	3716554	0.00	18.3	671	38.1	0.61
	16607309	395265	3716554	0.00	18.3	677	37.5	0.61
	16607310	395265	3716554	0.00	18.3	671	81.2	0.76
	16607311	395265	3716554	0.00	18.3	669	81.1	0.76
	16607312	395265	3716554	0.00	18.3	668	81.4	0.76
	16607313	395265	3716554	0.00	22.9	464	8.35	0.51

**Volume Sources**

Facility	Source ID	Base Elevation (m)	Release Height (m)	Initial Horizontal Dimension (m)	Initial Vertical Dimension (m)
Shipping Lanes (800 sources)	764601-704625	0.00	50.0	186	23.3

Competing source data provided by SCAQMD.

Alamitos Energy Center

Table 5.1C.9

PSD Competing Source Modeling Parameters - Emission Rates

December 2013

**Emission Rates for PSD 1-hour NO<sub>2</sub> Competing Source Modeling**

Facility	Source ID	1-hour NO <sub>2</sub>	
		(g/s)	(lb/hr)
AEC	BLOCK1_1	3.21	25.5
	BLOCK1_2	3.21	25.5
	BLOCK1_3	3.21	25.5
	BLOCK2_1	3.21	25.5
	BLOCK2_2	3.21	25.5
	BLOCK2_3	3.21	25.5
	BLOCK3_1	3.21	25.5
	BLOCK3_2	3.21	25.5
	BLOCK3_3	3.21	25.5
	BLOCK4_1	3.21	25.5
	BLOCK4_2	3.21	25.5
	BLOCK4_3	3.21	25.5
	Haynes Generating Station	80007401	3.12
80007402		3.12	24.7
80007403		3.12	24.7
80007404		3.12	24.7
80007405		3.12	24.7
80007406		3.12	24.7
80007407		1.69	13.4
80007408		1.69	13.4
80007409		2.17	17.2
80007410		2.17	17.2
Beta Offshore	16607301	1.90	15.0
	16607302	1.90	15.0
	16607303	1.90	15.0
	16607304	1.90	15.0
	16607305	1.90	15.0
	16607306	1.90	15.0
	16607307	0.37	2.90
	16607308	0.31	2.50
	16607309	0.35	2.80
	16607310	2.52	20.0
	16607311	2.48	19.7
	16607312	2.48	19.7
	16607313	10.3	81.6
Shipping Lanes			
(Total for 800 sources)	764601-704625	171	1,357

Competing source data provided by SCAQMD.

Alamitos Energy Center

Table 5.1C.10

Construction Source Parameters for AERMOD Input

December 2013

Point Sources <sup>a</sup>

Source ID	Stack Release Type	Easting (X1) (m)	Northing (Y1) (m)	Base		Temperature (K)	Exit Velocity (m)	Stack
				Elevation (m)	Stack Height (m)			Diameter (m)
CONS009	HORIZONTAL	398175	3736850	2.55	4.60	533	18.0	0.127
CONS010	HORIZONTAL	398175	3736875	2.68	4.60	533	18.0	0.127
CONS011	HORIZONTAL	398175	3736900	2.75	4.60	533	18.0	0.127
CONS012	HORIZONTAL	398175	3736925	3.1	4.60	533	18.0	0.127
CONS013	HORIZONTAL	398175	3736950	3.4	4.60	533	18.0	0.127
CONS014	HORIZONTAL	398200	3736850	2.17	4.60	533	18.0	0.127
CONS015	HORIZONTAL	398200	3736875	2.17	4.60	533	18.0	0.127
CONS016	HORIZONTAL	398200	3736900	2.21	4.60	533	18.0	0.127
CONS017	HORIZONTAL	398200	3736925	2.27	4.60	533	18.0	0.127
CONS018	HORIZONTAL	398200	3736950	3.1	4.60	533	18.0	0.127
CONS019	HORIZONTAL	398175	3736975	3.7	4.60	533	18.0	0.127
CONS020	HORIZONTAL	398175	3737000	3.4	4.60	533	18.0	0.127
CONS021	HORIZONTAL	398175	3737025	2.70	4.60	533	18.0	0.127
CONS022	HORIZONTAL	398200	3736750	2.19	4.60	533	18.0	0.127
CONS023	HORIZONTAL	398200	3736775	2.18	4.60	533	18.0	0.127
CONS024	HORIZONTAL	398200	3736800	2.18	4.60	533	18.0	0.127
CONS025	HORIZONTAL	398200	3736825	2.17	4.60	533	18.0	0.127
CONS026	HORIZONTAL	398200	3736975	3.8	4.60	533	18.0	0.127
CONS027	HORIZONTAL	398200	3737000	3.1	4.60	533	18.0	0.127
CONS028	HORIZONTAL	398200	3737025	2.52	4.60	533	18.0	0.127
CONS029	HORIZONTAL	398200	3737050	1.94	4.60	533	18.0	0.127
CONS030	HORIZONTAL	398200	3737075	1.59	4.60	533	18.0	0.127
CONS031	HORIZONTAL	398200	3737100	1.34	4.60	533	18.0	0.127
CONS032	HORIZONTAL	398200	3737125	1.33	4.60	533	18.0	0.127
CONS033	HORIZONTAL	398200	3737150	1.34	4.60	533	18.0	0.127
CONS034	HORIZONTAL	398200	3737175	1.29	4.60	533	18.0	0.127
CONS035	HORIZONTAL	398225	3736750	1.76	4.60	533	18.0	0.127
CONS036	HORIZONTAL	398225	3736775	1.77	4.60	533	18.0	0.127
CONS037	HORIZONTAL	398225	3736800	1.77	4.60	533	18.0	0.127
CONS038	HORIZONTAL	398225	3736825	1.77	4.60	533	18.0	0.127
CONS039	HORIZONTAL	398225	3736850	1.77	4.60	533	18.0	0.127
CONS040	HORIZONTAL	398225	3736875	1.77	4.60	533	18.0	0.127
CONS041	HORIZONTAL	398225	3736900	1.76	4.60	533	18.0	0.127
CONS042	HORIZONTAL	398225	3736925	1.92	4.60	533	18.0	0.127

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Table 5.1C.10

Construction Source Parameters for AERMOD Input  
December 2013

CONS043	HORIZONTAL	398225	3736950	3.4	4.60	533	18.0	0.127
CONS044	HORIZONTAL	398225	3736975	3.02	4.60	533	18.0	0.127
CONS045	HORIZONTAL	398225	3737000	2.62	4.60	533	18.0	0.127
CONS046	HORIZONTAL	398225	3737025	2.08	4.60	533	18.0	0.127
CONS047	HORIZONTAL	398225	3737050	1.56	4.60	533	18.0	0.127
CONS048	HORIZONTAL	398225	3737075	1.33	4.60	533	18.0	0.127
CONS049	HORIZONTAL	398225	3737100	1.33	4.60	533	18.0	0.127
CONS050	HORIZONTAL	398225	3737125	1.17	4.60	533	18.0	0.127
CONS051	HORIZONTAL	398225	3737150	1.04	4.60	533	18.0	0.127
CONS052	HORIZONTAL	398225	3737175	1.03	4.60	533	18.0	0.127
CONS053	HORIZONTAL	398250	3736750	1.25	4.60	533	18.0	0.127
CONS054	HORIZONTAL	398250	3736775	1.36	4.60	533	18.0	0.127
CONS055	HORIZONTAL	398250	3736800	1.39	4.60	533	18.0	0.127
CONS056	HORIZONTAL	398250	3736825	1.39	4.60	533	18.0	0.127
CONS057	HORIZONTAL	398250	3736850	1.39	4.60	533	18.0	0.127
CONS058	HORIZONTAL	398250	3736875	1.39	4.60	533	18.0	0.127
CONS059	HORIZONTAL	398250	3736900	1.47	4.60	533	18.0	0.127
CONS060	HORIZONTAL	398250	3736925	1.89	4.60	533	18.0	0.127
CONS061	HORIZONTAL	398250	3736950	3.5	4.60	533	18.0	0.127
CONS062	HORIZONTAL	398250	3736975	2.55	4.60	533	18.0	0.127
CONS063	HORIZONTAL	398250	3737000	1.70	4.60	533	18.0	0.127
CONS064	HORIZONTAL	398250	3737025	1.40	4.60	533	18.0	0.127
CONS065	HORIZONTAL	398250	3737050	1.20	4.60	533	18.0	0.127
CONS066	HORIZONTAL	398250	3737075	1.06	4.60	533	18.0	0.127
CONS067	HORIZONTAL	398250	3737100	1.03	4.60	533	18.0	0.127
CONS068	HORIZONTAL	398250	3737125	1.03	4.60	533	18.0	0.127
CONS069	HORIZONTAL	398250	3737150	1.03	4.60	533	18.0	0.127
CONS070	HORIZONTAL	398250	3737175	1.03	4.60	533	18.0	0.127
CONS071	HORIZONTAL	398275	3736750	1.02	4.60	533	18.0	0.127
CONS072	HORIZONTAL	398275	3736775	1.02	4.60	533	18.0	0.127
CONS073	HORIZONTAL	398275	3736800	1.02	4.60	533	18.0	0.127
CONS074	HORIZONTAL	398275	3736825	1.02	4.60	533	18.0	0.127
CONS075	HORIZONTAL	398275	3736850	1.02	4.60	533	18.0	0.127
CONS076	HORIZONTAL	398275	3736875	1.02	4.60	533	18.0	0.127
CONS077	HORIZONTAL	398275	3736900	1.08	4.60	533	18.0	0.127
CONS078	HORIZONTAL	398275	3736925	1.70	4.60	533	18.0	0.127
CONS079	HORIZONTAL	398275	3736950	3.2	4.60	533	18.0	0.127
CONS080	HORIZONTAL	398275	3736975	1.65	4.60	533	18.0	0.127
CONS081	HORIZONTAL	398275	3737000	1.16	4.60	533	18.0	0.127
CONS082	HORIZONTAL	398275	3737025	1.04	4.60	533	18.0	0.127
CONS083	HORIZONTAL	398275	3737050	1.03	4.60	533	18.0	0.127
CONS084	HORIZONTAL	398275	3737075	1.01	4.60	533	18.0	0.127

Alamitos Energy Center

Table 5.1C.10

Construction Source Parameters for AERMOD Input  
December 2013

CONS085	HORIZONTAL	398275	3737100	0.77	4.60	533	18.0	0.127
CONS086	HORIZONTAL	398275	3737125	0.79	4.60	533	18.0	0.127
CONS087	HORIZONTAL	398275	3737150	0.81	4.60	533	18.0	0.127
CONS088	HORIZONTAL	398275	3737175	0.83	4.60	533	18.0	0.127
CONS089	HORIZONTAL	398125	3736575	0.00	4.60	533	18.0	0.127
CONS090	HORIZONTAL	398125	3736600	1.70	4.60	533	18.0	0.127
CONS091	HORIZONTAL	398125	3736625	1.65	4.60	533	18.0	0.127
CONS092	HORIZONTAL	398125	3736650	1.64	4.60	533	18.0	0.127
CONS093	HORIZONTAL	398125	3736675	1.98	4.60	533	18.0	0.127
CONS094	HORIZONTAL	398150	3736525	2.25	4.60	533	18.0	0.127
CONS095	HORIZONTAL	398150	3736575	0.60	4.60	533	18.0	0.127
CONS096	HORIZONTAL	398150	3736600	1.36	4.60	533	18.0	0.127
CONS097	HORIZONTAL	398150	3736625	2.29	4.60	533	18.0	0.127
CONS098	HORIZONTAL	398150	3736650	2.27	4.60	533	18.0	0.127
CONS099	HORIZONTAL	398150	3736675	2.26	4.60	533	18.0	0.127
CONS100	HORIZONTAL	398175	3736525	2.28	4.60	533	18.0	0.127
CONS101	HORIZONTAL	398175	3736575	0.12	4.60	533	18.0	0.127
CONS102	HORIZONTAL	398175	3736600	1.66	4.60	533	18.0	0.127
CONS103	HORIZONTAL	398175	3736625	2.24	4.60	533	18.0	0.127
CONS104	HORIZONTAL	398175	3736650	2.25	4.60	533	18.0	0.127
CONS105	HORIZONTAL	398175	3736675	2.25	4.60	533	18.0	0.127
CONS106	HORIZONTAL	398200	3736525	3.2	4.60	533	18.0	0.127
CONS107	HORIZONTAL	398200	3736575	2.26	4.60	533	18.0	0.127
CONS108	HORIZONTAL	398200	3736600	2.31	4.60	533	18.0	0.127
CONS109	HORIZONTAL	398200	3736625	2.30	4.60	533	18.0	0.127
CONS110	HORIZONTAL	398200	3736650	2.25	4.60	533	18.0	0.127
CONS111	HORIZONTAL	398200	3736675	2.24	4.60	533	18.0	0.127
CONS112	HORIZONTAL	398225	3736525	3.7	4.60	533	18.0	0.127
CONS113	HORIZONTAL	398225	3736550	3.7	4.60	533	18.0	0.127
CONS114	HORIZONTAL	398225	3736575	3.7	4.60	533	18.0	0.127
CONS115	HORIZONTAL	398225	3736600	3.2	4.60	533	18.0	0.127
CONS116	HORIZONTAL	398225	3736625	2.32	4.60	533	18.0	0.127
CONS117	HORIZONTAL	398225	3736650	2.24	4.60	533	18.0	0.127
CONS118	HORIZONTAL	398225	3736675	2.29	4.60	533	18.0	0.127
CONS119	HORIZONTAL	398250	3736525	3.8	4.60	533	18.0	0.127
CONS120	HORIZONTAL	398250	3736550	3.8	4.60	533	18.0	0.127
CONS121	HORIZONTAL	398250	3736575	3.8	4.60	533	18.0	0.127
CONS122	HORIZONTAL	398250	3736600	3.3	4.60	533	18.0	0.127
CONS123	HORIZONTAL	398250	3736625	2.51	4.60	533	18.0	0.127
CONS124	HORIZONTAL	398250	3736650	2.19	4.60	533	18.0	0.127
CONS125	HORIZONTAL	398250	3736675	1.02	4.60	533	18.0	0.127

\* Additional construction sources used in the construction HRA modeling (CONS001-CONS008 and CONS126-CONS190) have the same source parameters as those presented in this table.

Alamitos Energy Center  
 Table 5.1C.10  
 Construction Source Parameters for AERMOD Input  
 December 2013

**Area Sources**

Source ID	Base Elevation (m)	Release Height (m)	Number of Vertices	Initial Vert. Dimension (m)	Easting (X1) (m)	Northing (Y1) (m)	Easting (X2) (m)	Northing (Y2) (m)	Easting (X3) (m)	Northing (Y3) (m)	Easting (X4) (m)	Northing (Y4) (m)	Easting (X5) (m)	Northing (Y5) (m)
BLOCKS12	3.02	0	12	1	398184	3737183	398284	3737183	398276	3736727	398189	3736727	398190	3736835

Source ID	Easting (X6) (m)	Northing (Y6) (m)	Easting (X7) (m)	Northing (Y7) (m)	Easting (X8) (m)	Northing (Y8) (m)	Easting (X9) (m)	Northing (Y9) (m)	Easting (X10) (m)	Northing (Y10) (m)	Easting (X11) (m)	Northing (Y11) (m)	Easting (X12) (m)	Northing (Y12) (m)
BLOCKS12	398145	3736835	398146	3736884	398154	3736894	398154	3736952	398169	3736953	398169	3737041	398184	3737049

Alamitos Energy Center  
 Table 5.1C.11  
 Construction Modeling Parameters - Emission Rates  
 December 2013

**Emission Rates for 1-hour, 3-hour, 8-hour, and 24-hour Modeling<sup>a, b, c</sup>**

Source ID Month Modeled Units	1-hour NO <sub>2</sub> 16		1-hour CO 51		8-hour CO 51		1-hour SO <sub>2</sub> 57		3-hour SO <sub>2</sub> 57		24-hour SO <sub>2</sub> 57		24-hour PM <sub>10</sub> 12		24-hour PM <sub>2.5</sub> 12		
	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	
Blocks 1 & 2 Construction (CONS009-CONS088)	1.82	14.4	-	-	-	-	-	-	-	-	-	-	-	0.075	0.60	0.070	0.56
Block 3 Construction (CONS89-CONS125)	-	-	1.04	8.23	1.04	8.23	0.0020	0.016	0.0020	0.016	0.0017	0.014	-	-	-	-	
BLOCKS12 (Fugitive)	-	-	-	-	-	-	-	-	-	-	-	-	0.22	1.76	0.050	0.40	
	0		0				0.0000										

**Emission Rates for Annual Modeling<sup>a, b, c</sup>**

Source ID Months Modeled Units	Annual NO <sub>2</sub> 12-23		Annual PM <sub>10</sub> 12-23		Annual PM <sub>2.5</sub> 11-22	
	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)
Blocks 1 & 2 Construction (CONS009-CONS088)	0.99	7.84	0.051	0.40	0.047	0.37
Block 3 Construction (CONS89-CONS125)	-	-	-	-	-	-
BLOCKS12 (Fugitive)	-	-	0.13	1.01	0.026	0.20

<sup>a</sup> Emissions for construction sources CONS001-CONS008 and CONS126-CONS190 are not presented as emissions in these areas do not occur during the peak construction period. However, all sources are included in the construction HRA.

<sup>b</sup> Emission rates for construction exhaust point sources (CONS009-CONS125) are presented as the sum total for all sources in the group.

<sup>c</sup> Maximum emissions by month can be found in Appendix 5.1A, Table 5.1A.72.



Alamitos Energy Center  
Table 5.1C.12  
Construction Modeling Results  
December 2013

Source	Year	NO <sub>2</sub> (µg/m <sup>3</sup> )			CO (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )			PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )	
		1-hour <sup>a</sup>	Federal 1-hour <sup>b</sup>	Annual <sup>a</sup>	1-hour	8-hour	1-hour	3-hour	24-hour	24-hour	Annual	24-hour	Annual
ALL		99.7	184	10.3	108	58.7	0.21	0.17	0.053	31.5	6.78	8.10	1.88
EXH	2006	99.7	74.3	10.3	108	58.7	0.21	0.17	0.053	1.47	0.71	1.37	0.65
FUG		-	-	-	-	-	-	-	-	30.1	6.07	6.78	1.23
ALL		104	188	10.4	108	60.8	0.21	0.17	0.055	26.7	6.71	6.98	1.87
EXH	2007	104	79.2	10.4	108	60.8	0.21	0.17	0.055	1.40	0.71	1.30	0.65
FUG		-	-	-	-	-	-	-	-	25.3	6.00	5.70	1.22
ALL		100	190	10.4	108	56.5	0.21	0.17	0.055	25.0	6.69	6.43	1.87
EXH	2008	100	77.7	10.4	108	56.5	0.21	0.17	0.055	1.59	0.71	1.48	0.65
FUG		-	-	-	-	-	-	-	-	23.8	5.97	5.36	1.21
ALL		102	186	10.4	108	64.4	0.21	0.17	0.055	24.9	6.97	6.47	1.93
EXH	2009	102	80.0	10.4	108	64.4	0.21	0.17	0.055	1.42	0.71	1.32	0.65
FUG		-	-	-	-	-	-	-	-	23.6	6.26	5.32	1.27
ALL		107	187	9.97	107	55.7	0.21	0.16	0.057	27.2	6.67	6.93	1.84
EXH	2011	107	77.8	9.97	107	55.7	0.21	0.16	0.057	1.51	0.68	1.40	0.63
FUG		-	-	-	-	-	-	-	-	26.1	5.99	5.87	1.22

<sup>a</sup>The maximum 1-hour and annual NO<sub>2</sub> concentrations include ambient NO<sub>2</sub> ratios of 0.80 and 0.75, respectively.

<sup>b</sup>Total predicted concentration for the Federal 1-hour NO<sub>2</sub> standard (source ALL) is the high 8th high modeled concentration paired with the three-year average of 98th percentile seasonal hourly background concentrations, as provided by the SCAQMD.

Alamitos Energy Center  
 Table 5.1C.13a  
 First Quarter Wind Table  
 December 2013

**Frequency Distribution (Hours)**  
**Date Range: January 1 - March 31 (2006-2009 and 2011)**

Wind Speed (m/s)	0.25 - 0.5	0.5 - 2.1	2.1 - 3.6	3.6 - 5.7	5.7 - 8.8	8.8 - 11.1	>= 11.1	Total
Wind Direction (from)								
N	0	128	467	1	0	0	0	596
NNE	0	283	776	3	0	0	0	1,062
NE	0	333	626	13	1	0	0	973
ENE	0	333	534	23	0	0	0	890
E	0	213	463	21	1	0	0	698
ESE	0	124	246	15	0	0	0	385
SE	0	66	413	56	13	1	0	549
SSE	0	68	381	52	3	0	0	504
S	0	52	467	35	1	0	0	555
SSW	0	51	428	28	0	0	0	507
SW	0	62	269	26	1	0	0	358
WSW	0	110	305	67	4	0	0	486
W	0	266	1,240	452	48	1	0	2,007
WNW	0	201	501	53	0	0	0	755
NW	0	78	119	1	0	0	0	198
NNW	0	64	115	2	0	0	0	181
Total	0	2,432	7,350	848	72	2	0	10,704

0 Calm Winds

120 Missing Winds

Alamitos Energy Center  
 Table 5.1C.13b  
 Second Quarter Wind Table  
 December 2013

**Frequency Distribution (Hours)**  
**Date Range: April 1 - June 30 (2006-2009 and 2011)**

Wind Speed (m/s)	0.25 - 0.5	0.5 - 2.1	2.1 - 3.6	3.6 - 5.7	5.7 - 8.8	8.8 - 11.1	>= 11.1	Total
Wind Direction (from)								
N	0	108	69	2	0	0	0	179
NNE	0	163	139	0	0	0	0	302
NE	0	242	216	1	0	0	0	459
ENE	0	201	183	3	0	0	0	387
E	0	151	257	3	0	0	0	411
ESE	0	84	285	2	0	0	0	371
SE	0	92	734	24	0	0	0	850
SSE	0	54	843	24	0	0	0	921
S	0	44	1,023	57	2	0	0	1,126
SSW	0	37	726	53	0	0	0	816
SW	0	51	326	32	0	0	0	409
WSW	0	101	271	71	10	0	0	453
W	0	262	1,675	663	48	0	0	2,648
WNW	0	335	781	116	3	0	0	1,235
NW	0	103	71	2	0	0	0	176
NNW	0	71	39	0	0	0	0	110
Total	0	2,099	7,638	1,053	63	0	0	10,853

0 Calm Winds

67 Missing Winds

Alamitos Energy Center  
 Table 5.1C.13c  
 Third Quarter Wind Table  
 December 2013

**Frequency Distribution (Hours)**  
**Date Range: July 1 - September 30 (2006-2009 and 2011)**

Wind Speed (m/s)	0.25 - 0.5	0.5 - 2.1	2.1 - 3.6	3.6 - 5.7	5.7 - 8.8	8.8 - 11.1	>= 11.1	Total
Wind Direction (from)								
N	0	169	55	4	0	0	0	228
NNE	0	246	107	1	0	0	0	354
NE	0	322	184	2	0	0	0	508
ENE	0	213	181	0	0	0	0	394
E	0	144	198	0	0	0	0	342
ESE	0	88	196	2	0	0	0	286
SE	0	84	566	11	0	0	0	661
SSE	0	91	689	21	0	0	0	801
S	0	85	851	28	0	0	0	964
SSW	0	60	616	25	0	0	0	701
SW	0	48	324	14	0	0	0	386
WSW	0	106	237	9	0	0	0	352
W	0	483	1,612	505	3	0	0	2,603
WNW	0	552	1,105	231	1	0	0	1,889
NW	0	169	111	4	0	0	0	284
NNW	0	101	37	0	0	0	0	138
Total	0	2,961	7,069	857	4	0	0	10,891

3 Calm Winds

146 Missing Winds

Alamitos Energy Center  
 Table 5.1C.13d  
 Fourth Quarter Wind Table  
 December 2013

**Frequency Distribution (Hours)**

**Date Range: October 1 - December 31 (2006-2009 and 2011)**

Wind Speed (m/s)	0.25 - 0.5	0.5 - 2.1	2.1 - 3.6	3.6 - 5.7	5.7 - 8.8	8.8 - 11.1	>= 11.1	Total
Wind Direction (from)								
N	0	152	488	17	3	0	0	660
NNE	0	329	809	46	10	0	0	1,194
NE	0	454	693	40	9	0	1	1,197
ENE	0	401	505	35	1	0	0	942
E	0	248	409	30	5	3	1	696
ESE	0	117	181	11	0	0	1	310
SE	0	76	284	25	12	2	1	400
SSE	0	54	293	20	2	1	0	370
S	0	50	418	20	1	0	1	490
SSW	0	51	383	21	1	0	0	456
SW	0	65	202	11	2	0	0	280
WSW	0	115	315	42	4	0	0	476
W	0	329	1,266	242	37	0	0	1,874
WNW	0	298	736	67	14	0	0	1,115
NW	0	114	143	4	2	1	0	264
NNW	0	83	110	6	1	0	0	200
Total	0	2,936	7,235	637	104	7	5	10,924

3 Calm Winds

113 Missing Hours

<b>Ambient Air Quality Standards</b>						
Pollutant	Averaging Time	California Standards <sup>1</sup>		National Standards <sup>2</sup>		
		Concentration <sup>3</sup>	Method <sup>4</sup>	Primary <sup>3,5</sup>	Secondary <sup>3,6</sup>	Method <sup>7</sup>
Ozone (O <sub>3</sub> )	1 Hour	0.09 ppm (180 µg/m <sup>3</sup> )	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m <sup>3</sup> )		0.075 ppm (147 µg/m <sup>3</sup> )		
Respirable Particulate Matter (PM <sub>10</sub> ) <sup>8</sup>	24 Hour	50 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	150 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>		—		
Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>8</sup>	24 Hour	—	—	35 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	12.0 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m <sup>3</sup> )	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m <sup>3</sup> )	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m <sup>3</sup> )		9 ppm (10 mg/m <sup>3</sup> )	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m <sup>3</sup> )		—	—	
Nitrogen Dioxide (NO <sub>2</sub> ) <sup>9</sup>	1 Hour	0.18 ppm (339 µg/m <sup>3</sup> )	Gas Phase Chemiluminescence	100 ppb (188 µg/m <sup>3</sup> )	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m <sup>3</sup> )		0.053 ppm (100 µg/m <sup>3</sup> )	Same as Primary Standard	
Sulfur Dioxide (SO <sub>2</sub> ) <sup>10</sup>	1 Hour	0.25 ppm (655 µg/m <sup>3</sup> )	Ultraviolet Fluorescence	75 ppb (196 µg/m <sup>3</sup> )	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m <sup>3</sup> )	
	24 Hour	0.04 ppm (105 µg/m <sup>3</sup> )		0.14 ppm (for certain areas) <sup>10</sup>	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas) <sup>10</sup>	—	
Lead <sup>11,12</sup>	30 Day Average	1.5 µg/m <sup>3</sup>	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m <sup>3</sup> (for certain areas) <sup>12</sup>	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m <sup>3</sup>		
Visibility Reducing Particles <sup>13</sup>	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	<b>No National Standards</b>		
Sulfates	24 Hour	25 µg/m <sup>3</sup>	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m <sup>3</sup> )	Ultraviolet Fluorescence			
Vinyl Chloride <sup>11</sup>	24 Hour	0.01 ppm (26 µg/m <sup>3</sup> )	Gas Chromatography			

See footnotes on next page ...

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and 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 arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site 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 calendar year with a 24-hour average concentration above  $150 \mu\text{g}/\text{m}^3$  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 the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of  $25^\circ\text{C}$  and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of  $25^\circ\text{C}$  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 measurement method 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 U.S. 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 U.S. EPA.
8. On December 14, 2012, the national annual PM2.5 primary standard was lowered from  $15 \mu\text{g}/\text{m}^3$  to  $12.0 \mu\text{g}/\text{m}^3$ . The existing national 24-hour PM2.5 standards (primary and secondary) were retained at  $35 \mu\text{g}/\text{m}^3$ , as was the annual secondary standard of  $15 \mu\text{g}/\text{m}^3$ . The existing 24-hour PM10 standards (primary and secondary) of  $150 \mu\text{g}/\text{m}^3$  also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
9. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
10. On June 2, 2010, a new 1-hour  $\text{SO}_2$  standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971  $\text{SO}_2$  national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.  
 Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
11. 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.
12. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard ( $1.5 \mu\text{g}/\text{m}^3$  as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
13. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (6/4/13)

Alamitos Energy Center  
Table 5.1C.15  
December 2013  
Climatic Summary for Long Beach, California

## LONG BEACH WSCMO, CALIFORNIA (045085)

### Period of Record Monthly Climate Summary

Period of Record : 4/ 1/1958 to 3/31/2013

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	67.1	67.2	68.4	71.7	73.5	76.9	82.2	83.9	82.3	77.9	72.2	67.0	74.2
Average Min. Temperature (F)	45.6	47.3	49.7	52.4	56.8	60.3	63.7	64.9	62.9	57.9	50.5	45.3	54.8
Average Total Precipitation (in.)	2.63	2.90	1.83	0.70	0.20	0.06	0.02	0.06	0.19	0.42	1.21	1.80	12.01
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.: 100% Min. Temp.: 100% Precipitation: 100% Snowfall: 90% Snow Depth: 90.4%

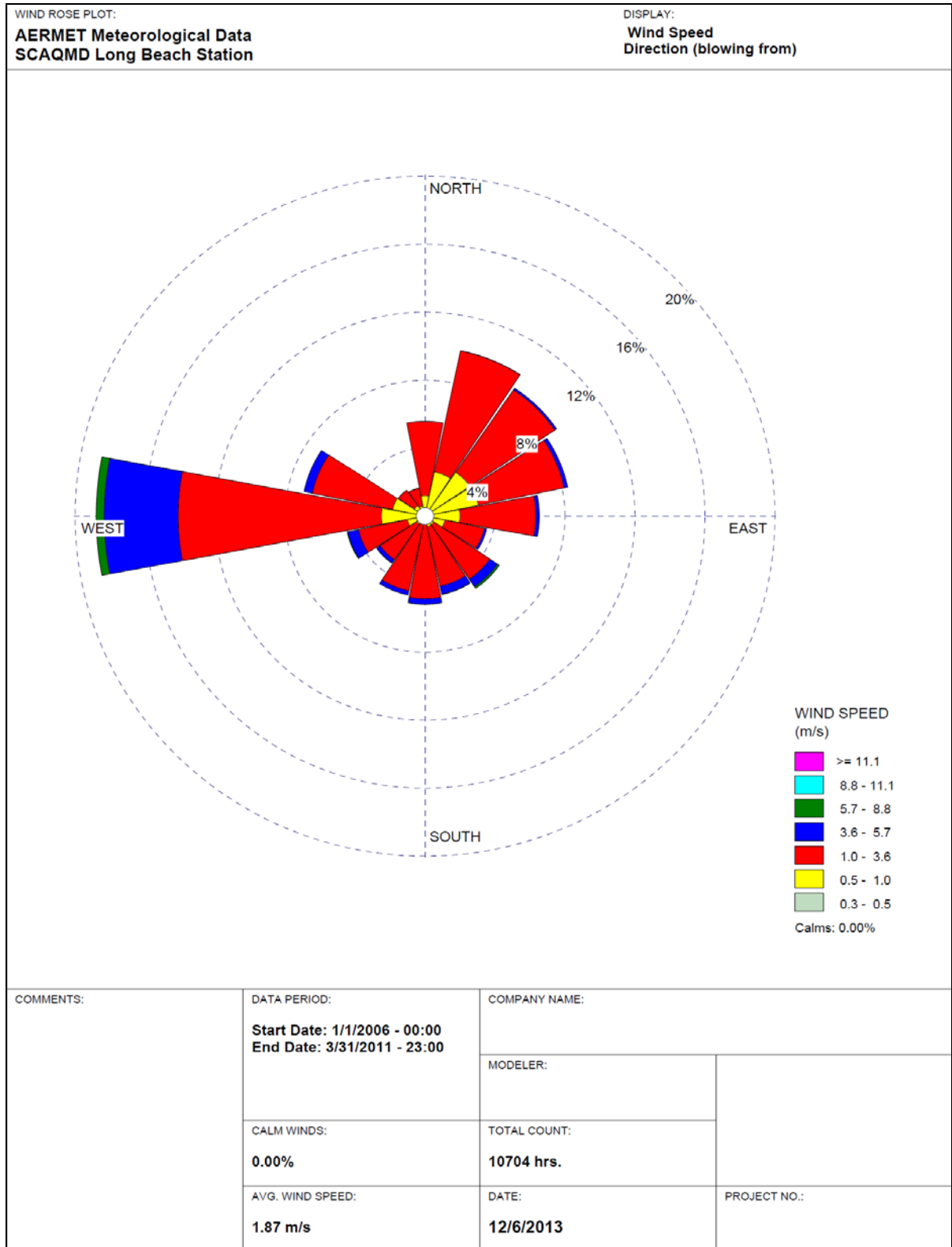
Check [Station Metadata](#) or [Metadata graphics](#) for more detail about data completeness.

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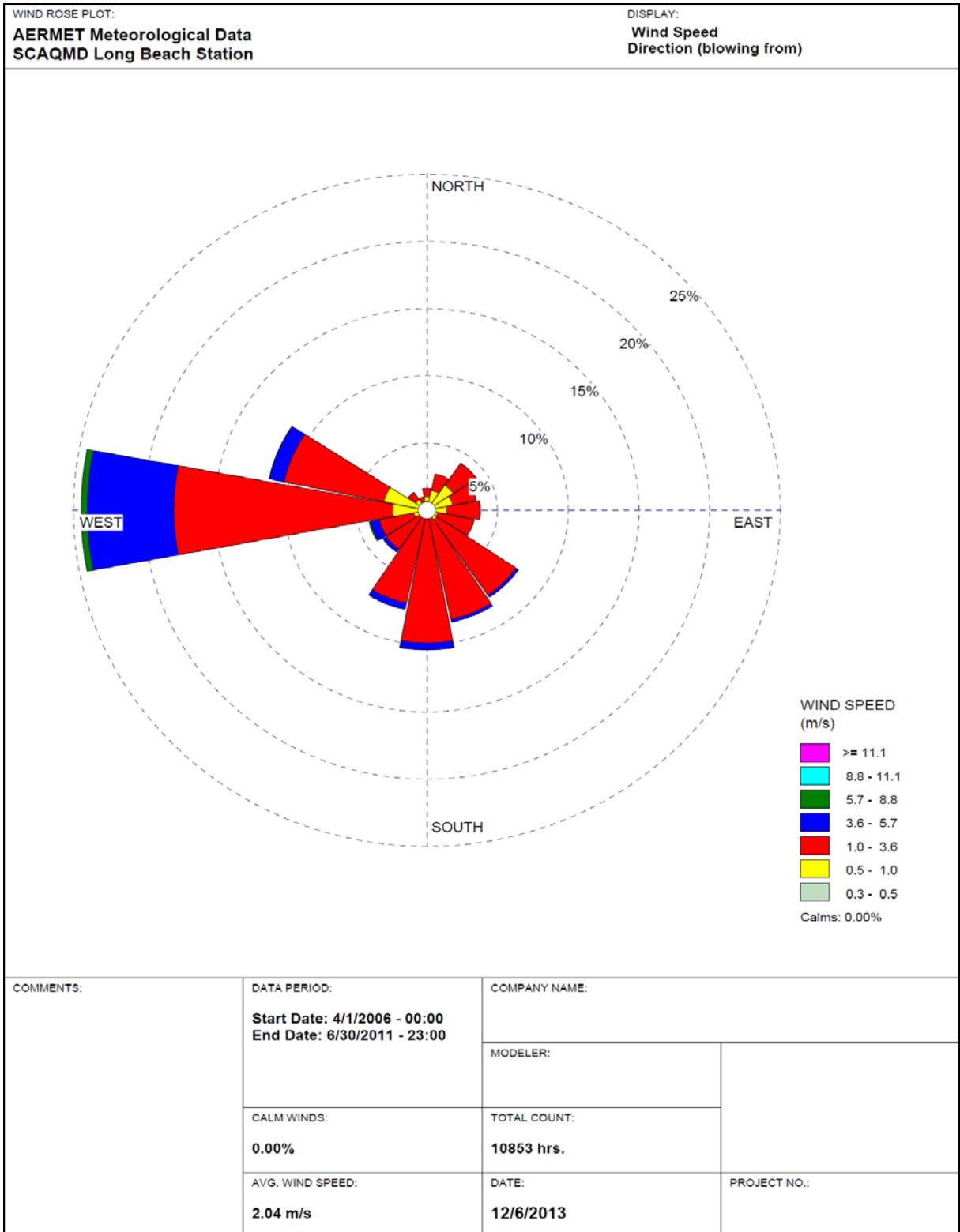
Western Regional Climate Center, [wrcc@dri.edu](mailto:wrcc@dri.edu)



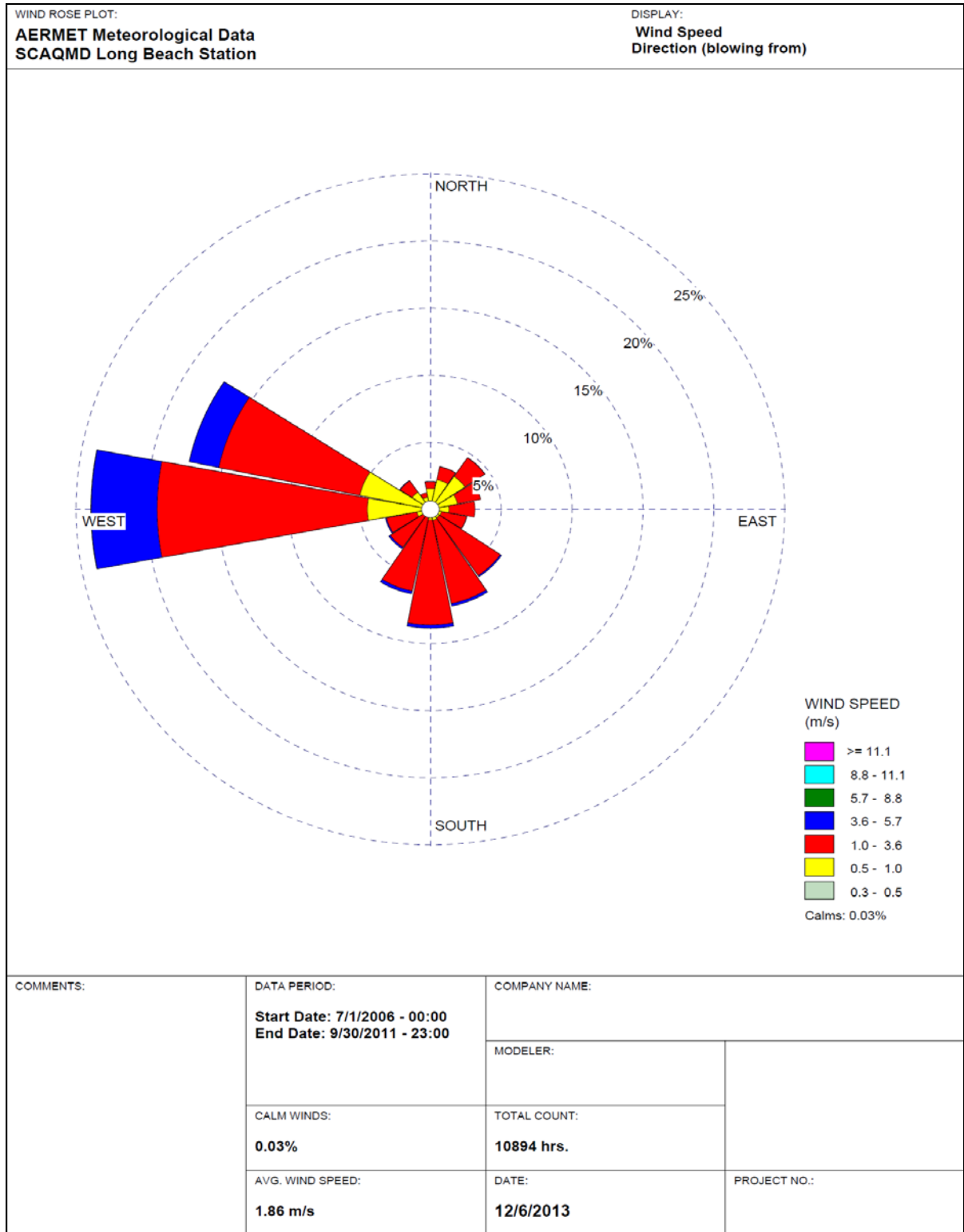
Alamitos Energy Center  
 Figure 5.1C-1a  
 December 2013  
 First Quarter Wind Rose  
 Date Range: January 1 – March 31 (2006-2009 and 2011)



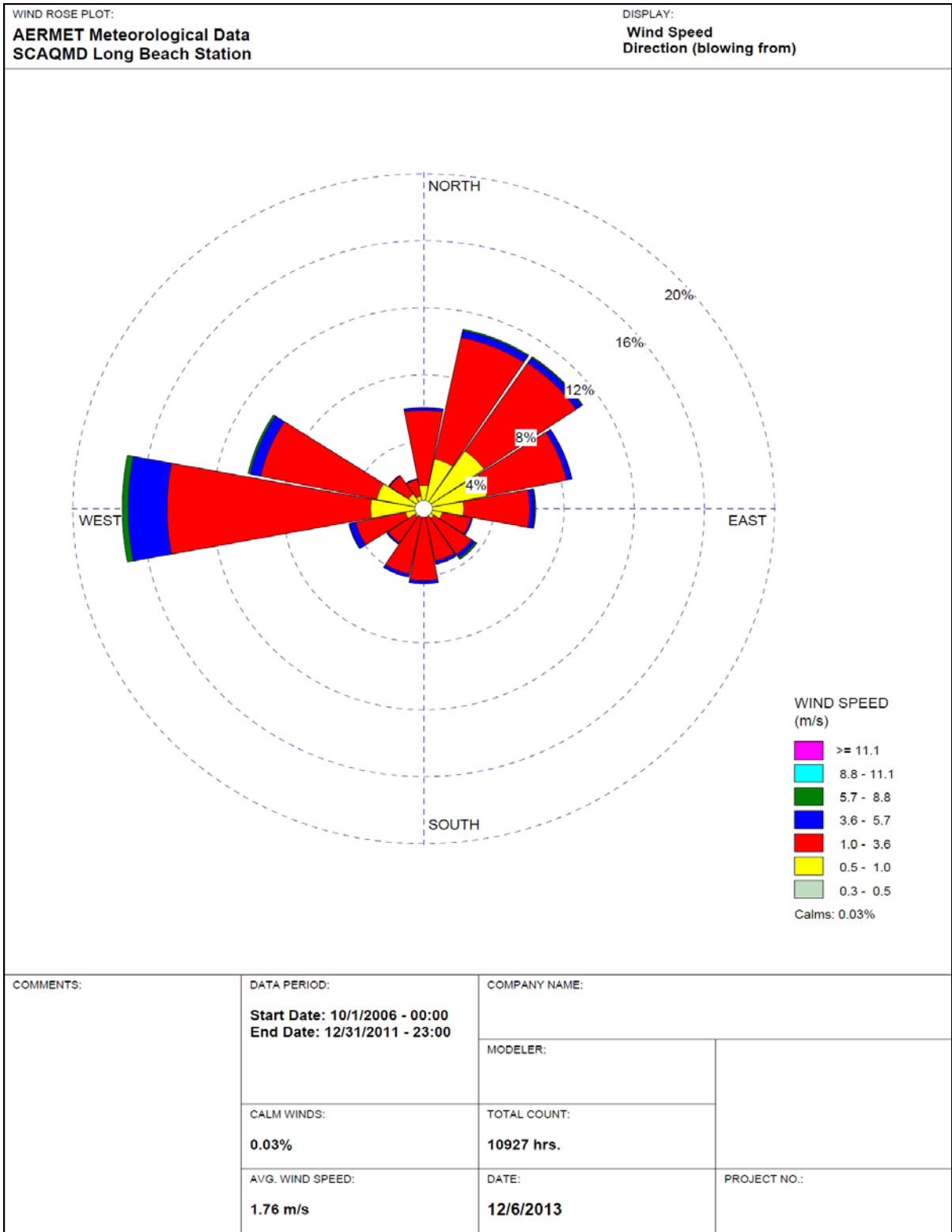
Alamitos Energy Center  
 Figure 5.1C-1b  
 December 2013  
 Second Quarter Wind Rose  
 Date Range: April 1 – June 30 (2006-2009 and 2011)



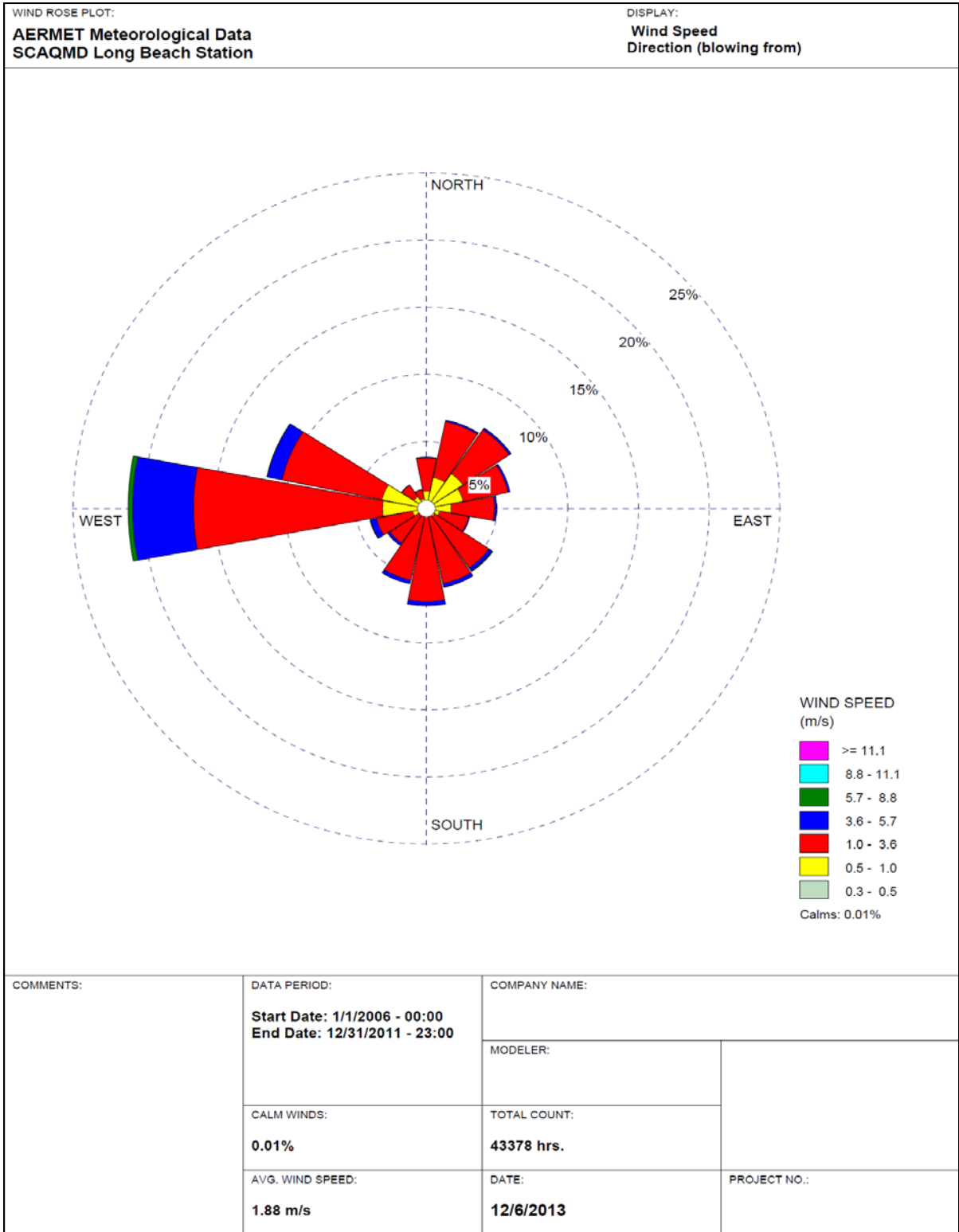
Alamitos Energy Center  
 Figure 5.1C-1c  
 December 2013  
 Third Quarter Wind Rose  
 Date Range: July 1 – September 30 (2006-2009 and 2011)



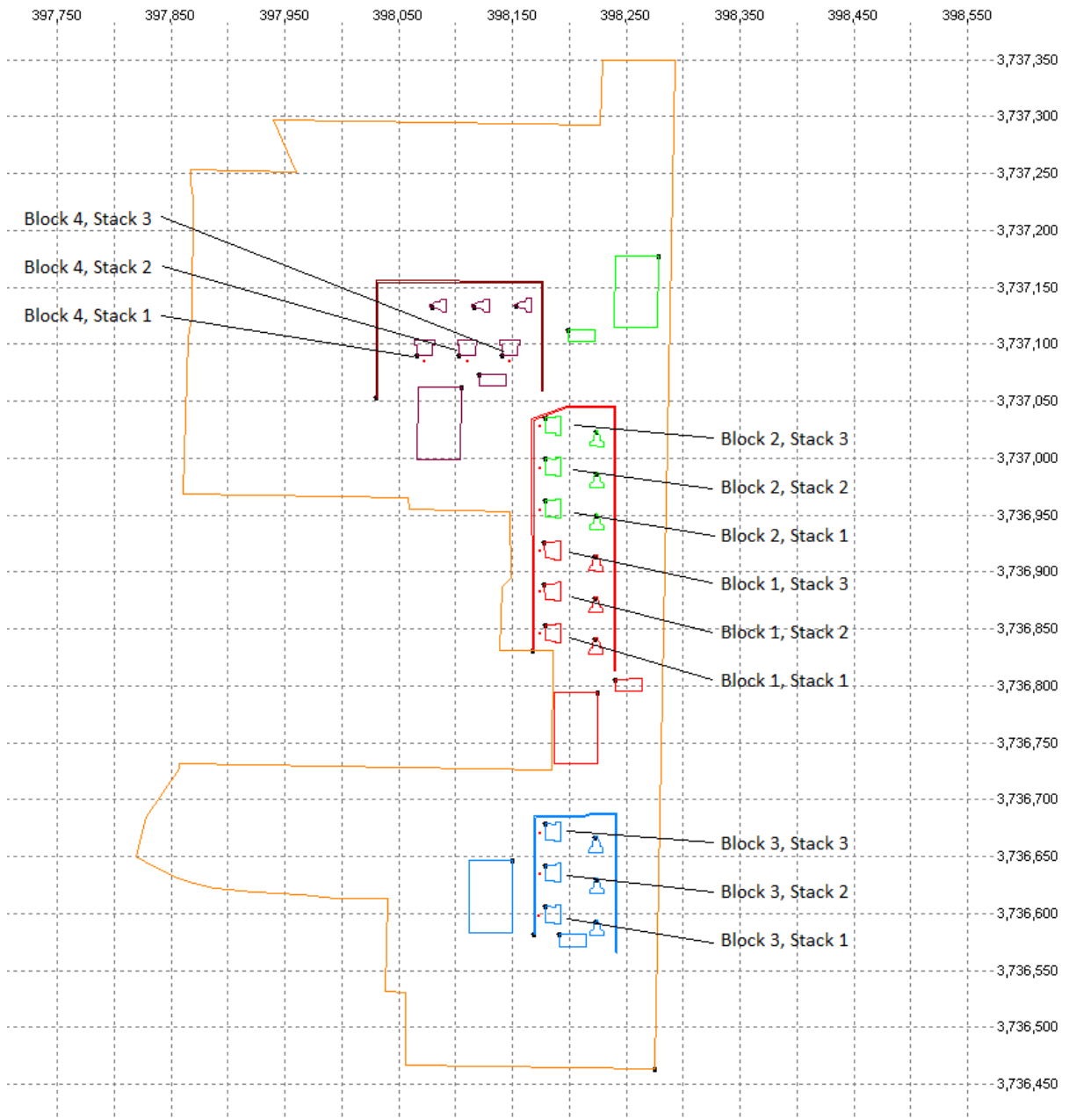
Alamitos Energy Center  
 Figure 5.1C-1d  
 December 2013  
 Fourth Quarter Wind Rose  
 Date Range: October 1 – December 31 (2006-2009 and 2011)



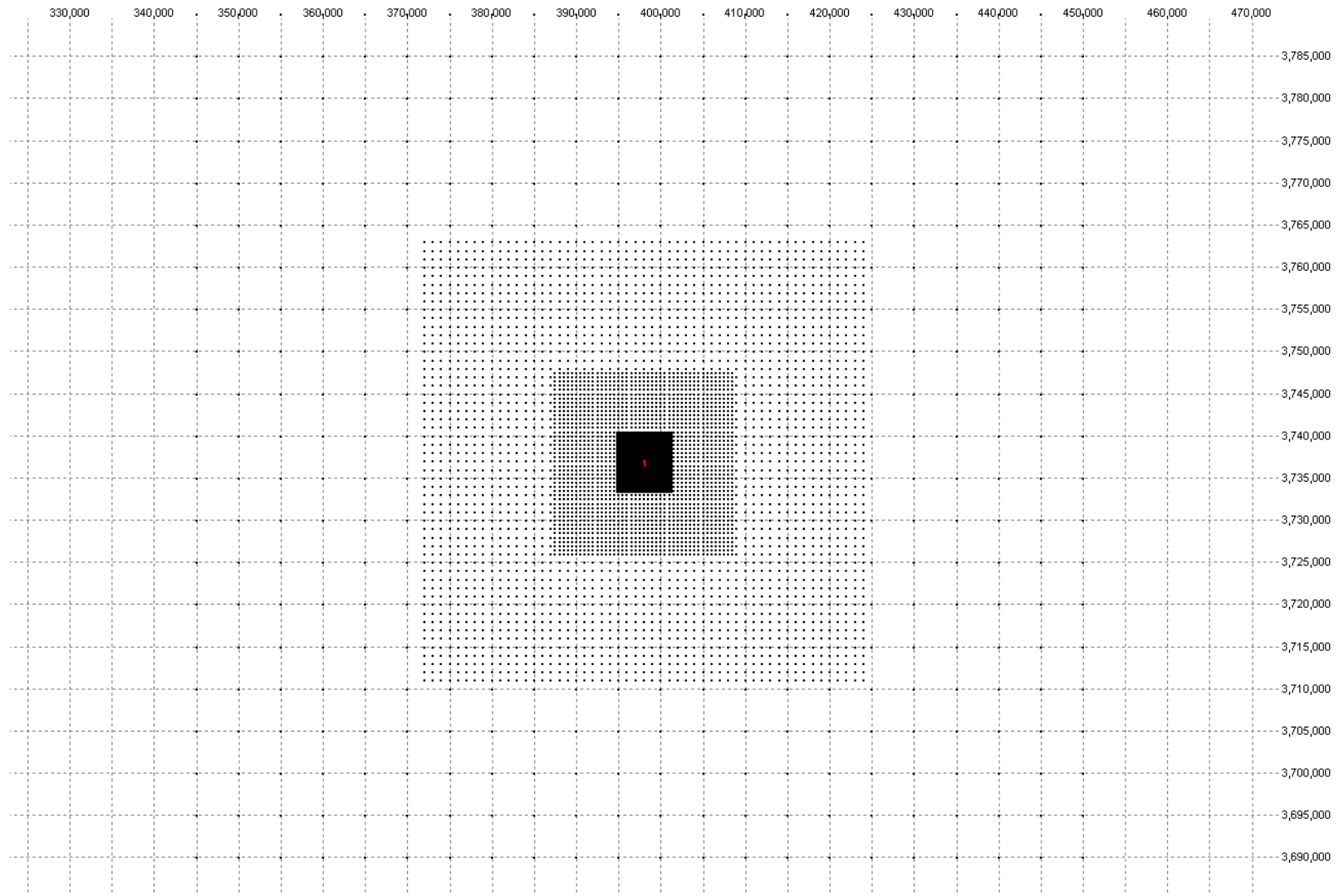
Alamitos Energy Center  
 Figure 5.1C-1e  
 December 2013  
 Annual Wind Rose (2006-2009 and 2011)



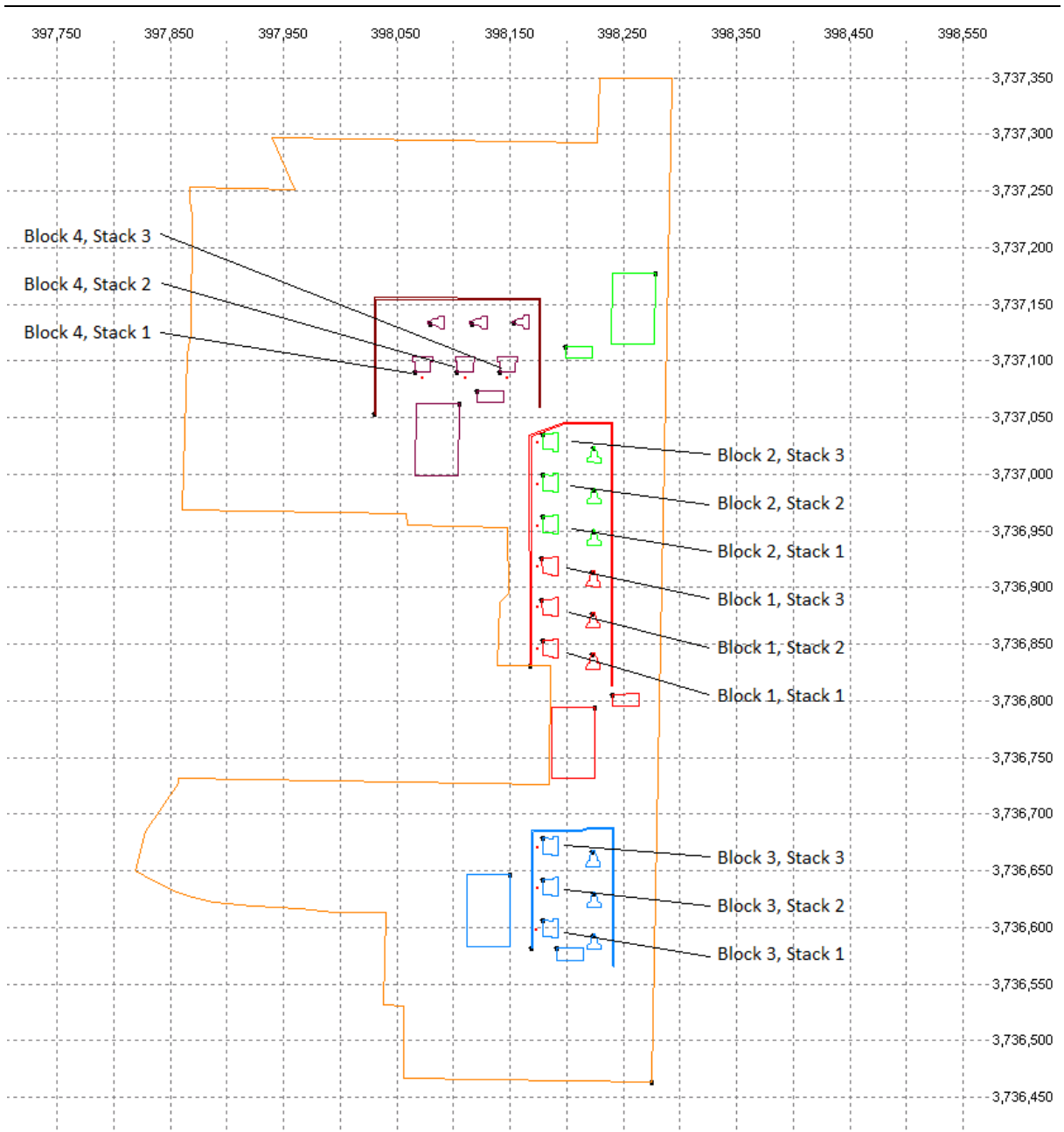
Alamitos Energy Center  
Figure 5.1C-2  
December 2013  
AERMOD Commissioning Model Setup



Alamitos Energy Center  
Figure 5.1C-3  
December 2013  
Commissioning Receptor Grid

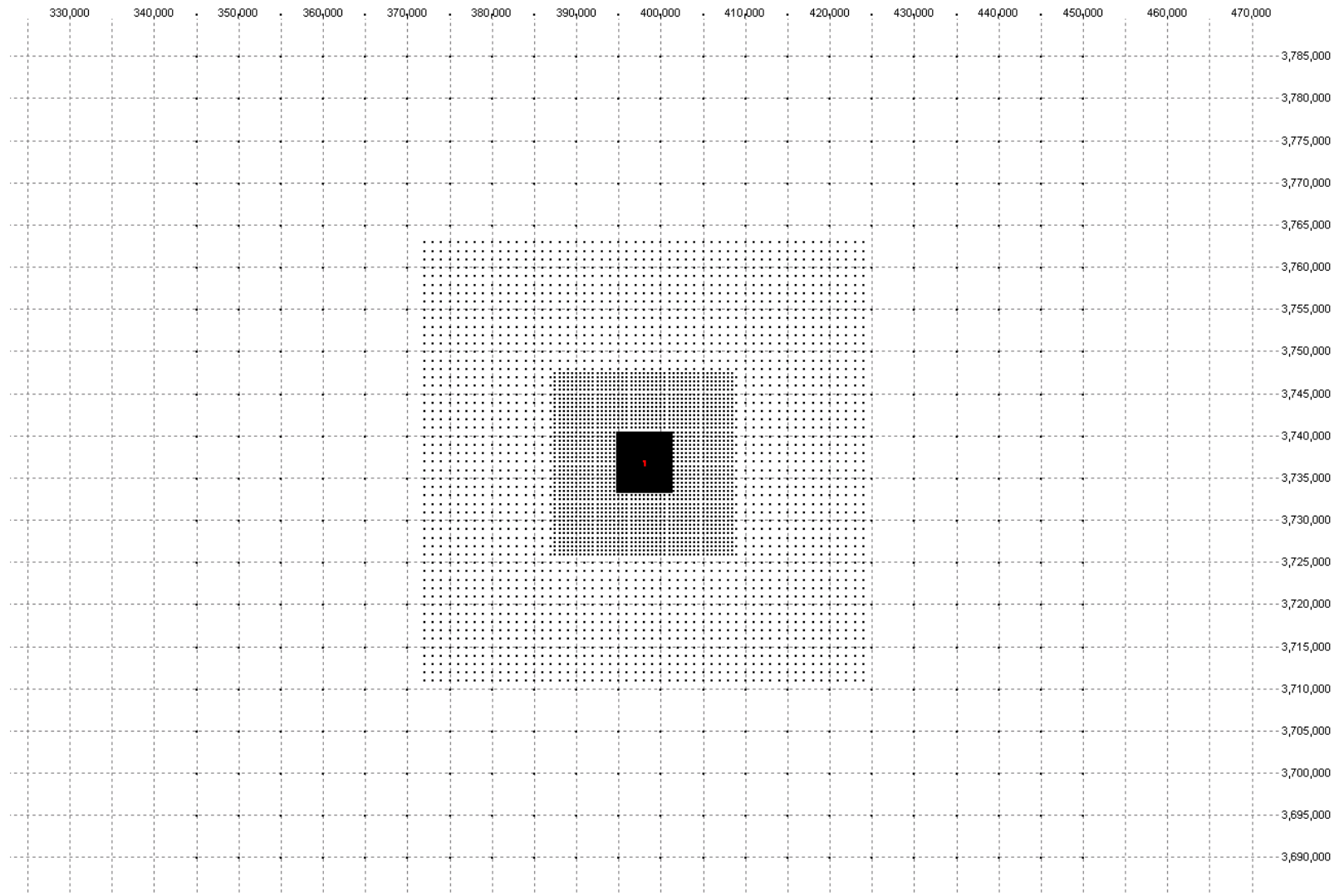


Alamitos Energy Center  
Figure 5.1C-4  
December 2013  
AERMOD Operational Model Setup

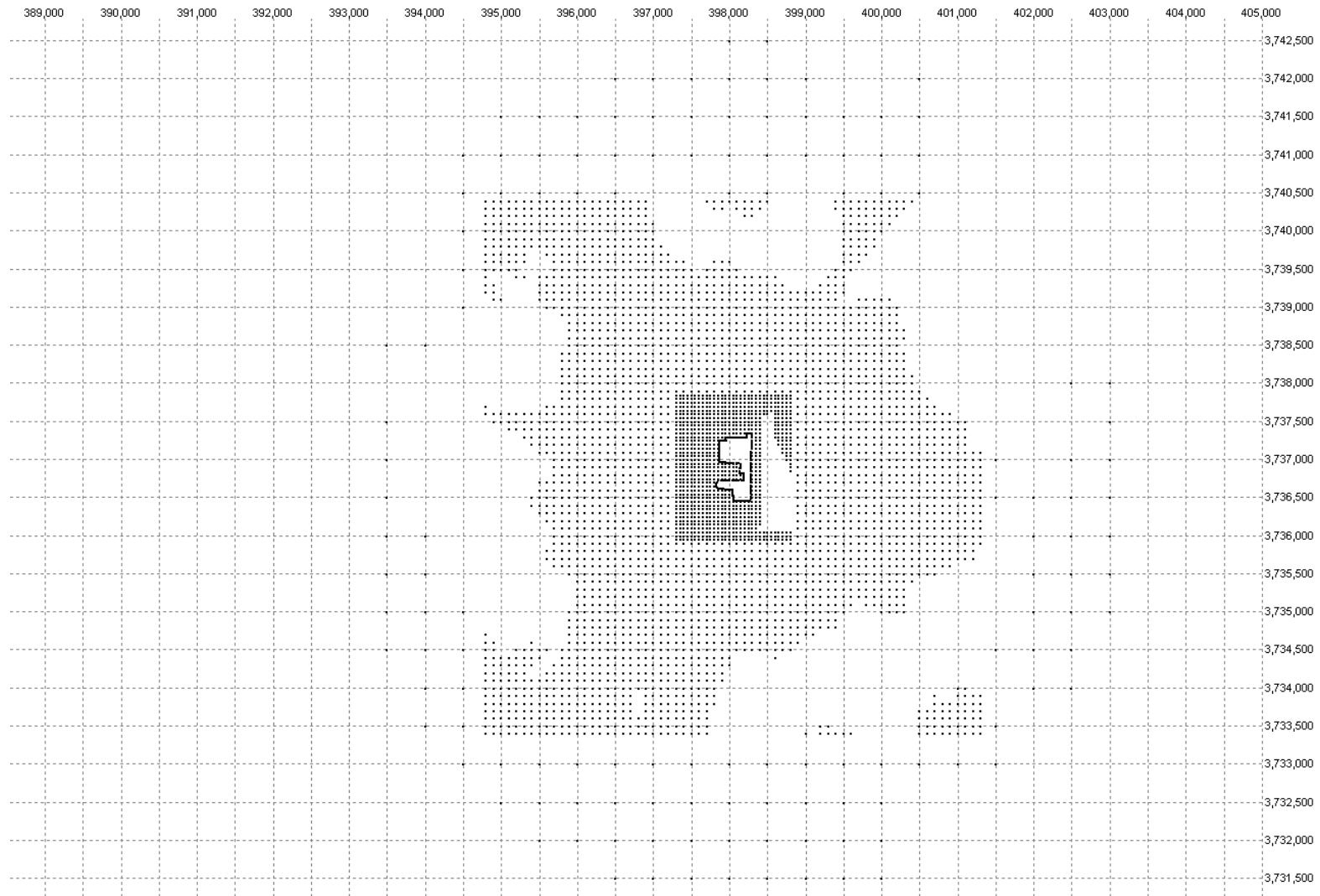




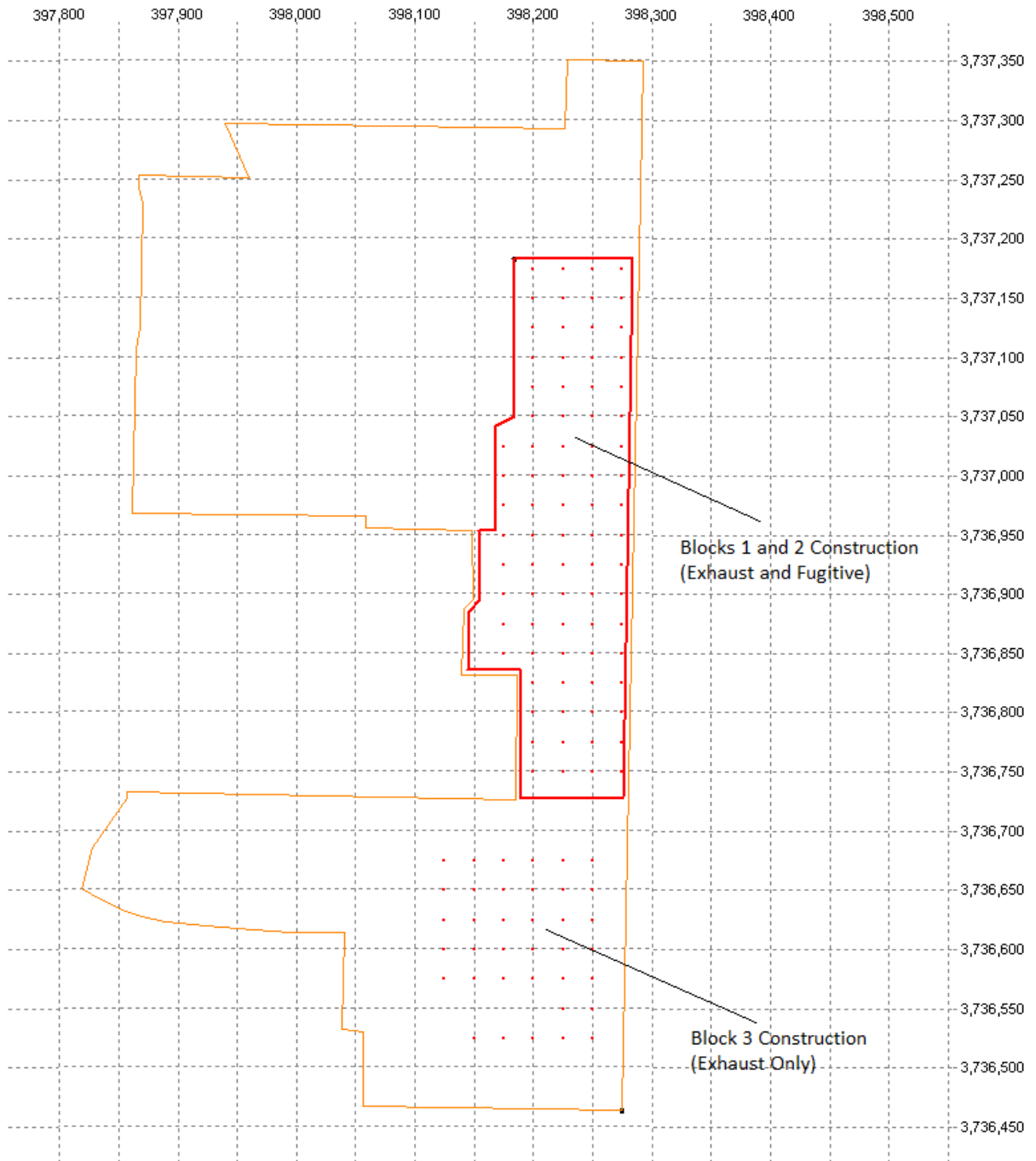
Alamitos Energy Center  
Figure 5.1C-5  
December 2013  
Operational Receptor Grid



Alamitos Energy Center  
Figure 5.1C-6  
December 2013  
Competing Source Receptor Grid



Alamitos Energy Center  
Figure 5.1C-7  
December 2013  
AERMOD Construction Model Setup



Alamitos Energy Center  
Figure 5.1C-8  
December 2013  
Construction Receptor Grid

