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November 8, 2013

VIA E-FILING AND HAND-DELIVERY

El Segundo Energy Center Petition to Amend (00-AFC-14C) Siting Committee
Commissioner Karen Douglas – Presiding Member
Commissioner Janae A. Scott – Associate Member
Paul Kramer – Hearing Officer
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Re: El Segundo Energy Center Petition to Amend (00-AFC-014C)
Applicant's November 5, 2013 Letter to the South Coast Air Quality Management District

Dear Committee Members:

On November 5, 2013, El Segundo Energy Center LLC ("**ESEC LLC**") provided the enclosed letter and compact disk to the South Coast Air Quality Management District. In these enclosures, ESEC LLC analyzes the visibility impacts of the El Segundo Energy Center (00-AFC-014C) project.

Please contact me or my colleague Allison Harris if there are any questions about the enclosed letter.

Locke Lord LLP

By: _____
John A. McKinsey
Attorneys for El Segundo Energy Center LLC

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Enclosures

November 5, 2013

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Kenneth L. Coats
AQ Engineer II
South Coast Air Quality Management District
21865 E. Copley Drive
Diamond Bar, CA 91765

Subject: El Segundo Power Facility Modification Project
Facility ID #115663

Dear Mr. Coats:

On behalf of El Segundo Energy Center LLC, Sierra Research is pleased to submit this Visibility Analysis for the El Segundo Power Facility Modification Project. This analysis is required by federal and District Prevention of Significant Deterioration (PSD) rules. This analysis has been prepared to respond to District comments, and replaces the visibility analysis component of the Additional Impacts analysis submitted on July 21, 2013.

Background

District regulation 1703(a)(3)(E) incorporates the federal PSD requirement for an additional impact analysis into the District's rules. EPA guidance describes the level of effort appropriate for this analysis:

> *Although each applicant for a PSD permit must perform an additional impacts analysis, the depth of the analysis generally will depend on existing air quality, the quantity of emissions, and the sensitivity of local soils, vegetation, and visibility in the source's impact area. It is important that the analysis fully document all sources of information, underlying assumptions, and any agreements made as a part of the analysis.*[1]

On July 21, 2013, the Applicant submitted the required analysis. The District has reviewed the analysis, and on October 2, 2013 provided specific comments and guidance on the visual impacts component.[2]

This document provides an updated visual impacts analysis incorporating and addressing the District's comments and guidance.

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[1] EPA, *New Source Review Workshop Manual (Draft)*, 1990. p. D.1.
[2] Email from Tom Chico to Steve Hill, October 2, 2013

Visibility Impact Analysis

The visibility impact analysis required by District regulation has two components: assessment of the impairment to visibility in the area surrounding the project ("Class II Visibility Impairment Analysis") (Rule 1703(a)(3)(E)); and an assessment of the potential for adverse impact on air quality-related values, including visibility, in Class I areas within 100 km (Class I Area Impact Analysis) (Rule 1703(a)(3)(F)). The procedures for conducting the Class I and Class II visibility analyses are similar, although the purpose of the reviews differ. The Class II analysis is provided for informational purposes; in contrast, if the Class I Area analysis indicates an unacceptable adverse impact on visibility, the project will be denied.

Procedure for Visibility Screening Analysis

The visibility screening analysis assesses the visual impact of plumes from the project, as perceived by an observer at the location being assessed. District and federal regulations require that impacts on Class I areas be assessed. The regulations do not specify where visibility impacts must be assessed outside of Class I areas. In its review of recent PSD permits, EPA Region 9 has established a practice of requiring assessment of visual impacts at state parks and non-Class I federal parks.[3] Up to four levels of analysis may be required, as described below.

Distant Source Impact Screening (> 50 km) – The Federal Land Managers' Air Quality Related Values (AQRV) Work Group (FLAG) has published guidance for a screening approach to determine whether a more refined Class I Air Quality Impact Analysis is required.[4] This screening approach, which applies to receptors located more than 50 km from the project site, requires adding all of the visibility-related emissions (SO_2, NOx, PM_{10}, and sulfuric acid mist) from a project (in units of tons per year)[5] and dividing the sum by the distance between the project site and the Class I area (in kilometers). If the resulting ratio ("Q/D") is less than 10, the project is presumed to have no adverse impact, and no further analysis is performed. For all other cases, a Level 1 visibility screening analysis is performed.

Screening Level 1 – The Level 1 visibility screening analysis is a series of conservative calculations designed to identify those emission sources that have little potential of adversely affecting visibility. The VISCREEN model is used in the Level 1 analysis to model visibility impacts for observers located at each site being evaluated. Calculated values relating source emissions to visibility impacts are compared to a standardized screening value. The Class I threshold is the level at which the Federal Land Manager (FLM) is likely not to object to the issuance of the PSD permit based on near-field visibility impacts to a Class I area.[6] Those sources with calculated values greater than the

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[3] See, for example, EPA, "Fact Sheet and Ambient Air Quality Impact Report for Pio Pico Energy Center," June 2012, p. 47.

[4] U.S. Forest Service et al., "Federal Land Managers' Air Quality Related Values Work Group (FLAG), Phase I Report—Revised (2010)," October 2010, p. 18.

[5] Emissions (in tons per year) are equal to the maximum daily emissions (lb/day) * 365 days/2000 lb/ton.

[6] U.S. EPA, "Workbook for Plume Visual Impact Screening and Analysis (Revised)," EPA-454/R-92-023, October 1992, p. 1.

screening criteria are judged to have potential visibility impairments. If potential visibility impairments are identified, then the Level 2 analysis is undertaken.

There are two different types of visibility impacts that may be considered, based on visibility impairment inside or outside the park. The first type is the potential impairment of vistas inside the park. For this, the screening analysis assesses the project's potential to impact the view of one part of the park as seen by an observer elsewhere in the park.

The second type of visibility impact is the potential impairment of vistas outside the park. This screening analysis also assesses the project's potential to impact views of the surrounding area as seen by an observer within the park. Protection of vistas outside of Class I areas is not automatic, and protection of vistas outside of Class II areas is uncommon. Following EPA guidance,[7] the VISCREEN results for views outside the park are ignored when those views are not protected.

The relevant visibility parameters are "apparent contrast" and "delta E," which can be computed by the screening visibility model VISCREEN. The Class I area significance thresholds for these two visibility parameters are 0.05 for apparent contrast and 2.00 for delta E.

Screening Level 2 – The Level 2 screening procedure is similar to the Level 1 analysis in that its purpose is to estimate impacts during worst-case meteorological conditions; however, more specific information regarding the source, topography, regional visual range, and meteorological conditions is assumed to be available. The analysis may be performed with the aid of hand calculations, reference tables and figures, VISCREEN, or a computer-based visibility model called "PLUVUE II."

If the Level 1 and 2 screening analyses indicate the possibility of visibility impairment, a still more detailed analysis may be undertaken in Level 3.

Level 3 Analysis – The Level 3 analysis, no longer a screening analysis, uses the plume visibility model, as well as meteorological and other regional data, to provide an accurate description of the magnitude and frequency of occurrence of impact. The procedures for utilizing the plume visibility model are described in the User's Manual for the Plume Visibility Model, which is available from EPA.

Class I Area Impact Analysis

Class I areas are areas of special national or regional natural, scenic, recreational, or historic value for which the PSD regulations provide special protection. If a proposed major source or major modification may affect a Class I area, the federal PSD regulations require the reviewing authority to provide written notification of any such proposed source to the Federal Land Manager (FLM) and the Federal official with direct responsibility for management of the affected Class I Area. The meaning of the term "may affect" is interpreted by EPA policy to include all major sources or major

[7] U.S. EPA, "Workbook for Plume Visual Impact Screening and Analysis (Revised)," EPA-454/R-92-023, October 1992, p. 27.

modifications that propose to locate within 100 kilometers (km) of a Class I area. There are two Class I areas within 100 km of the project site: San Gabriel Wilderness (53 km), and Cucamonga Wilderness (78 km).

Table 1 shows that the project's emissions are well below the FLAG Distant Source screening criteria (i.e., Q/D < 10), described above. As indicated previously, all Class I areas are more than 50 km from the project site; therefore, no further Class I impact analysis is required.

TABLE 1
CLASS I AIR QUALITY IMPACT SCREENING ANALYSIS

Pollutant	ESPFM Emissions[a] (max 24-hours, lb/day)	ESPFM Emissions[b] (annualized, TPY)	Q/D Screening Threshold[c]	Additional Class I Analysis Required?
SO_2	167.5	30.6	--	--
PM_{10}	468	85.4	--	--
NOx	1018.3	185.8	--	--
Sulfuric Acid Mist	0	0	--	--
Total = "Q"	--	301.8	--	--
		San Gabriel Wilderness		
Distance, km = "D"	--	53	--	--
Q/D	--	5.7	10	NO
		Cucamonga Wilderness		
Distance, km = "D"	--	78	--	--
Q/D	--	3.9	10	NO

[a] Emissions shown are for combined emissions from all new ESPFM emission units.

[b] TPY = max daily emissions (lb/day) *365/2000 . This is much higher than the project's actual annual emissions, because average daily emissions will be much lower (less than half) than maximum daily emissions.

[c] U.S Forest Service et. al., "Federal Land Managers' Air Quality Related Values Work Group (FLAG), Phase I Report—Revised (2010)," October 2010, p. 18-19.

Class II Visibility Impairment Analysis

A Class II visibility impairment analysis is required for any PSD permit application (SCAQMD Rule 1703(a)(3)(E)). This analysis is distinct from a Class I visibility impairment analysis. It is worth noting that the Class II visibility analysis is prepared for informational purposes only, as there is no definition or standard for visibility impairment outside of Class I areas.

A conservative visibility analysis was conducted using VISCREEN for each state park[8] within 20 km[9] of the project site. These parks are listed in Table 2, and the location of each is shown in Figure 1, attached.

[8] There are no national parks within 20 km of the project site.

[9] EPA Region 9 has established a practice of evaluation of visibility impacts on "potentially sensitive state or federal parks, forests, monuments, or recreation areas within 50 km of the project." See, for example, EPA, "Fact Sheet and Ambient Air Quality Impact Report for Palmdale Hybrid Power Project" (August 2011). There are other state and federal parks greater than 20 km, but less than 50 km, from the project site; however, visual impacts from the project at these more distant locations will be less than those analyzed below. Therefore, a site-specific analysis was not performed for these more distant sites.

TABLE 2
CLASS II PARKS WITHIN 20 KM OF ESPFM

Site	Distance from Project Site (km)
Dockweiler State Beach	0.9
Kenneth Hahn State Recreation Area	12
Santa Monica Beach State Park	11
Will Rogers State Historic Park	17.8

Methodology – In general, the Class II Visibility Analysis methodology follows the methodology for a Class I Visibility Analysis. The procedure is divided into two parts, reflecting very different procedures for far-field analysis (where distant plumes affect the general appearance of a scene) and near-field analysis (where plumes or layers are compared against a viewing background).

Distant/multi-source visibility impacts (>50 km) – The first step in evaluating distant visibility impacts is an initial screening step for distant receptors. If the FLAG screening value (Q/D) is less than 10 for a given receptor that is further than 50 km from the project, no further analysis is required for that receptor.

Near-field visibility impairment (plume impact) – In this part of the analysis, the potential for the project's plume to affect visibility within the potentially sensitive Class II area is evaluated. As discussed in more detail below, this step differs from the Class I procedure in that VISCREEN results for views outside of the affected park are ignored.

Results – The results of each of the required analyses are provided below.

Distant/multi-source visibility impacts – As shown in Table 1, Q = 301.8 TPY. At 50 km, Q/D = 6.0. Using the FLAG screening methodology described above, the project would not have an unacceptable visual impact on any receptor more than 50 km away because Q/D is less than 10 for all receptors 50 km away or further.

Near-field visibility impairment (plume impact) – The Class II areas listed in Table 2 were identified as being wholly or partially located within a 20 km radius of the project site, with the minimum distance to the project site as indicated. A Level 1 visibility screening analysis was conducted for each of these areas.

Screening Level 1 – The methodology for the Screening Level 1 analysis was described above. Results of this analysis, using worst-case project emissions, are summarized in Table 3. This table shows that, under worst-case project emissions and dispersion conditions, the project's potential visibility impacts inside all four Class II areas are potentially above the Class I thresholds for significance.[10] Because the visual impacts

[10] The impacts on views outside the Class II areas are also potentially above the Class I thresholds; however, visual impacts outside the Class II areas are not "integral vistas" that are protected under PSD. Consequently, per EPA guidance, the VISCREEN results for plume parcels outside the Class II area are ignored. U.S. EPA, "Workbook for Plume Visual Impact Screening and Analysis (Revised)," EPA-454/R-92-023, 1992, p. 27.

inside the Class II areas are above the Class I area significance criteria, a screening Level 2 visibility analysis was performed.[11]

TABLE 3
ESPFM IMPACTS ON VISIBILITY IN CLASS 2 AREAS
(LEVEL 1 SCREENING ANALYSIS)

Maximum Visual Impacts INSIDE Class II Area

Dockweiler State Beach

					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	167	6	2	2	18.6*	0.05	.23*
Sky	140	167	6	2	2	10.4*	0.05	-.21*
Terrain	10	84	0.9	84	2	56.9*	0.05	.16*
Terrain	140	84	0.9	84	2	8.1*	0.05	0.03

Will Rogers State Historic Park

					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	97	18.6	72	2	1.4	0.05	0.02
Sky	140	97	18.6	72	2	0.8	0.05	-0.02
Terrain	10	84	17.8	84	2	4.7*	0.05	0.03
Terrain	140	84	17.8	84	2	0.4	0.05	0.01

Kenneth Hahn State Recreation Area

					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	106	13	62	2	1.8	0.05	0.02
Sky	140	106	13	62	2	1.1	0.05	-0.02
Terrain	10	84	12	84	2	7.3*	0.05	0.04
Terrain	140	84	12	84	2	0.6	0.05	0.01

Santa Monica State Beach

					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	146	16	22	2	3.4*	0.05	0.04
Sky	140	146	16	22	2	1.9	0.05	-0.04
Terrain	10	84	11	84	2	8.0*	0.05	0.04
Terrain	140	84	11	84	2	0.6	0.05	0.01

* Value is above Class I criterion.

[11] U.S. EPA, "Workbook for Plume Visual Impact Screening and Analysis (Revised)," EPA-454/R-92-023, 1992, p. 1.

Screening Level 2 – Screening Level 2 differs from Screening Level 1 in that more realistic data, representative of the specific project and the area, are used instead of conservative default values. Project-specific values for particle size distributions, ozone concentrations, and meteorological conditions are used.

The meteorological conditions (wind speed, stability class, wind direction) for the Level 2 Analysis were selected using the procedure described in EPA guidance and the meteorological data provided by the District. In this procedure, the dispersion condition is selected such that the sum of all frequencies of occurrence of conditions worse than this condition totals 1 percent. This assessment is made separately for each of the four quarters of the day (i.e., midnight to 6 AM, 6 AM to noon, noon to 6 PM, and 6PM to midnight), and the most conservative result is selected.

The District's data did not include stability class information. Stability class for each data period was determined using the methodology outlined below.

Step 1: Based on the Monin-Obukhov length parameters, assign the initial stability class as shown in Table 4. Monin-Obukhov length parameters were provided by the District as part of the AERMET data set.

Step 2: The stability class assignments shown below in Table 4 are from Figure 5-21, "Typical Ranges of Obukhov length (L) evolution over a diurnal cycle" in Chapter 5 of "Turbulence Kinetic Energy, An Introduction to Boundary Layer Meteorology" (Roland B. Stull, 1994; provided in Attachment 1). These values are also similar to the values shown in Table 5, taken from Gryning et al., 2007.[12]

TABLE 4
STABILITY CLASS ASSIGNMENTS ACCORDING TO THE MONIN-OBUKHOV LENGTH "L" (STULL, 1994)

Monin-Obukhov Length	Stability Class
L > 200	4
100 < L < 200	5
0 < L < 100	6
-50 < L < 0	1
-100 < L < -50	2
-200 < L < 100	3
L < -200	4

Source: Roland B. Stull, "Turbulence Kinetic Energy, An Introduction to Boundary Layer Meteorology", Chapter 5, Figure 5-21, "Typical Ranges of Obukhov length (L) evolution over a diurnal cycle," 1994. (see Attachment 1)

[12] Gryning, S.-E., E. Batchvarova, B. Brummer, H. Jørgensen, and S. Larsen, "On the extension of the wind profile over homogeneous terrain beyond the surface layer." Bound.-Layer Meteor.,124, 251–268, 2007.

TABLE 5
STABILITY CLASSES ACCORDING TO THE
MONIN-OBUKHOV LENGTH "L" (GRYNING ET AL., 2007)

Monin-Obukhov Length	Stability Class
-500 < L < -50	Unstable
L > 500; L < -500	Neutral
200 < L < 500	Near-Stable
50 < L < 200	Stable
10 < L < 50	Very Stable

Source: Gryning, S.-E., E. Batchvarova, B. Brummer, H. Jørgensen, and S. Larsen, "On the extension of the wind profile over homogeneous terrain beyond the surface layer." Bound.-Layer Meteor.,124, 251–268, 2007.

Step 3: The initial assigned stability class was then adjusted for wind speed according to Table 6-8b, "Wind Speed Adjustment for Determining Final Estimate of Pasquill Stability Category from σ_E" on page 6-17 of "Meteorological Monitoring Guidance for Regulatory Modeling Applications" (February 2000) (provided in Attachment 2).

Step 4: Standard EPA practice in regulatory dispersion modeling is to restrict temporal change in stability class to no more than one per hour[13] (stability "smoothing"). If the stability classes assigned in steps 1 and 2 resulted in a difference of more than one stability class between adjacent hours, an adjustment was made to the latter hour stability class to reduce the difference to one stability class.

Following the procedure in EPA Guidance, the meteorological data for each hour were grouped according to hour of the day, then ranked according to the severity of plume visual impacts. No hours were excluded due to transport time to receptor because all transport times were less than 12 hours.

The resulting Level 2 meteorological conditions for each receptor were the same as the default Level 1 conditions (i.e., Class F, 1 m/sec) because the area is characterized by low wind speeds, and it only takes 22 hours per year at a given set of conditions and time-of-day to meet the 1% threshold. The joint frequency distribution of wind speed, wind direction, and stability class used to determine the conditions used for the Level 2 analysis are contained in the workbook "RWJOINT_FREQ_Elsegundo--October 2013" which accompanies this letter.

The receptor-specific values and model results are shown in Tables 6 through 9. Table 7 shows that under worst-case project-specific emissions and dispersion conditions, the project's potential visibility impacts inside Will Rogers State Historic Park are below

[13] EPA, *PCRAMMET User's Guide EPA-454/R-96-001* (June 1999), p. 4-3.

the Class I thresholds for significance.[14] This completes the Class II visibility analyses for this park.

TABLE 6
ESPFM IMPACTS ON VISIBILITY IN DOCKWEILER STATE BEACH
(LEVEL 2 SCREENING ANALYSIS)

Background Ozone: 0.04 ppm		Emission	Density	Diameter
Background Visual Range: 110 km[b]	Particulate:	2.46 g/s	2.5	1
Source-Observer Distance: .9 km	NOx:	5.35 g/s		
Min. Source-Class II Distance: .9 km	Primary NO2	0.00 g/s		
Max. Source-Class II Distance: 6 km	Soot	0.00 g/s	2.0	1
Plume-source-observer angle: 11.25 degrees	Sulfate	0.00 g/s	1.5	4
Stability: 6				
Wind Speed: 1.00 m/s				

Maximum Visual Impacts INSIDE Class II Area

					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	167	6	2	2	14.102*	0.05	-.122*
Sky	140	167	6	2	2	11.725*	0.05	-.087*
Terrain	10	84	0.9	84	2	27.444*	0.05	.129*
Terrain	140	84	0.9	84	2	11.481*	0.05	.156*

Maximum Visual Impacts OUTSIDE Class II Area[a,b]

					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	5	0.3	164	2	9.360*	0.05	-.145*
Sky	140	5	0.3	164	2	11.920*	0.05	-.064*
Terrain	10	5	0.3	164	2	67.823*	0.05	.255*
Terrain	140	5	0.3	164	2	29.842*	0.05	.317*

[a] National Park Service, Visibility Monitoring Data, *http://www.nature.nps.gov/air/monitoring/vismon.cfm#data* (accessed 3/17/2011).
[b] VISCREEN results for plume parcels outside the Class II area are ignored.
* Value is above Class I criterion.

[14] The impacts on views outside the Class II areas are above the Class I thresholds. However, as discussed above, visual impacts outside the Class II areas are not "integral vistas" that are protected. Consequently, per EPA guidance, the VISCREEN results for plume parcels outside the Class II area are ignored.

TABLE 7
ESPFM IMPACTS ON VISIBILITY IN WILL ROGERS STATE HISTORIC PARK (LEVEL 2 SCREENING ANALYSIS)

Background Ozone: 0.04 ppm		Emission	Density	Diameter
Background Visual Range: 110 km[b]	Particulate:	2.46 g/s	2.5	1
Source-Observer Distance: 17.8 km	NOx:	5.35 g/s		
Min. Source-Class II Distance: 17.8 km	Primary NO2	0.00 g/s		
Max. Source-Class II Distance: 18.6 km	Soot	0.00 g/s	2.0	1
Plume-source-observer angle: 11.25 degrees	Sulfate	0.00 g/s	1.5	4
Stability: 6				
Wind Speed: 1.00 m/s				

Maximum Visual Impacts INSIDE Class II Area

					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	97	18.6	72	2	1.261	0.05	-0.009
Sky	140	97	18.6	72	2	0.967	0.05	-0.006
Terrain	10	84	17.8	84	2	1.576	0.05	0.006
Terrain	140	84	17.8	84	2	0.561	0.05	0.008

Maximum Visual Impacts OUTSIDE Class II Area[a,b]

					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	1	1	168	2	3.563*	0.05	-0.034
Sky	140	1	1	168	2	2.877*	0.05	-0.024
Terrain	10	1	1	168	2	9.266*	0.05	.100*
Terrain	140	1	1	168	2	4.270*	0.05	.112*

[a] National Park Service, Visibility Monitoring Data, *http://www.nature.nps.gov/air/monitoring/vismon.cfm#data* (accessed 3/17/2011) .
[b] VISCREEN results for plume parcels outside the Class II area are ignored.
* Value is above Class I criterion.

TABLE 8
ESPFM IMPACTS ON VISIBILITY IN KENNETH HAHN STATE RECREATION AREA (LEVEL 2 SCREENING ANALYSIS)

		Emission	Density	Diameter
Background Ozone: 0.04 ppm	Particulate:	2.46 g/s	2.5	1
Background Visual Range: 110 km[b]	NOx:	5.35 g/s		
Source-Observer Distance: 12 km	Primary NO2	0.00 g/s		
Min. Source-Class II Distance: 12 km	Soot	0.00 g/s	2.0	1
Max. Source-Class II Distance: 13 km	Sulfate	0.00 g/s	1.5	4
Plume-source-observer angle: 11.25 degrees				
Stability: 6				
Wind Speed: 1.00 m/s				

Maximum Visual Impacts INSIDE Class II Area

					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	106	13	62	2	1.64	0.05	-0.011
Sky	140	106	13	62	2	1.254	0.05	-0.008
Terrain	10	84	12	84	2	2.414*	0.05	0.008
Terrain	140	84	12	84	2	0.846	0.05	0.01

Maximum Visual Impacts OUTSIDE Class II Area[a,b]

					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	5	3.7	164	2	5.516*	0.05	-0.047
Sky	140	5	3.7	164	2	4.422*	0.05	-0.033
Terrain	10	1	1	168	2	13.263*	0.05	.113*
Terrain	140	1	1	168	2	5.981*	0.05	.131*

[a] National Park Service, Visibility Monitoring Data, *http://www.nature.nps.gov/air/monitoring/vismon.cfm#data* (accessed 3/17/2011).
[b] VISCREEN results for plume parcels outside the Class II area are ignored.
* Value is above Class I criterion.

TABLE 9
ESPFM IMPACTS ON VISIBILITY IN SANTA MONICA STATE BEACH
(LEVEL 2 SCREENING ANALYSIS)

		Emission	Density	Diameter
Background Ozone: 0.04 ppm	Particulate:	2.46 g/s	2.5	1
Background Visual Range: 110 km[b]	NOx:	5.35 g/s		
Source-Observer Distance: 11 km	Primary NO2	0.00 g/s		
Min. Source-Class II Distance: 11 km	Soot	0.00 g/s	2.0	1
Max. Source-Class II Distance: 16 km	Sulfate	0.00 g/s	1.5	4
Plume-source-observer angle: 11.25 degrees				
Stability: 6				
Wind Speed: 1.00 m/s				

Maximum Visual Impacts INSIDE Class II Area

					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	146	16	22	2	2.819*	0.05	-0.021
Sky	140	146	16	22	2	2.197*	0.05	-0.015
Terrain	10	84	11	84	2	2.649*	0.05	0.008
Terrain	140	84	11	84	2	0.927	0.05	0.011

Maximum Visual Impacts OUTSIDE Class II Area[a,b]

					Delta E		Contrast	
Background	Theta	Azi	Dist	Alpha	Class I Criterion	Plume	Class I Criterion	Plume
Sky	10	5	3.4	164	2	6.006*	0.05	-0.05
Sky	140	5	3.4	164	2	4.811*	0.05	-0.036
Terrain	10	1	1	168	2	14.233*	0.05	.114*
Terrain	140	1	1	168	2	6.373*	0.05	.134*

[a] National Park Service, Visibility Monitoring Data, *http://www.nature.nps.gov/air/monitoring/vismon.cfm#data* (accessed 3/17/2011).
[b] VISCREEN results for plume parcels outside the Class II area are ignored.

Tables 6, 8, and 9 indicate that the project may have impacts on visibility above Class I thresholds within Dockweiler State Beach, Kenneth Hahn State Recreation Area, and Santa Monica State Beach. Vistas outside the parks are also potentially impacted above Class I thresholds; however, as with the other Class II parks, per EPA guidance these results are not used.

Level 3 Visibility Analysis – The VISCREEN analysis described above gives a conservative characterization of plume visibility.[15] The objective of the screening exercise is to identify sources that can be determined to be unlikely to cause visibility impairment. Those sources that do not screen out can, if necessary, be analyzed further in a more detailed manner, with more sophisticated models.

In a Level 3 analysis, "the objective is broadened from conservative analysis of worst-case conditions to a realistic analysis of all conditions that would be expected to occur in

[15] U.S. EPA, "Workbook for Plume Visual Impact Screening and Analysis (Revised)," EPA-454/R-92-023, October 1992, p. B-20.

a typical year in the region that includes both the emission source and the observer. A Level 3 analysis is no longer considered screening because it is a "comprehensive analysis of the magnitude and frequency of plume visual impacts as observed at a sensitive Class I area vista."[16]

If the purpose of the present analysis were to demonstrate that the project did not impair visibility in a Class I area, or a Class II area with protected vistas, a Level 3 analysis would be performed because the Class I thresholds were exceeded for three of the Class II parks. A Level 3 analysis would involve calculating plume visibility impacts for a representative sample of stability, wind speed, and wind direction conditions, and preparing charts showing the frequency distribution of plume visibility impacts. Cumulative frequency plots would be developed for each season, and time of day.

However, this is a Class II visibility analysis—it is prepared for informational purposes only, and there are no standards that must be met. The Level 2 screening analysis provides adequate information for the permitting process, and the additional time and expense of a more refined analysis is not necessary or justified for this project. Given the existing industrial nature of the site and the surrounding area, the presence of other similar power plant stacks and associated plumes in the immediate vicinity, a Level 2 screening analysis provides adequate depth of analysis for this application.

Conclusions for Visibility Analysis

There are two Class I areas within 100 km of the project site, each of which is more than 50 km away. Following Federal Land Manager guidance, a Q/D screening analysis was performed, demonstrating that air quality value impacts on these Class I areas are unlikely.

For Class II sites, a Level 2 Visibility Screening Analysis was performed for all four state parks within 20 km of the project site. Plume visibility impacts within one of the parks will be below the Class I thresholds. Plume visibility impacts within three of the parks may exceed the Class I thresholds. However, because the receptors are Class II areas, the Class I thresholds do not apply, and the analysis is required for informational purposes only. Because the analysis is for informational purposes only, a Level 2 Visibility Analysis is sufficient.

[16] U.S. EPA, "Workbook for Plume Visual Impact Screening and Analysis (Revised)," EPA-454/R-92-023, October 1992, p. 51.

If you have any questions regarding this matter, please do not hesitate to contact George Piantka at 760-710-2156 or me at 916-273-5139.

Sincerely,

for Tom Andrews

cc: Craig Hoffman, CEC Project Manager
George Piantka, NRG
Ken Riesz, NRG
Steve Odabashian, NRG
Cleveland Holladay, EPA Region 9

Attachments

Kenneth Hahn Analysis

Kenneth Hahn Distance to Receptor 12.00 KM

QRTR of the Day	STAB	TH	SIG-Y	SIG-Z	Number of hours per year with specified dispersion conditions (i.e., stability classification, wind speed category, and wind direction toward receptor)										
					Wind Speed Category (m/s)										
					0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10+
1	A	0.312	1799.70	5000.00	0	0	0	0	0	0	0	0	0	0	0
2	A				0	5	12	0	0	0	0	0	0	0	0
3	A				0	16	61	0	0	0	0	0	0	0	0
4	A				0	0	0	0	0	0	0	0	0	0	0
1	B	0.241	1374.67	1669.51	0	0	0	0	0	0	0	0	0	0	0
2	B				0	13	57	126	0	1	0	0	0	0	0
3	B				0	13	23	113	2	0	0	0	0	0	0
4	B				0	0	2	0	0	0	0	0	0	0	0
1	C	0.171	964.29	593.48	0	0	0	0	0	0	0	0	0	0	0
2	C				0	46	73	123	77	24	0	0	0	0	0
3	C				6	22	21	114	100	43	0	0	0	0	1
4	C				1	2	8	3	1	0	0	0	0	0	0
1	D	0.114	639.31	157.14	7	9	3	6	9	9	8	1	0	0	2
2	D				11	46	44	25	5	1	6	2	0	0	0
3	D				5	11	29	61	41	20	13	9	1	0	1
4	D				9	25	17	32	9	0	2	4	0	0	0
1	E	0.086	478.59	90.20	1	1	6	18	0	0	0	0	0	0	4
2	E				19	32	11	2	0	0	0	0	0	0	0
3	E				3	6	17	12	0	0	0	0	0	0	0
4	E				26	43	51	100	7	0	0	0	0	0	0
1	F	0.057	318.63	53.53	144	181	79	0	0	0	0	0	0	0	0
2	F				3	9	1	0	0	0	0	0	0	0	0
3	F				1	3	5	0	0	0	0	0	0	0	0
4	F				184	280	175	0	0	0	0	0	0	0	0

TOTAL NUMBER OF HOURS 3016
(with wind blowing towards receptor)

Kenneth Hahn

Stability	A	B	C	D	E	F
TH	0.3119207	0.2414892	0.1710796	0.1140464	0.0855389	0.0570267
SIG-Y	1799.70	1374.67	964.29	639.31	478.59	318.63
SIG-Z	5000.00	1669.51	593.48	157.14	90.20	53.53

Dispersion Conditions (Stability, Wind speed)	Sig-Product (m^3/S)	Transport Time (hr)	Number of hours per year with specified dispersion conditions (i.e., stability classification, wind speed category, and wind direction toward receptor) Time of day Quadrant 1	Quadrant 2	Quadrant 3	Quadrant 4
A,1	4.499E+06	6.67	0	0	0	0
A,2	1.350E+07	2.22	0	5	16	0
A,3	2.250E+07	1.33	0	12	61	0
A,4	3.149E+07	0.95	0	0	0	0
A,5	4.049E+07	0.74	0	0	0	0
A,6	4.949E+07	0.61	0	0	0	0
A,7	5.849E+07	0.51	0	0	0	0
A,8	6.749E+07	0.44	0	0	0	0
A,9	7.649E+07	0.39	0	0	0	0
A,10	8.549E+07	0.35	0	0	0	0
A,11	9.448E+07	0.32	0	0	0	0
B,1	1.148E+06	6.67	0	0	0	0
B,2	3.443E+06	2.22	0	13	13	0
B,3	5.738E+06	1.33	0	57	23	2
B,4	8.033E+06	0.95	0	126	113	0
B,5	1.033E+07	0.74	0	0	2	0
B,6	1.262E+07	0.61	0	1	0	0
B,7	1.492E+07	0.51	0	0	0	0
B,8	1.721E+07	0.44	0	0	0	0
B,9	1.951E+07	0.39	0	0	0	0
B,10	2.180E+07	0.35	0	0	0	0
B,11	2.410E+07	0.32	0	0	0	0
C,1	2.861E+05	6.67	0	0	6	1
C,2	8.584E+05	2.22	0	46	22	2
C,3	1.431E+06	1.33	0	73	21	8
C,4	2.003E+06	0.95	0	123	114	3
C,5	2.575E+06	0.74	0	77	100	1
C,6	3.148E+06	0.61	0	24	43	0
C,7	3.720E+06	0.51	0	0	0	0
C,8	4.292E+06	0.44	0	0	0	0
C,9	4.864E+06	0.39	0	0	0	0
C,10	5.437E+06	0.35	0	0	0	0
C,11	6.009E+06	0.32	0	0	1	0
D,1	5.023E+04	6.67	7	11	5	9
D,2	1.507E+05	2.22	9	46	11	25
D,3	2.512E+05	1.33	3	44	29	17
D,4	3.516E+05	0.95	6	25	61	32
D,5	4.521E+05	0.74	9	5	41	9
D,6	5.525E+05	0.61	9	1	20	0
D,7	6.530E+05	0.51	8	6	13	2
D,8	7.535E+05	0.44	1	2	9	4
D,9	8.539E+05	0.39	0	0	1	0
D,10	9.544E+05	0.35	0	0	0	0
D,11	1.055E+06	0.32	2	0	1	0
E,1	2.158E+04	6.67	1	19	3	26
E,2	6.475E+04	2.22	1	32	6	43
E,3	1.079E+05	1.33	6	11	17	51
E,4	1.511E+05	0.95	18	2	12	100
E,5	1.943E+05	0.74	0	0	0	7
E,6	2.374E+05	0.61	0	0	0	0
E,7	2.806E+05	0.51	0	0	0	0
E,8	3.238E+05	0.44	0	0	0	0
E,9	3.669E+05	0.39	0	0	0	0
E,10	4.101E+05	0.35	0	0	0	0
E,11	4.533E+05	0.32	4	0	0	0
F,1	8.529E+03	6.67	144	3	1	184
F,2	2.559E+04	2.22	181	9	3	280
F,3	4.265E+04	1.33	79	1	5	175
F,4	5.970E+04	0.95	0	0	0	0
F,5	7.676E+04	0.74	0	0	0	0
F,6	9.382E+04	0.61	0	0	0	0
F,7	1.109E+05	0.51	0	0	0	0
F,8	1.279E+05	0.44	0	0	0	0
F,9	1.450E+05	0.39	0	0	0	0
F,10	1.621E+05	0.35	0	0	0	0
F,11	1.791E+05	0.32	0	0	0	0

Rank-ordered Joint Frequency Table

Kenneth Hahn

Dispersion Conditions (Stability, Wind speed)	Sig-Product (m^3/s)	Transport Time (hr)	Number of hours per year with specified dispersion conditions (i.e., stability classification, wind speed category, and wind direction toward receptor Time of day Quadrant 1	Quadrant 2	Quadrant 3	Quadrant 4
F,1	8529.00827	6.666666667	144	3	1	184
E,1	21583.4148	6.666666667	1	19	3	26
F,2	25587.0248	2.222222222	181	9	3	280
F,3	42645.0413	1.333333333	79	1	5	175
D,1	50231.0788	6.666666667	7	11	5	9
F,4	59703.0579	0.952380952	0	0	0	0
E,2	64750.2445	2.222222222	1	32	6	43
F,5	76761.0744	0.740740741	0	0	0	0
F,6	93819.0909	0.606060606	0	0	0	0
E,3	107917.074	1.333333333	6	11	17	51
F,7	110877.107	0.512820513	0	0	0	0
F,8	127935.124	0.444444444	0	0	0	0
F,9	144993.141	0.392156863	0	0	0	0
D,2	150693.236	2.222222222	9	46	11	25
E,4	151083.904	0.952380952	18	2	12	100
F,10	162051.157	0.350877193	0	0	0	0
F,11	179109.174	0.317460317	0	0	0	0
E,5	194250.734	0.740740741	0	0	0	7
E,6	237417.563	0.606060606	0	0	0	0
D,3	251155.394	1.333333333	3	44	29	17
E,7	280584.393	0.512820513	0	0	0	0
C,1	286142.773	6.666666667	0	0	6	1
E,8	323751.223	0.444444444	0	0	0	0
D,4	351617.551	0.952380952	6	25	61	32
E,9	366918.052	0.392156863	0	0	0	0
E,10	410084.882	0.350877193	0	0	0	0
D,5	452079.709	0.740740741	9	5	41	9
E,11	453251.712	0.317460317	4	0	0	0
D,6	552541.866	0.606060606	9	1	20	0
D,7	653004.024	0.512820513	8	6	13	2
D,8	753466.181	0.444444444	1	2	9	4
D,9	853928.339	0.392156863	0	0	1	0
C,2	858428.318	2.222222222	0	46	22	2
D,10	954390.496	0.350877193	0	0	0	0
D,11	1054852.65	0.317460317	2	0	1	0
B,1	1147518	6.666666667	0	0	0	0
C,3	1430713.86	1.333333333	0	73	21	8
C,4	2002999.41	0.952380952	0	123	114	3
C,5	2575284.95	0.740740741	0	77	100	1
C,6	3147570.5	0.606060606	0	24	43	0
B,2	3442553.99	2.222222222	0	13	13	0
C,7	3719856.05	0.512820513	0	0	0	0
C,8	4292141.59	0.444444444	0	0	0	0
A,1	4499254.36	6.666666667	0	0	0	0
C,9	4864427.14	0.392156863	0	0	0	0
C,10	5436712.68	0.350877193	0	0	0	0
B,3	5737589.98	1.333333333	0	57	23	2
C,11	6008998.23	0.317460317	0	0	1	0
B,4	8032625.97	0.952380952	0	126	113	0
B,5	10327662	0.740740741	0	0	2	0
B,6	12622698	0.606060606	0	1	0	0
A,2	13497763.1	2.222222222	0	5	16	0
B,7	14917733.9	0.512820513	0	0	0	0
B,8	17212769.9	0.444444444	0	0	0	0
B,9	19507805.9	0.392156863	0	0	0	0
B,10	21802841.9	0.350877193	0	0	0	0
A,3	22496271.8	1.333333333	0	12	61	0
B,11	24097877.9	0.317460317	0	0	0	0
A,4	31494780.5	0.952380952	0	0	0	0
A,5	40493289.2	0.740740741	0	0	0	0
A,6	49491798	0.606060606	0	0	0	0
A,7	58490306.7	0.512820513	0	0	0	0
A,8	67488815.4	0.444444444	0	0	0	0
A,9	76487324.1	0.392156863	0	0	0	0
A,10	85485832.8	0.350877193	0	0	0	0
A,11	94484341.6	0.317460317	0	0	0	0
			488	774	773	981

Level 2 visibility screening met parameters (stability class, wind speed) are the most conservative values where the cumulative number of hours in any daily time quadrant exceed 1% of the total yearly hours for that quadrant = (8760/4)/100 = 21.9

Santa Monica Analysis

Santa Monica Distance to Receptor 11.00 KM

QRTR of the Day	STAB	TH	SIG-Y	SIG-Z	Number of hours per year with specified dispersion conditions (i.e., stability classification, wind speed category, and wind direction toward receptor)										
					Wind Speed Category (m/s)										
					0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10+
1	A	0.316	1671.48	5000.00	0	0	0	0	0	0	0	0	0	0	0
2	A				0	6	0	0	0	0	0	0	0	0	0
3	A				2	7	8	0	0	0	0	0	0	0	0
4	A				0	0	0	0	0	0	0	0	0	0	0
1	B	0.244	1275.04	1517.51	0	0	0	0	0	0	0	0	0	0	0
2	B				4	16	18	3	1	0	0	0	0	0	0
3	B				1	1	1	0	0	0	0	0	0	0	0
4	B				0	0	0	0	0	0	0	0	0	0	0
1	C	0.173	892.62	548.08	0	0	0	0	0	0	0	0	0	0	0
2	C				1	37	18	7	2	0	0	0	0	0	0
3	C				6	2	0	8	2	0	0	0	0	0	0
4	C				0	0	0	0	0	0	0	0	0	0	0
1	D	0.115	591.73	150.30	9	1	0	4	1	0	0	0	0	0	0
2	D				10	32	9	1	4	3	1	0	0	0	0
3	D				3	5	2	4	1	0	0	0	0	0	0
4	D				10	5	1	6	5	2	0	0	0	0	0
1	E	0.086	442.96	87.29	0	6	3	4	0	0	0	0	0	0	0
2	E				18	12	1	0	0	0	0	0	0	0	0
3	E				3	2	4	2	0	0	0	0	0	0	0
4	E				13	4	5	11	1	0	0	0	0	0	0
1	F	0.058	294.90	52.27	148	76	15	0	0	0	0	0	0	0	0
2	F				1	1	0	0	0	0	0	0	0	0	0
3	F				1	1	1	0	0	0	0	0	0	0	0
4	F				180	114	34	0	0	0	0	0	0	0	0

TOTAL NUMBER OF HOURS 931
(with wind blowing towards receptor)

Santa Monica

	1	2	3	4		
Stability	A	B	C	D	E	F
TH	0.315768	0.2442373	0.1727283	0.1151456	0.0863633	0.0575763
SIG-Y	1671.48	1275.04	892.62	591.73	442.96	294.90
SIG-Z	5000.00	1517.51	548.08	150.30	87.29	52.27

Number of hours per year with specified dispersion conditions (i.e., stability classification, wind speed category, and wind direction toward receptor)

Dispersion Conditions (Stability, Wind speed)	Sig-Product (m^3/S)	Transport Time (hr)	Time of day Quadrant 1	Quadrant 2	Quadrant 3	Quadrant 4
A,1	4.179E+06	6.11	0	0	2	0
A,2	1.254E+07	2.04	0	6	7	0
A,3	2.089E+07	1.22	0	0	8	0
A,4	2.925E+07	0.87	0	0	0	0
A,5	3.761E+07	0.68	0	0	0	0
A,6	4.597E+07	0.56	0	0	0	0
A,7	5.432E+07	0.47	0	0	0	0
A,8	6.268E+07	0.41	0	0	0	0
A,9	7.104E+07	0.36	0	0	0	0
A,10	7.940E+07	0.32	0	0	0	0
A,11	8.775E+07	0.29	0	0	0	0
B,1	9.674E+05	6.11	0	4	1	0
B,2	2.902E+06	2.04	0	16	1	0
B,3	4.837E+06	1.22	0	18	1	0
B,4	6.772E+06	0.87	0	3	0	0
B,5	8.707E+06	0.68	0	1	0	0
B,6	1.064E+07	0.56	0	0	0	0
B,7	1.258E+07	0.47	0	0	0	0
B,8	1.451E+07	0.41	0	0	0	0
B,9	1.645E+07	0.36	0	0	0	0
B,10	1.838E+07	0.32	0	0	0	0
B,11	2.032E+07	0.29	0	0	0	0
C,1	2.446E+05	6.11	0	1	6	0
C,2	7.338E+05	2.04	0	37	2	0
C,3	1.223E+06	1.22	0	18	0	0
C,4	1.712E+06	0.87	0	7	8	0
C,5	2.202E+06	0.68	0	2	2	0
C,6	2.691E+06	0.56	0	0	0	0
C,7	3.180E+06	0.47	0	0	0	0
C,8	3.669E+06	0.41	0	0	0	0
C,9	4.158E+06	0.36	0	0	0	0
C,10	4.648E+06	0.32	0	0	0	0
C,11	5.137E+06	0.29	0	0	0	0
D,1	4.447E+04	6.11	9	10	3	10
D,2	1.334E+05	2.04	1	32	5	5
D,3	2.223E+05	1.22	0	9	2	1
D,4	3.113E+05	0.87	4	1	4	6
D,5	4.002E+05	0.68	1	4	1	5
D,6	4.891E+05	0.56	0	3	0	2
D,7	5.781E+05	0.47	0	1	0	0
D,8	6.670E+05	0.41	0	0	0	0
D,9	7.560E+05	0.36	0	0	0	0
D,10	8.449E+05	0.32	0	0	0	0
D,11	9.338E+05	0.29	0	0	0	0
E,1	1.933E+04	6.11	0	18	3	13
E,2	5.800E+04	2.04	6	12	2	4
E,3	9.667E+04	1.22	3	1	4	5
E,4	1.353E+05	0.87	4	0	2	11
E,5	1.740E+05	0.68	0	0	0	1
E,6	2.127E+05	0.56	0	0	0	0
E,7	2.513E+05	0.47	0	0	0	0
E,8	2.900E+05	0.41	0	0	0	0
E,9	3.287E+05	0.36	0	0	0	0
E,10	3.673E+05	0.32	0	0	0	0
E,11	4.060E+05	0.29	0	0	0	0
F,1	7.708E+03	6.11	148	1	1	180
F,2	2.312E+04	2.04	76	1	1	114
F,3	3.854E+04	1.22	15	0	1	34
F,4	5.395E+04	0.87	0	0	0	0
F,5	6.937E+04	0.68	0	0	0	0
F,6	8.478E+04	0.56	0	0	0	0
F,7	1.002E+05	0.47	0	0	0	0
F,8	1.156E+05	0.41	0	0	0	0
F,9	1.310E+05	0.36	0	0	0	0
F,10	1.464E+05	0.32	0	0	0	0
F,11	1.619E+05	0.29	0	0	0	0

Rank-ordered Joint Frequency Table

Santa Monica Dispersion Conditions (Stability, Wind speed)	Sig-Product (m^3/s)	Transport Time (hr)	Number of hours per year with specified dispersion conditions (i.e., stability classification, wind speed category, and wind direction toward receptor Time of day Quadrant 1	Quadrant 2	Quadrant 3	Quadrant 4
F,1	7707.56189	6.111111111	148	1	1	180
E,1	19333.1977	6.111111111	0	18	3	13
F,2	23122.6857	2.037037037	76	1	1	114
F,3	38537.8094	1.222222222	15	0	1	34
D,1	44467.905	6.111111111	9	10	3	10
F,4	53952.9332	0.873015873	0	0	0	0
E,2	57999.593	2.037037037	6	12	2	4
F,5	69368.057	0.679012346	0	0	0	0
F,6	84783.1808	0.555555556	0	0	0	0
E,3	96665.9884	1.222222222	3	1	4	5
F,7	100198.305	0.47008547	0	0	0	0
F,8	115613.428	0.407407407	0	0	0	0
F,9	131028.552	0.359477124	0	0	0	0
D,2	133403.715	2.037037037	1	32	5	5
E,4	135332.384	0.873015873	4	0	2	11
F,10	146443.676	0.321637427	0	0	0	0
F,11	161858.8	0.291005291	0	0	0	0
E,5	173998.779	0.679012346	0	0	0	1
E,6	212665.174	0.555555556	0	0	0	0
D,3	222339.525	1.222222222	0	9	2	1
C,1	244613.038	6.111111111	0	1	6	0
E,7	251331.57	0.47008547	0	0	0	0
E,8	289997.965	0.407407407	0	0	0	0
D,4	311275.335	0.873015873	4	1	4	6
E,9	328664.361	0.359477124	0	0	0	0
E,10	367330.756	0.321637427	0	0	0	0
D,5	400211.145	0.679012346	1	4	1	5
E,11	405997.151	0.291005291	0	0	0	0
D,6	489146.955	0.555555556	0	3	0	2
D,7	578082.766	0.47008547	0	1	0	0
D,8	667018.576	0.407407407	0	0	0	0
C,2	733839.113	2.037037037	0	37	2	0
D,9	755954.386	0.359477124	0	0	0	0
D,10	844890.196	0.321637427	0	0	0	0
D,11	933826.006	0.291005291	0	0	0	0
B,1	967444.638	6.111111111	0	4	1	0
C,3	1223065.19	1.222222222	0	18	0	0
C,4	1712291.26	0.873015873	0	7	8	0
C,5	2201517.34	0.679012346	0	2	2	0
C,6	2690743.41	0.555555556	0	0	0	0
B,2	2902333.91	2.037037037	0	16	1	0
C,7	3179969.49	0.47008547	0	0	0	0
C,8	3669195.56	0.407407407	0	0	0	0
C,9	4158421.64	0.359477124	0	0	0	0
A,1	4178710.45	6.111111111	0	0	2	0
C,10	4647647.71	0.321637427	0	0	0	0
B,3	4837223.19	1.222222222	0	18	1	0
C,11	5136873.79	0.291005291	0	0	0	0
B,4	6772112.47	0.873015873	0	3	0	0
B,5	8707001.74	0.679012346	0	1	0	0
B,6	10641891	0.555555556	0	0	0	0
A,2	12536131.4	2.037037037	0	6	7	0
B,7	12576780.3	0.47008547	0	0	0	0
B,8	14511669.6	0.407407407	0	0	0	0
B,9	16446558.8	0.359477124	0	0	0	0
B,10	18381448.1	0.321637427	0	0	0	0
B,11	20316337.4	0.291005291	0	0	0	0
A,3	20893552.3	1.222222222	0	0	8	0
A,4	29250973.2	0.873015873	0	0	0	0
A,5	37608394.1	0.679012346	0	0	0	0
A,6	45965815	0.555555556	0	0	0	0
A,7	54323235.9	0.47008547	0	0	0	0
A,8	62680656.8	0.407407407	0	0	0	0
A,9	71038077.7	0.359477124	0	0	0	0
A,10	79395498.6	0.321637427	0	0	0	0
A,11	87752919.5	0.291005291	0	0	0	0
			267	206	67	391

Level 2 visibility screening met parameters (stability class, wind speed) are the most conservative values where the cumulative number of hours in any daily time quadrant exceed 1% of the total yearly hours for that quadrant = (8760/4)/100 = 21.9

Will Rodgers Analysis

Will Rogers Distance to Receptor 17.80 KM

QRTR of the Day	STAB	TH	SIG-Y	SIG-Z	Number of hours per year with specified dispersion conditions (i.e., stability classification, wind speed category, and wind direction toward receptor)										
					Wind Speed Category (m/s)										
					0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10+
1	A	0.294	2511.09	5000.00	0	0	0	0	0	0	0	0	0	0	0
2	A				0	6	0	0	0	0	0	0	0	0	0
3	A				2	7	8	0	0	0	0	0	0	0	0
4	A				0	0	0	0	0	0	0	0	0	0	0
1	B	0.229	1930.07	2573.10	0	0	0	0	0	0	0	0	0	0	0
2	B				4	16	18	3	1	0	0	0	0	0	0
3	B				1	1	1	0	0	0	0	0	0	0	0
4	B				0	0	0	0	0	0	0	0	0	0	0
1	C	0.164	1366.74	851.20	0	0	0	0	0	0	0	0	0	0	0
2	C				1	37	18	7	2	0	0	0	0	0	0
3	C				6	2	0	8	2	0	0	0	0	0	0
4	C				0	0	0	0	0	0	0	0	0	0	0
1	D	0.109	906.56	192.28	9	1	0	4	1	0	0	0	0	0	0
2	D				10	32	9	1	4	3	1	0	0	0	0
3	D				3	5	2	4	1	0	0	0	0	0	0
4	D				10	5	1	6	5	2	0	0	0	0	0
1	E	0.082	678.77	104.62	0	6	3	4	0	0	0	0	0	0	0
2	E				18	12	1	0	0	0	0	0	0	0	0
3	E				3	2	4	2	0	0	0	0	0	0	0
4	E				13	4	5	11	1	0	0	0	0	0	0
1	F	0.055	451.96	59.65	148	76	15	0	0	0	0	0	0	0	0
2	F				1	1	0	0	0	0	0	0	0	0	0
3	F				1	1	1	0	0	0	0	0	0	0	0
4	F				180	114	34	0	0	0	0	0	0	0	0

TOTAL NUMBER OF HOURS 931
(with wind blowing towards receptor)

Will Rogers

	1	2	3	4		
Stability	A	B	C	D	E	F
TH	0.2944866	0.2290361	0.1636081	0.1090653	0.0818031	0.0545361
SIG-Y	2511.09	1930.07	1366.74	906.56	678.77	451.96
SIG-Z	5000.00	2573.10	851.20	192.28	104.62	59.65

Number of hours per year with specified dispersion conditions (i.e., stability classification, wind speed category, and wind direction toward receptor)

Time of day

Dispersion Conditions (Stability, Wind speed)	Sig-Product (m^3/S)	Transport Time (hr)	Quadrant 1	Quadrant 2	Quadrant 3	Quadrant 4
A,1	6.278E+06	9.89	0	0	2	0
A,2	1.883E+07	3.30	0	6	7	0
A,3	3.139E+07	1.98	0	0	8	0
A,4	4.394E+07	1.41	0	0	0	0
A,5	5.650E+07	1.10	0	0	0	0
A,6	6.905E+07	0.90	0	0	0	0
A,7	8.161E+07	0.76	0	0	0	0
A,8	9.417E+07	0.66	0	0	0	0
A,9	1.067E+08	0.58	0	0	0	0
A,10	1.193E+08	0.52	0	0	0	0
A,11	1.318E+08	0.47	0	0	0	0
B,1	2.483E+06	9.89	0	4	1	0
B,2	7.449E+06	3.30	0	16	1	0
B,3	1.242E+07	1.98	0	18	1	0
B,4	1.738E+07	1.41	0	3	0	0
B,5	2.235E+07	1.10	0	1	0	0
B,6	2.731E+07	0.90	0	0	0	0
B,7	3.228E+07	0.76	0	0	0	0
B,8	3.725E+07	0.66	0	0	0	0
B,9	4.221E+07	0.58	0	0	0	0
B,10	4.718E+07	0.52	0	0	0	0
B,11	5.215E+07	0.47	0	0	0	0
C,1	5.817E+05	9.89	0	1	6	0
C,2	1.745E+06	3.30	0	37	2	0
C,3	2.908E+06	1.98	0	18	0	0
C,4	4.072E+06	1.41	0	7	8	0
C,5	5.235E+06	1.10	0	2	2	0
C,6	6.398E+06	0.90	0	0	0	0
C,7	7.562E+06	0.76	0	0	0	0
C,8	8.725E+06	0.66	0	0	0	0
C,9	9.889E+06	0.58	0	0	0	0
C,10	1.105E+07	0.52	0	0	0	0
C,11	1.222E+07	0.47	0	0	0	0
D,1	8.716E+04	9.89	9	10	3	10
D,2	2.615E+05	3.30	1	32	5	5
D,3	4.358E+05	1.98	0	9	2	1
D,4	6.101E+05	1.41	4	1	4	6
D,5	7.844E+05	1.10	1	4	1	5
D,6	9.587E+05	0.90	0	3	0	2
D,7	1.133E+06	0.76	0	1	0	0
D,8	1.307E+06	0.66	0	0	0	0
D,9	1.482E+06	0.58	0	0	0	0
D,10	1.656E+06	0.52	0	0	0	0
D,11	1.830E+06	0.47	0	0	0	0
E,1	3.550E+04	9.89	0	18	3	13
E,2	1.065E+05	3.30	6	12	2	4
E,3	1.775E+05	1.98	3	1	4	5
E,4	2.485E+05	1.41	4	0	2	11
E,5	3.195E+05	1.10	0	0	0	1
E,6	3.906E+05	0.90	0	0	0	0
E,7	4.616E+05	0.76	0	0	0	0
E,8	5.326E+05	0.66	0	0	0	0
E,9	6.036E+05	0.58	0	0	0	0
E,10	6.746E+05	0.52	0	0	0	0
E,11	7.456E+05	0.47	0	0	0	0
F,1	1.348E+04	9.89	148	1	1	180
F,2	4.044E+04	3.30	76	1	1	114
F,3	6.740E+04	1.98	15	0	1	34
F,4	9.436E+04	1.41	0	0	0	0
F,5	1.213E+05	1.10	0	0	0	0
F,6	1.483E+05	0.90	0	0	0	0
F,7	1.752E+05	0.76	0	0	0	0
F,8	2.022E+05	0.66	0	0	0	0
F,9	2.292E+05	0.58	0	0	0	0
F,10	2.561E+05	0.52	0	0	0	0
F,11	2.831E+05	0.47	0	0	0	0

Rank-ordered Joint Frequency Table

Will Rogers Dispersion Conditions (Stability, Wind speed)	Sig-Product (m^3/s)	Transport Time (hr)	Number of hours per year with specified dispersion conditions (i.e., stability classification, wind speed category, and wind direction toward receptor Time of day Quadrant 1	Quadrant 2	Quadrant 3	Quadrant 4
F,1	13479.8258	9.888888889	148	1	1	180
E,1	35504.6587	9.888888889	0	18	3	13
F,2	40439.4773	3.296296296	76	1	1	114
F,3	67399.1288	1.977777778	15	0	1	34
D,1	87155.0811	9.888888889	9	10	3	10
F,4	94358.7804	1.412698413	0	0	0	0
E,2	106513.976	3.296296296	6	12	2	4
F,5	121318.432	1.098765432	0	0	0	0
F,6	148278.083	0.898989899	0	0	0	0
F,7	175237.735	0.760683761	0	0	0	0
E,3	177523.294	1.977777778	3	1	4	5
F,8	202197.386	0.659259259	0	0	0	0
F,9	229157.038	0.581699346	0	0	0	0
E,4	248532.611	1.412698413	4	0	2	11
F,10	256116.69	0.520467836	0	0	0	0
D,2	261465.243	3.296296296	1	32	5	5
F,11	283076.341	0.470899471	0	0	0	0
E,5	319541.928	1.098765432	0	0	0	1
E,6	390551.246	0.898989899	0	0	0	0
D,3	435775.405	1.977777778	0	9	2	1
E,7	461560.563	0.760683761	0	0	0	0
E,8	532569.881	0.659259259	0	0	0	0
C,1	581681.132	9.888888889	0	1	6	0
E,9	603579.198	0.581699346	0	0	0	0
D,4	610085.567	1.412698413	4	1	4	6
E,10	674588.515	0.520467836	0	0	0	0
E,11	745597.833	0.470899471	0	0	0	0
D,5	784395.73	1.098765432	1	4	1	5
D,6	958705.892	0.898989899	0	3	0	2
D,7	1133016.05	0.760683761	0	1	0	0
D,8	1307326.22	0.659259259	0	0	0	0
D,9	1481636.38	0.581699346	0	0	0	0
D,10	1655946.54	0.520467836	0	0	0	0
C,2	1745043.4	3.296296296	0	37	2	0
D,11	1830256.7	0.470899471	0	0	0	0
B,1	2483132.06	9.888888889	0	4	1	0
C,3	2908405.66	1.977777778	0	18	0	0
C,4	4071767.93	1.412698413	0	7	8	0
C,5	5235130.19	1.098765432	0	2	2	0
A,1	6277718.47	9.888888889	0	0	2	0
C,6	6398492.46	0.898989899	0	0	0	0
B,2	7449396.18	3.296296296	0	16	1	0
C,7	7561854.72	0.760683761	0	0	0	0
C,8	8725216.98	0.659259259	0	0	0	0
C,9	9888579.25	0.581699346	0	0	0	0
C,10	11051941.5	0.520467836	0	0	0	0
C,11	12215303.8	0.470899471	0	0	0	0
B,3	12415660.3	1.977777778	0	18	1	0
B,4	17381924.4	1.412698413	0	3	0	0
A,2	18833155.4	3.296296296	0	6	7	0
B,5	22348188.5	1.098765432	0	1	0	0
B,6	27314452.7	0.898989899	0	0	0	0
A,3	31388592.4	1.977777778	0	0	8	0
B,7	32280716.8	0.760683761	0	0	0	0
B,8	37246980.9	0.659259259	0	0	0	0
B,9	42213245	0.581699346	0	0	0	0
A,4	43944029.3	1.412698413	0	0	0	0
B,10	47179509.2	0.520467836	0	0	0	0
B,11	52145773.3	0.470899471	0	0	0	0
A,5	56499466.3	1.098765432	0	0	0	0
A,6	69054903.2	0.898989899	0	0	0	0
A,7	81610340.1	0.760683761	0	0	0	0
A,8	94165777.1	0.659259259	0	0	0	0
A,9	106721214	0.581699346	0	0	0	0
A,10	119276651	0.520467836	0	0	0	0
A,11	131832088	0.470899471	0	0	0	0
			267	206	67	391

Level 2 visibility screening met parameters (stability class, wind speed) are the most conservative values where the cumulative number of hours in any daily time quadrant exceed 1% of the total yearly hours for that quadrant = (8760/4)/100 = 21.9

Dockweiler Analysis

Dockweiler SB Distance to Receptor 0.90 KM

QRTR of the Day	STAB	TH	SIG-Y	SIG-Z	Number of hours per year with specified dispersion conditions (i.e., stability classification, wind speed category, and wind direction toward receptor)									
					Wind Speed Category (m/s)									
					0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10+
1	A	0.426	190.19	5000.00	0	0	0	0	0	0	0	0	0	0	0
2	A				0	6	0	0	0	0	0	0	0	0	0
3	A				2	7	8	0	0	0	0	0	0	0	0
4	A				0	0	0	0	0	0	0	0	0	0	0
1	B	0.323	140.26	97.37	0	0	0	0	0	0	0	0	0	0	0
2	B				4	16	18	3	1	0	0	0	0	0	0
3	B				1	1	1	0	0	0	0	0	0	0	0
4	B				0	0	0	0	0	0	0	0	0	0	0
1	C	0.22	93.68	55.52	0	0	0	0	0	0	0	0	0	0	0
2	C				1	37	18	7	2	0	0	0	0	0	0
3	C				6	2	0	8	2	0	0	0	0	0	0
4	C				0	0	0	0	0	0	0	0	0	0	0
1	D	0.147	61.88	41.74	9	1	0	4	1	0	0	0	0	0	0
2	D				10	32	9	1	4	3	1	0	0	0	0
3	D				3	5	2	4	1	0	0	0	0	0	0
4	D				10	5	1	6	5	2	0	0	0	0	0
1	E	0.11	46.27	34.04	0	6	3	4	0	0	0	0	0	0	0
2	E				18	12	1	0	0	0	0	0	0	0	0
3	E				3	2	4	2	0	0	0	0	0	0	0
4	E				13	4	5	11	1	0	0	0	0	0	0
1	F	0.073	30.78	26.30	148	76	15	0	0	0	0	0	0	0	0
2	F				1	1	0	0	0	0	0	0	0	0	0
3	F				1	1	1	0	0	0	0	0	0	0	0
4	F				180	114	34	0	0	0	0	0	0	0	0

TOTAL NUMBER OF HOURS 931
(with wind blowing towards receptor)

Dockweiler SB

Stability	A	B	C	D	E	F
TH	0.4264524	0.3232989	0.2201626	0.1467693	0.1100814	0.0733881
SIG-Y	190.19	140.26	93.68	61.88	46.27	30.78
SIG-Z	5000.00	97.37	55.52	41.74	34.04	26.30

Dispersion Conditions (Stability, Wind speed)	Sig-Product (m^3/S)	Transport Time (hr)	Number of hours per year with specified dispersion conditions (i.e., stability classification, wind speed category, and wind direction toward receptor) Time of day Quadrant 1	Quadrant 2	Quadrant 3	Quadrant 4
A,1	4.755E+05	0.50	0	0	2	0
A,2	1.426E+06	0.17	0	6	7	0
A,3	2.377E+06	0.10	0	0	8	0
A,4	3.328E+06	0.07	0	0	0	0
A,5	4.279E+06	0.06	0	0	0	0
A,6	5.230E+06	0.05	0	0	0	0
A,7	6.181E+06	0.04	0	0	0	0
A,8	7.132E+06	0.03	0	0	0	0
A,9	8.083E+06	0.03	0	0	0	0
A,10	9.034E+06	0.03	0	0	0	0
A,11	9.985E+06	0.02	0	0	0	0
B,1	6.828E+03	0.50	0	4	1	0
B,2	2.048E+04	0.17	0	16	1	0
B,3	3.414E+04	0.10	0	18	1	0
B,4	4.780E+04	0.07	0	3	0	0
B,5	6.145E+04	0.06	0	1	0	0
B,6	7.511E+04	0.05	0	0	0	0
B,7	8.877E+04	0.04	0	0	0	0
B,8	1.024E+05	0.03	0	0	0	0
B,9	1.161E+05	0.03	0	0	0	0
B,10	1.297E+05	0.03	0	0	0	0
B,11	1.434E+05	0.02	0	0	0	0
C,1	2.601E+03	0.50	0	1	6	0
C,2	7.802E+03	0.17	0	37	2	0
C,3	1.300E+04	0.10	0	18	0	0
C,4	1.821E+04	0.07	0	7	8	0
C,5	2.341E+04	0.06	0	2	2	0
C,6	2.861E+04	0.05	0	0	0	0
C,7	3.381E+04	0.04	0	0	0	0
C,8	3.901E+04	0.03	0	0	0	0
C,9	4.421E+04	0.03	0	0	0	0
C,10	4.941E+04	0.03	0	0	0	0
C,11	5.462E+04	0.02	0	0	0	0
D,1	1.292E+03	0.50	9	10	3	10
D,2	3.875E+03	0.17	1	32	5	5
D,3	6.458E+03	0.10	0	9	2	1
D,4	9.041E+03	0.07	4	1	4	6
D,5	1.162E+04	0.06	1	4	1	5
D,6	1.421E+04	0.05	0	3	0	2
D,7	1.679E+04	0.04	0	1	0	0
D,8	1.937E+04	0.03	0	0	0	0
D,9	2.196E+04	0.03	0	0	0	0
D,10	2.454E+04	0.03	0	0	0	0
D,11	2.712E+04	0.02	0	0	0	0
E,1	7.876E+02	0.50	0	18	3	13
E,2	2.363E+03	0.17	6	12	2	4
E,3	3.938E+03	0.10	3	1	4	5
E,4	5.513E+03	0.07	4	0	2	11
E,5	7.088E+03	0.06	0	0	0	1
E,6	8.663E+03	0.05	0	0	0	0
E,7	1.024E+04	0.04	0	0	0	0
E,8	1.181E+04	0.03	0	0	0	0
E,9	1.339E+04	0.03	0	0	0	0
E,10	1.496E+04	0.03	0	0	0	0
E,11	1.654E+04	0.02	0	0	0	0
F,1	4.047E+02	0.50	148	1	1	180
F,2	1.214E+03	0.17	76	1	1	114
F,3	2.024E+03	0.10	15	0	1	34
F,4	2.833E+03	0.07	0	0	0	0
F,5	3.643E+03	0.06	0	0	0	0
F,6	4.452E+03	0.05	0	0	0	0
F,7	5.262E+03	0.04	0	0	0	0
F,8	6.071E+03	0.03	0	0	0	0
F,9	6.881E+03	0.03	0	0	0	0
F,10	7.690E+03	0.03	0	0	0	0
F,11	8.500E+03	0.02	0	0	0	0

Rank-ordered Joint Frequency Table

Dockweiler SB

Dispersion Conditions (Stability, Wind speed)	Sig-Product (m^3/s)	Transport Time (hr)	Number of hours per year with specified dispersion conditions (i.e., stability classification, wind speed category, and wind direction toward receptor Time of day Quadrant 1	Quadrant 2	Quadrant 3	Quadrant 4
F,1	4.047E+02	0.50	148	1	1	180
E,1	7.876E+02	0.50	0	18	3	13
F,2	1.214E+03	0.17	76	1	1	114
D,1	1.292E+03	0.50	9	10	3	10
F,3	2.024E+03	0.10	15	0	1	34
E,2	2.363E+03	0.17	6	12	2	4
C,1	2.601E+03	0.50	0	1	6	0
F,4	2.833E+03	0.07	0	0	0	0
F,5	3.643E+03	0.06	0	0	0	0
D,2	3.875E+03	0.17	1	32	5	5
E,3	3.938E+03	0.10	3	1	4	5
F,6	4.452E+03	0.05	0	0	0	0
F,7	5.262E+03	0.04	0	0	0	0
E,4	5.513E+03	0.07	4	0	2	11
F,8	6.071E+03	0.03	0	0	0	0
D,3	6.458E+03	0.10	0	9	2	1
B,1	6.828E+03	0.50	0	4	1	0
F,9	6.881E+03	0.03	0	0	0	0
E,5	7.088E+03	0.06	0	0	0	1
F,10	7.690E+03	0.03	0	0	0	0
C,2	7.802E+03	0.17	0	37	2	0
F,11	8.500E+03	0.02	0	0	0	0
E,6	8.663E+03	0.05	0	0	0	0
D,4	9.041E+03	0.07	4	1	4	6
E,7	1.024E+04	0.04	0	0	0	0
D,5	1.162E+04	0.06	1	4	1	5
E,8	1.181E+04	0.03	0	0	0	0
C,3	1.300E+04	0.10	0	18	0	0
E,9	1.339E+04	0.03	0	0	0	0
D,6	1.421E+04	0.05	0	3	0	2
E,10	1.496E+04	0.03	0	0	0	0
E,11	1.654E+04	0.02	0	0	0	0
D,7	1.679E+04	0.04	0	1	0	0
C,4	1.821E+04	0.07	0	7	8	0
D,8	1.937E+04	0.03	0	0	0	0
B,2	2.048E+04	0.17	0	16	1	0
D,9	2.196E+04	0.03	0	0	0	0
C,5	2.341E+04	0.06	0	2	2	0
D,10	2.454E+04	0.03	0	0	0	0
D,11	2.712E+04	0.02	0	0	0	0
C,6	2.861E+04	0.05	0	0	0	0
C,7	3.381E+04	0.04	0	0	0	0
B,3	3.414E+04	0.10	0	18	1	0
C,8	3.901E+04	0.03	0	0	0	0
C,9	4.421E+04	0.03	0	0	0	0
B,4	4.780E+04	0.07	0	3	0	0
C,10	4.941E+04	0.03	0	0	0	0
C,11	5.462E+04	0.02	0	0	0	0
B,5	6.145E+04	0.06	0	1	0	0
B,6	7.511E+04	0.05	0	0	0	0
B,7	8.877E+04	0.04	0	0	0	0
B,8	1.024E+05	0.03	0	0	0	0
B,9	1.161E+05	0.03	0	0	0	0
B,10	1.297E+05	0.03	0	0	0	0
B,11	1.434E+05	0.02	0	0	0	0
A,1	4.755E+05	0.50	0	0	2	0
A,2	1.426E+06	0.17	0	6	7	0
A,3	2.377E+06	0.10	0	0	8	0
A,4	3.328E+06	0.07	0	0	0	0
A,5	4.279E+06	0.06	0	0	0	0
A,6	5.230E+06	0.05	0	0	0	0
A,7	6.181E+06	0.04	0	0	0	0
A,8	7.132E+06	0.03	0	0	0	0
A,9	8.083E+06	0.03	0	0	0	0
A,10	9.034E+06	0.03	0	0	0	0
A,11	9.985E+06	0.02	0	0	0	0
			267	206	67	391

Level 2 visibility screening met parameters (stability class, wind speed) are the most conservative values where the cumulative number of hours in any daily time quadrant exceed 1% of the total yearly hours for that quadrant = (8760/4)/100 = 21.9

DECLARATION OF SERVICE

I, Dee Hutchinson, declare that on November 8, 2013, I served and filed copies of Applicant's November 5, 2013 Letter to the South Coast Air Quality Management District dated November 8, 2013. The most recent Proof of Service List, which I copied from the web page for this project at: http://www.energy.ca.gov, is attached to this Declaration.

(*Check one*)

For service to all other parties and filing with the Docket Unit at the Energy Commission:

__X__ I successfully uploaded the document to the Energy Commission's e-filing system and I personally delivered the document or deposited it in the US mail with first class postage to those persons for whom a physical mailing address but no e-mail address is shown on the attached Proof of Service List. [The e-filing system will serve the other parties and Committee via e-mail when the document is approved for filing.] **or**

____ I e-mailed the document to docket@energy.ca.gov and I personally delivered the document or deposited it in the US mail with first class postage to those persons for whom a physical mailing address but no e-mail address is shown on the attached Proof of Service List. [The e-filing system will serve the other parties and Committee via e-mail when the document is approved for filing.] **or**

____ Instead of e-filing or e-mailing the document, I personally delivered it or deposited it in the US mail with first class postage to all of the persons on the attached Proof of Service List for whom a mailing address is given and to the

California Energy Commission – Docket Unit
Attn: Docket No. _____
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

[The e-filing system will serve an additional electronic copy on the other parties and Committee via e-mail when the paper document or CD is received, scanned, uploaded, and approved for filing. The electronic copy stored in the e-filing system is the official copy of the document.]

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that I am over the age of 18 years.

Dated: November 8, 2013

Dee Hutchinson

Proof of Service List
Docket: 00-AFC-14C
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