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A PROFESSIONAL CORPORATION

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August 25, 2017

### *Via Email and Overnight Delivery*

Mr. John F. Tavaglione, Chair  
Honorable Members of the Board of  
Supervisors  
Ms. Kecia Harper-Ihem, Clerk of the Board  
Riverside County  
County Administrative Center  
4080 Lemon Street - 5th Floor  
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Mr. Russell Brady, Planner  
Mr. Larry Ross, Principal Planner  
Mr. Steve Weiss, Planning Director  
Riverside County Planning Department  
4080 Lemon Street, 12th Floor  
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Riverside, CA 92502-1409  
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**Re: Action Item 4992 / Public Hearing Item – CUP03684, PUP00916,  
DA00086, EIR00532: Palo Verde Mesa Solar Project (CUP No.  
3684 and PUP No. 916) / Final Environmental Impact Report**

Dear Chair Tavaglione, Honorable Members of the Board of Supervisors, Ms.  
Harper-Ihem, Mr. Brady, Mr. Ross and Mr. Weiss:

On behalf of **Citizens for Responsible Solar (“Citizens”)**, we submit these preliminary comments on Action Item 4992 and the Final Environmental Impact Report (“FEIR”) for the Palo Verde Mesa Solar Project (“Project”). These comments address the FEIR’s response to Citizen’s comments regarding the Project’s potentially significant impacts on avian and bat species due to collisions with the Project’s solar photovoltaic (“PV”) panels and other Project structures. Citizens expressly reserves the right to supplement these comments at the Board hearing, and at any later hearings and proceedings related to this Project.<sup>1</sup>

<sup>1</sup> Citizens submitted comments on the Draft Environmental Impact Report (“DEIR”) for the Project November 28, 2016, and supplemental comments on February 16, 2017. Those comments are incorporated by reference. Citizens reserves the right to supplement these comments at later hearings and proceedings on this Project. Gov. Code § 65009(b); PRC § 21177(a); *Bakersfield* 3447-017acp

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Citizens also requests that the Board of Supervisors continue the August 29, 2017 hearing on the Project by at least 30 to 60 days in order to give the public adequate time to review and respond to the massive amount of new information contained in the FEIR. The FEIR was released on August 17, 2017, less than 10 days ago, and contains over 1000 pages of new evidence and information that was not contained in the DEIR. Citizens and its technical consultants are still in the process of reviewing the FEIR. A continued hearing is necessary in order to ensure a meaningful opportunity for public review of the FEIR and public comment at the Board hearing, in order to give the Board the opportunity to consider the public's comments *before* the County makes any final decisions regarding the Project.

Citizens for Responsible Solar is an unincorporated association of individuals and labor organizations that may be adversely affected by the potential health, safety, public service, and environmental impacts of the Project. The association includes Blythe resident George Ellis, Riverside County resident James Hennegan, and **California Unions for Reliable Energy ("CURE")** and its members and families and other individuals that live and/or work in east Riverside County. Citizens was formed to advocate for responsible and sustainable solar development in and around Riverside County, in order to protect public health and safety and the environment where Citizens' members and their families live, work, and recreate. Citizens has a direct interest in ensuring that the environmental impacts of the Project are fully disclosed to the public and mitigated to the extent feasible, and in ensuring that the County and the Applicant comply with all applicable local, State, and Federal laws in their consideration of this Project.

These comments, and the enclosed resource agency data documenting avian and bat collisions at solar PV projects, constitute substantial evidence demonstrating that the Project will have significant impacts on avian and bat species that the FEIR failed to adequately disclose and mitigate. Citizens urges the Board to fully consider the these comments and evidence prior to conducting any further hearings on the Project.

**I. THERE IS SUBSTANTIAL EVIDENCE DEMONSTRATING THAT THAT THE PROJECT MAY HAVE POTENTIALLY SIGNIFICANT IMPACTS ON BIRD AND BAT SPECIES FROM COLLISIONS WITH**

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*Citizens for Local Control v. Bakersfield* (2004) 124 Cal. App. 4th 1184, 1199-1203; *see Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.  
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## **SOLAR PANELS THAT THE FEIR FAILS TO DISCLOSE AND MITIGATE**

Citizens' DEIR comments included evidence from its biological consultant demonstrating that the Project is likely to have a significant impact on avian and bat species due to collisions with the Project's solar PV panels. Rather than disclose this impact as significant, the FEIR ignores the evidence submitted by Citizens, and instead erroneously concludes that "due to the available scientific knowledge collected at this time, avian mortality due to collision at solar projects is considered low, and impacts would be less than significant in this regard."<sup>2</sup> The FEIR cites to data from a single project, Desert Sunlight, in support of this conclusion.<sup>3</sup> In contrast to the conclusion stated in the FEIR, a review of the Desert Sunlight Project, and numerous other solar PV projects in California and the Western States, demonstrates that solar PV projects have documented hundreds of bird deaths from collisions with solar panels and other project structures at industrial solar sites just like the Project.

In an effort to further document the significance of this impact, and to provide the County with further empirical evidence and expert testimony documenting recent avian collisions at solar PV facilities in California, Citizens has obtained monitoring studies, statistics, and reports of avian collisions directly from CDFW and USFWS, the two wildlife agencies with regulatory oversight over the Project's impacts on avian species.

Citizens hereby submits those studies to the County with this letter. The studies, which are attached hereto as Exhibit A (CDFW Records) and Exhibit B (USFWS Records). The CDFW Records and USFWS Records include avian mortality monitoring reports from numerous solar projects within the California desert regions and the Western states. These studies, and the evidence previously submitted to the County by Citizens and its biological resources expert, constitute substantial evidence demonstrating that the Project may have potentially significant impacts from avian and bat collisions that require mitigation under CEQA.

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<sup>2</sup> RTC 03-66, FEIR p. 2-221.

<sup>3</sup> *Id.*

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The below table is a *partial* summary of the mortalities documented in the CDFW and USFWS Records. This summary clarifies that solar projects in California have been responsible for hundreds of bird deaths in the past 5 years from direct collisions with solar panels and other Project structures, including 155 bird deaths from collisions at the Desert Sunlight Project between 2011 and 2014 alone.

The County's failure to acknowledge and disclose this potentially significant impact is a blatant violation of the County's duty to analyze and mitigate the potentially significant environmental impacts of the Project.

Doc No.	Monitoring Dates	Facility	Developer	MW / Type (PV or Solar Thermal)	Location	Lead Agency	#Deaths	Species
2H	4/21/2014 - 9/10/2014	Stateline Solar Project	First Solar	300 / PV	San Bernardino County	BLM	13	Rock Pigeon Orange-crowned Warbler Yellow-rumped Warbler Brewer's Blackbird Black-throated Sparrow Orange-crowned Warbler Wilson's Warbler Red-tailed Hawk California Myotis Sora Western Tanager Lesser Nighthawk
1Q	Q4 2013 10/2014 - 12/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	36	
1A	Q1 2014 01/2014 - 03/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	17	Mourning Dove Sora American Kestrel Egret Sp. Indian Peafowl American Coot Red-Tailed Hawk Burrowing Owl (1)
1O	Q2 2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	10	Mourning Dove Sora

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	04/2014 – 06/2014							Lesser Nighthawk Dove Sp. Unknown
1P	Q3 2014 07/2014 – 09/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	30	Mourning Dove Sora Lesser Nighthawk Dove Sp. American Coot Burrowing Owl (1) Eurasian Collared Dove Common Ground Dove Unknown
1RA 1RB 1RC	Q4 2014 10/2014 – 12/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	34	Sora American Kestrel Mourning Dove Dove Sp. Eurasian Collared Dove American Coot White Winged Dove Savannah Sparrow Common Gallinule Rock Dove Unknown
1SA 1SB 1SC	Q1 2015 01/2015 – 03/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	24	Eurasian Collared Dove American Coot Burrowing Owl (2) Horned Lark Icteridae sp. Mourning Dove Cattle Egret Sora Unknown
1TA 1TB 1TC	Q2 2015 04/2015 – 06/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	22	Virginia Rail White-Crowned Sparrow Western Meadowlark Common Gallinule Sora

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								Eurasian Collared Dove American Coot Parulidae Sp. Common Grackle Cliff Swallow Trochilidae Sp. Lesser Nighthawk Pacific Loon Mourning Dove Say's Phoebe Unknown
1UA Missing August 1UC	Q3 2015  07/2015 – 09/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	45+ missing August data	Lesser Nighthawk Horned Lark Mourning Dove Western Grebe Eurasian Collared Dove Mexican Free Tailed Bat Sora Columbidae Sp. Common Gallinule California Towhee
1VA 1VB 1VC	Q4 2015  10/2015 – 12/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	69	Sora Columbidae Sp. Eurasian Collared Dove Common Gallinule White-winged Dove Virginia Rail Ardeidae Sp. American Coot Western Meadowlark Mourning Dove Black Phoebe Say's Phoebe Burrowing Owl (3) Greater Roadrunner Mallard Vesper Sparrow Blue Footed Booby European Starling

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1W A 1W B 1W C	Q1 2016  01/2016 – 03/2016	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	35	Unknown Mourning Dove Sora Dove Sp. Western Meadowlark Black Phoebe Rock Pigeon American Coot Red-Tailed Hawk Emberizidae Sp. Eurasian Collared Dove White-Faced Ibis Savannah Sparrow Surf Scoter Barn Owl Unknown
1J	Quarterly Report  07/2013 – 09/2013	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	6	
1K	Quarterly Report  01/2014 – 03/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	11	
1L	Quarterly Report  04/2014 – 06/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	5	
1M	Quarterly Report  07/2014 – 09/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	8	
1N	Quarterly Report  01/2015 – 03/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	5	
1B	1st Quarterly Post- Constructi on Report	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	53	Short Eared Owl Burrowing Owl Blackbird sp. Savannah Sparrow

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	08/2012 – 11/2012							Western Meadowlark Red Tailed Hawk Mourning Dove Fox Sparrow Common Raven CA Horned Lark Northern Flicker Lincolns Sparrow Long Eared Owl American Crow
1C	2 <sup>nd</sup> Quarterly Post-Constructi on Report  11/2012 – 02/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	144	
1D	3 <sup>rd</sup> Quarterly Post-Constructi on Report  02/2013 – 05/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	84	
1E	4 <sup>th</sup> Quarterly Post-Constructi on Report  05/2013 – 08/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	89	
1F	5 <sup>th</sup> Quarterly Post-Constructi on Report  08/2013 – 11/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	103	
1G	6 <sup>th</sup> Quarterly Post-Constructi on Report	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	152	

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	on Report 11/2013 – 02/2014							
1H	7 <sup>th</sup> Quarterly Post- Constructi on Report  02/2014 – 05/2014	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	54	
1I	8 <sup>th</sup> Quarterly Post- Constructi on Report  05/2014 – 08/2014	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	24	
1X	08/2011 – 12/2011	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	8	Burrowing Owl (1) Western Grebe Eared Grebe American Coot American Avocet Loggerhead Shrike (6) Mourning Dove Common Loon (5) Sora Wilson's Warbler Brown pelican Common raven Double-crested Cormorant Great-Tailed Grackle Ruddy Duck Ash-throated Flycatcher Brown-headed Cowbird Common Poorwill Horned Lark Sagebrush Sparrow Townsend's
1X	Q1 2012  01/2012 – 03/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	3	
1X	Q2 2012  04/2012 – 06/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	3	
1X	Q3 2012  07/2012 – 09/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	10	
1X	Q4 2012  10/2012 – 12/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	10	
1X	Q1 2013  01/2013 – 03/2013	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	3	
1X	Q2 2013  04/2013 – 06/2013	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	20	
1X	Q3 2013	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	25	

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	07/2013 – 09/2013							Warbler
1X	Q4 2013	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	26	Western Tanager
	10/2013 – 12/2013							White Crowned Sparrow
1X	Q1 2014	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	4	Yellow Headed Blackbird
	01/2014 – 03/2014							Black Headed Grosbeak
1X	Q2 2014	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	18	Brewer's Blackbird
	04/2014 – 06/2014							Common Yellowthroat
1X	Q3 2014	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	15	Costa's Hummingbird
	07/2014 – 09/2014							House Finch
1X	Q4 2014	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	10	Lesser Nighthawk
	10/2014 – 12/2014							Pied-Billed Grebe
								Say's Phoebe
								Sparrow Sp.
								Virginia Rail
								Yellow Rumped Warbler
								American Kestrel
								American White Pelican
								Barn Owl
								Black-crowned Night-Heron
								Black-tailed Gnatcatcher
								Blue-winged Teal
								Clapper Rail
								Common Merganser
								Great Egret
								Lesser Scup
								Long-eared Owl
								Mallard
								Northern Mockingbird
								Prairie Falcon
								Red-breasted Merganser
								Redhead
								Red-necked Phalarope
								Red-winged Blackbird
								Savannah Sparrow (1)

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								Surf Scoter Tree Swallow Blackbird Sp. Duck Sp. Empidonax Flycatcher Sp. Hummingbird Sp. Jaeger Sp. Verdin Western Meadowlark White-faced Ibis White-winged Dove Wilson's Snipe Yellow Warbler
2A	1 <sup>st</sup> Quarterly Report  08/2014 – 10/2014	Centinela Solar		170 / PV	Imperial County	Imperial County / Bureau of Land Management	21	
1Y	2 <sup>nd</sup> Quarterly Report  11/2014 – 01/2015	Centinela Solar		170 / PV	Imperial County	Imperial County / Bureau of Land Management	26	
1Z	3 <sup>rd</sup> Quarterly Report  02/2015 – 04/2015	Centinela Solar		170 / PV	Imperial County	Imperial County / Bureau of Land Management	13	
2BA 2BB 2BC	4 <sup>th</sup> Quarterly Report  05/2015 – 07/2015	Centinela Solar		170 / PV	Imperial County	Imperial County / Bureau of Land Management	8	
2CA 2CB	11/2013 - 12/2013	Imperial Solar Energy Center South	Tenaska	130 / PV	Imperial County	Imperial County	5	
2DA 2DB 2DC	01/2014 – 03/2014	Imperial Solar Energy Center	Tenaska	130 / PV	Imperial County	Imperial County	5	

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		South						
2EA 2EB 2EC	07/2015 – 09/2015	Mcoy	NextEra	750 / PV	Riverside County	Bureau of Land Management	29	
2FA 2FB 2FC	10/2015 – 12/2015	Mcoy	NextEra	750 / PV	Riverside County	Bureau of Land Management	91	
2G	01/01/16	Mcoy	NextEra	750 / PV	Riverside County	Bureau of Land Management	0	
2HA 2HB 2HC	07/2015 – 09/2015	Blythe Solar Energy Center	NextEra		Riverside County			

## II. CONCLUSION

Citizens respectfully requests that the Board continue the August 29, 2017 hearing on the Project by at least 30 to 60 days, in order to afford Citizens and other members of the public adequate opportunity to review and consider the FEIR. Citizens also urges the Board to remand the Project to staff to revise and recirculate the FEIR to accurately disclose and mitigate the Project's potentially significant impacts on bird and bat species from collision with solar panels and other Project infrastructure.

Thank you for your consideration of these comments. Please place them in the record of proceedings for the Project.

Sincerely,



Christina M. Caro

CMC:acp

3447-017acp



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# memorandum

date August 28, 2017

to Russell Brady, Riverside County Planning

cc Rupal Patel, RRG

from Cristina Gispert, ESA

subject Responses to August 25, 2017 Adams Broadwell Joseph and Cardozo Letter Concerning Palo Verde Mesa Solar Project

Dear Russell;

ESA has identified the following comments provided in the August 25, 2017 Adams Broadwell Joseph and Cardozo (ABJC) letter concerning the Palo Verde Mesa Solar Project Final EIR. The Draft and Final EIR adequately address the issues identified by the commenter. Please see our responses below.

***ABJC Comment 1: Citizens' DEIR comments included evidence from its biological consultant demonstrating that the Project is likely to have a significant impact on avian and bat species due to collisions with the Project's solar PV panels. Rather than disclose this impact as significant, the FEIR ignores the evidence submitted by Citizens, and instead erroneously concludes that "due to the available scientific knowledge collected at this time, avian mortality due to collision at solar projects is considered low, and impacts would be less than significant in this regard."***

- This comment is addressed at length under Comment Responses A6-6 through A6-9 and O3-66 in the Final EIR.
- The commenter is incorrect that the DEIR considered potential collisions to be less than significant. On page 3.4-44 of the DEIR that states "Direct and indirect impacts to avian species may occur during Project construction, operation, and decommissioning through collisions with Project facilities and equipment including transmission wires, fencing, array structures, and heavy equipment. ... Such collisions can result in injury or mortality, including, in the case of power lines, from electrocution. This is a potentially significant impact of the Project."
- Mitigation Measure BIO-7 is provided to reduce potential bird and bat impacts to less than significant levels. Mitigation Measure BIO-7 requires implementation of a Bird and Bat Conservation Strategy (BBCS). The Draft BBCS contains additional details regarding the Project's approach to avoiding, monitoring, reporting, and mitigating avian and bat mortality. The BBCS also includes specific thresholds, which if surpassed would trigger potential adaptation or additional mitigation measures. The Project's Draft BBCS was developed with consideration and guidance from the data and suggestions presented in relative guidance documents, such as the USFWS Region 8 Interim Guidelines for the

Development of a Project specific Avian and Bat Protection Plan for Solar Energy Plants and Related Transmission Facilities. As noted by Mitigation Measure BIO-7, the BBCS is considered a “living document” and would be based on specific recommendations from the USFWS and CDFW. Thus, the USFWS and CDFW will have opportunity to provide input on the Project’s approach to mitigating potentially significant avian and bat impacts based on ongoing data collection and analyses at the Project and at other projects in the region through the BBCS process. Given the uncertainty that exists regarding potential risks solar projects pose to avian and bat species, the BBCS’s process for monitoring, reporting, and adaptively managing/mitigating impacts is appropriate.

- There is little data to suggest solar projects pose a significant collision risk to bat species. In fact, data presented by the commenter include reference to bat species only twice (number of fatalities associated with each reference not provided). Nevertheless, the Project’s BBCS addresses potential bat impacts and includes a threshold for bat fatalities which if surpassed would trigger adaptation or additional mitigation measures.

**ABJC Comment 2:** *The commenter presents additional avian and bat mortality data from solar projects in California and the western US.*

- The additional data provided by the commenter does not change the Draft EIR’s conclusion that related impacts of the Project would be potentially significant and require implementation of Mitigation Measure BIO-7 to reduce impacts to a level below significance.

Please contact Cristina Gispert at (619) 799-8959 or [cgispert@esassoc.com](mailto:cgispert@esassoc.com) should you have any questions.

Thank you,



Cristina Gispert, Managing Associate  
ESA

**SUBMITTAL TO THE BOARD OF SUPERVISORS COUNTY OF RIVERSIDE,  
STATE OF CALIFORNIA**

power plants states, "[N]o approval required by Ordinance No. 348 shall be given for a solar power plant unless the Board first approves a development agreement with the solar power plant owner and the development agreement is effective." The County has reached an agreement with the applicant on the provisions of the DA. The DA has a term of 30 years and will grant the applicant vesting rights to develop the Project in accordance with the terms of the agreement. DA No. 86 contains terms consistent with Board of Supervisors Policy No. B-29, including terms regarding public benefit payments and increases (Section 4.2 of DA No. 86) and terms requiring the applicant to take actions to ensure allocation directly to the County of the sales and use taxes payable in connection with the construction of the solar power plant, to the maximum extent possible under the law (Section 4.3 of DA No.86). The DA also contains an agreement between the parties with regard to the computation of development impact fees using the surface mining fee category on a Project Area basis as set forth in Section 13 of Ordinance No. 659 (Section 4.4 and Exhibit G of DA No. 86). Approval and use of Conditional Use Permit No. 3684 and Public Use Permit No. 916 are conditioned upon DA No. 86 being entered into and effective. Per state law, a development agreement is a legislative act that must be approved by ordinance. Proposed Ordinance No. 664.59, an Ordinance of the County of Riverside Approving Development Agreement No. 86, incorporates by reference DA No. 86 consistent with Government Code section 65867.5.

The County has reviewed the Project and has determined that it is consistent with all zoning standards, the General Plan, Board of Supervisor's Policy B-29 – Solar Power Plants, and all other applicable ordinances. Additionally, the EIR has been completed in accordance with and consistent with the California Environmental Quality Act (CEQA) requirements.

As an environmental benefit, the Project would help the State achieve its renewable energy goals and mandates. The production of renewable energy has the added benefit of reducing air quality impacts and GHG emissions that would be produced by fossil-fuel based generation facilities. The Project would be developed on contiguous and former agriculture lands to minimize impacts to sensitive species and habitats. The Project is within close proximity to urban development within the City of Blythe, existing transmission infrastructure, and existing access roads.

The Project would also provide other important benefits to the local and regional economy from the purchase of equipment and supplies and sales tax revenue as agreed upon in the terms of Development Agreement No. 86. Additionally, the Project will result in the contribution of significant development impact fees under Ordinance No. 659 which would assure that the Project pays its fair share of capital costs of facilities, as defined in Ordinance No. 659, associated with development of the Project. Indirectly the County and region would benefit from the employment of between 200-500 daily workers during peak construction period and would provide approximately 12 permanent, full-time jobs upon operation. Other economic benefits include workers utilizing local and regional commercial services such as hotels and restaurants.

*Environmental Impact Report*

**SUBMITTAL TO THE BOARD OF SUPERVISORS COUNTY OF RIVERSIDE,  
STATE OF CALIFORNIA**

The public scoping period for this Project commenced on August 8, 2012, with the issuance of the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) and ended on September 7, 2012. During the scoping period a public scoping meeting was conducted in the City of Blythe on August 23, 2012, and the County received input from the public on potential environmental concerns of the Project. Concerns that were expressed included:

- Aesthetics;
- Agricultural resources;
- Air quality;
- Biological resources;
- Cultural resources;
- Hazards and hazardous materials;
- Hydrology and water quality,
- Land use;
- Noise;
- Public services; and
- Traffic and circulation.

In September 2016, the Draft EIR was prepared and distributed for public review and comment. Following receipt of all comments on the Draft EIR, Response to Comments were prepared to address the comments received. The Response to Comments are included in the Final EIR.

The EIR for this Project concluded that there are no impacts that are significant and unavoidable after mitigation. Therefore, the Board of Supervisors will not be required to make a statement of overriding considerations balancing the benefits of the Project against its unavoidable environmental risks.

**Impact on Residents and Businesses**

All potential project impacts have been studied under CEQA and noticed to the public pursuant to the requirements of the County. As stated above, the Project would help the State achieve its renewable energy goals and mandates. The production of renewable energy has the added benefit of reducing air quality impacts and GHG emissions that would be produced by fossil-fuel based generation facilities. The Project would also provide other important benefits to the local and regional economy from the purchase of equipment and supplies and sales tax revenue as agreed upon in the terms of Development Agreement No. 86.

**SUPPLEMENTAL:**

**Additional Fiscal Information**

As stated above, the applicant and County staff have reached an agreement on the provisions of Development Agreement No. 86. Under DA No. 86, the applicant will submit annual public benefit payments of \$150 per acre, increased annually by 2% from and after 2013 (currently



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\$162 per acre in 2017), based on the solar power plant net acre amount of 2,024 acres at full build out. The total "solar power plant net acreage", agreed upon by the applicant, was calculated using the definition in Board of Supervisors' Policy No. B-29. The project is scheduled to be built in phases and the initial annual public benefit payments will be based on the solar power plant net acreage included in each phase until complete build out. DA No. 86 contemplates three phases (Section 3.4 and Exhibit F of DA No. 86). The first phase will include a solar power plant net acreage of approximately 664 acres. The second phase will include a solar power plant net acreage of approximately 967 acres. The third phase will include a solar power plant net acreage of approximately 393 acres. The applicant will also take agreed upon actions to ensure that local sales and use taxes are directly allocated to the County to the maximum extent possible under the law. Additionally, the applicant will submit an agreed upon Development Impact Fee (DIF) payment using the Palo Verde Valley surface mining fee category of \$6,750 per acre on approximately 2,024 acres as set forth in Section 4.4 and Exhibit G of DA No. 86. The timing of the DIF payment will be in accordance with Ordinance No. 659 and any temporary reduction of fees approved by the board of Supervisors in place at the time of payment of the DIF shall be applicable to the project.

Staff labor and expenses to process this project are paid by the applicant; there is no General Fund obligation.

**Contract History and Price Reasonableness**

N/A

**ATTACHMENTS:**

- A. Board of Supervisors Staff Report
- B. Conditional Use Permit No. 3684 Exhibits
- C. Draft Environmental Impact Report
- D. Final Environmental Impact Report
- E. Resolution No. 2017-138
- F. Ordinance No. 664.59
- G. Development Agreement No. 86

  
Gregory L. Priamos, Director County Counsel 8/21/2017

## ADAMS BROADWELL JOSEPH &amp; CARDOZO

A PROFESSIONAL CORPORATION

## ATTORNEYS AT LAW

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TANYA A. GULESSERIAN  
MARC D. JOSEPH  
RACHAEL E. KOSS  
NATALIE B. KUFFEL  
LINDA T. SOBCZYNSKI

August 25, 2017

*Via Email and Overnight Delivery*

Mr. John F. Tavaglione, Chair  
Honorable Members of the Board of  
Supervisors  
Ms. Kecia Harper-Ihem, Clerk of the Board  
Riverside County  
County Administrative Center  
4080 Lemon Street - 5th Floor  
Riverside, California 92501  
Email: [cob@rcbos.org](mailto:cob@rcbos.org); [district1@rcbos.org](mailto:district1@rcbos.org);  
[district2@rcbos.org](mailto:district2@rcbos.org); [district3@rcbos.org](mailto:district3@rcbos.org);  
[district4@rcbos.org](mailto:district4@rcbos.org); [district5@rcbos.org](mailto:district5@rcbos.org)

Mr. Russell Brady, Planner  
Mr. Larry Ross, Principal Planner  
Mr. Steve Weiss, Planning Director  
Riverside County Planning Department  
4080 Lemon Street, 12th Floor  
P.O. Box 1409  
Riverside, CA 92502-1409  
Email: [rbrady@rcplma.org](mailto:rbrady@rcplma.org)

**Re: Action Item 4992 / Public Hearing Item – CUP03684, PUP00916,  
DA00086, EIR00532: Palo Verde Mesa Solar Project (CUP No.  
3684 and PUP No. 916) / Final Environmental Impact Report**

Dear Chair Tavaglione, Honorable Members of the Board of Supervisors, Ms. Harper-Ihem, Mr. Brady, Mr. Ross and Mr. Weiss:

On behalf of Citizens for Responsible Solar ("Citizens"), we submit these preliminary comments on Action Item 4992 and the Final Environmental Impact Report ("FEIR") for the Palo Verde Mesa Solar Project ("Project"). These comments address the FEIR's response to Citizen's comments regarding the Project's potentially significant impacts on avian and bat species due to collisions with the Project's solar photovoltaic ("PV") panels and other Project structures. Citizens expressly reserves the right to supplement these comments at the Board hearing, and at any later hearings and proceedings related to this Project.<sup>1</sup>

<sup>1</sup> Citizens submitted comments on the Draft Environmental Impact Report ("DEIR") for the Project November 28, 2016, and supplemental comments on February 16, 2017. Those comments are incorporated by reference. Citizens reserves the right to supplement these comments at later hearings and proceedings on this Project. Gov. Code § 65009(b); PRC § 21177(a); *Bakersfield* 3447-017acp

Citizens also requests that the Board of Supervisors continue the August 29, 2017 hearing on the Project by at least 30 to 60 days in order to give the public adequate time to review and respond to the massive amount of new information contained in the FEIR. The FEIR was released on August 17, 2017, less than 10 days ago, and contains over 1000 pages of new evidence and information that was not contained in the DEIR. Citizens and its technical consultants are still in the process of reviewing the FEIR. A continued hearing is necessary in order to ensure a meaningful opportunity for public review of the FEIR and public comment at the Board hearing, in order to give the Board the opportunity to consider the public's comments *before* the County makes any final decisions regarding the Project.

Citizens for Responsible Solar is an unincorporated association of individuals and labor organizations that may be adversely affected by the potential health, safety, public service, and environmental impacts of the Project. The association includes Blythe resident George Ellis, Riverside County resident James Hennegan, and California Unions for Reliable Energy ("CURE") and its members and families and other individuals that live and/or work in east Riverside County. Citizens was formed to advocate for responsible and sustainable solar development in and around Riverside County, in order to protect public health and safety and the environment where Citizens' members and their families live, work, and recreate. Citizens has a direct interest in ensuring that the environmental impacts of the Project are fully disclosed to the public and mitigated to the extent feasible, and in ensuring that the County and the Applicant comply with all applicable local, State, and Federal laws in their consideration of this Project.

These comments, and the enclosed resource agency data documenting avian and bat collisions at solar PV projects, constitute substantial evidence demonstrating that the Project will have significant impacts on avian and bat species that the FEIR failed to adequately disclose and mitigate. Citizens urges the Board to fully consider the these comments and evidence prior to conducting any further hearings on the Project.

**I. THERE IS SUBSTANTIAL EVIDENCE DEMONSTRATING THAT THAT THE PROJECT MAY HAVE POTENTIALLY SIGNIFICANT IMPACTS ON BIRD AND BAT SPECIES FROM COLLISIONS WITH**

---

*Citizens for Local Control v. Bakersfield* (2004) 124 Cal. App. 4th 1184, 1199-1203; *see Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.  
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RECEIVED RIVERSIDE COUNTY  
CLERK / OFFICE OF SUPERVISORS

## **SOLAR PANELS THAT THE FEIR FAILS TO DISCLOSE AND MITIGATE**

Citizens' DEIR comments included evidence from its biological consultant demonstrating that the Project is likely to have a significant impact on avian and bat species due to collisions with the Project's solar PV panels. Rather than disclose this impact as significant, the FEIR ignores the evidence submitted by Citizens, and instead erroneously concludes that "due to the available scientific knowledge collected at this time, avian mortality due to collision at solar projects is considered low, and impacts would be less than significant in this regard."<sup>2</sup> The FEIR cites to data from a single project, Desert Sunlight, in support of this conclusion.<sup>3</sup> In contrast to the conclusion stated in the FEIR, a review of the Desert Sunlight Project, and numerous other solar PV projects in California and the Western States, demonstrates that solar PV projects have documented hundreds of bird deaths from collisions with solar panels and other project structures at industrial solar sites just like the Project.

In an effort to further document the significance of this impact, and to provide the County with further empirical evidence and expert testimony documenting recent avian collisions at solar PV facilities in California, Citizens has obtained monitoring studies, statistics, and reports of avian collisions directly from CDFW and USFWS, the two wildlife agencies with regulatory oversight over the Project's impacts on avian species.

Citizens hereby submits those studies to the County with this letter. The studies, which are attached hereto as Exhibit A (CDFW Records) and Exhibit B (USFWS Records). The CDFW Records and USFWS Records include avian mortality monitoring reports from numerous solar projects within the California desert regions and the Western states. These studies, and the evidence previously submitted to the County by Citizens and its biological resources expert, constitute substantial evidence demonstrating that the Project may have potentially significant impacts from avian and bat collisions that require mitigation under CEQA.

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<sup>2</sup> RTC O3-66, FEIR p. 2-221.

<sup>3</sup> *Id.*

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The below table is a *partial* summary of the mortalities documented in the CDFW and USFWS Records. This summary clarifies that solar projects in California have been responsible for hundreds of bird deaths in the past 5 years from direct collisions with solar panels and other Project structures, including 155 bird deaths from collisions at the Desert Sunlight Project between 2011 and 2014 alone.

The County's failure to acknowledge and disclose this potentially significant impact is a blatant violation of the County's duty to analyze and mitigate the potentially significant environmental impacts of the Project.

Doc No.	Monitoring Dates	Facility	Developer	MW / Type (PV or Solar Thermal)	Location	Lead Agency	Deaths	Species
2H	4/21/2014 - 9/10/2014	Stateline Solar Project	First Solar	300 / PV	San Bernardino County	BLM	13	Rock Pigeon Orange-crowned Warbler Yellow-rumped Warbler Brewer's Blackbird Black-throated Sparrow Orange-crowned Warbler Wilson's Warbler Red-tailed Hawk California Myotis Sora Western Tanager Lesser Nighthawk
1Q	Q4 2013 10/2014 - 12/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	36	
1A	Q1 2014 01/2014 - 03/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	17	Mourning Dove Sora American Kestrel Egret Sp. Indian Peafowl American Coot Red-Tailed Hawk Burrowing Owl (1)
1O	Q2 2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	10	Mourning Dove Sora

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	04/2014 – 06/2014							Lesser Nighthawk Dove Sp. Unknown
1P	Q3 2014  07/2014 – 09/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	30	Mourning Dove Sora Lesser Nighthawk Dove Sp. American Coot Burrowing Owl (1) Eurasian Collared Dove Common Ground Dove Unknown
1RA 1RB 1RC	Q4 2014  10/2014 – 12/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	34	Sora American Kestrel Mourning Dove Dove Sp. Eurasian Collared Dove American Coot White Winged Dove Savannah Sparrow Common Gallinule Rock Dove Unknown
1SA 1SB 1SC	Q1 2015  01/2015 – 03/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	24	Eurasian Collared Dove American Coot Burrowing Owl (2) Horned Lark Icteridae sp. Mourning Dove Cattle Egret Sora Unknown
1TA 1TB 1TC	Q2 2015  04/2015 – 06/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	22	Virginia Rail White-Crowned Sparrow Western Meadowlark Common Gallinule Sora

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								Eurasian Collared Dove American Coot Parulidae Sp. Common Grackle Cliff Swallow Trochilidae Sp. Lesser Nighthawk Pacific Loon Mourning Dove Say's Phoebe Unknown
1UA Missing August 1UC	Q3 2015  07/2015 – 09/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	45+ missing August data	Lesser Nighthawk Horned Lark Mourning Dove Western Grebe Eurasian Collared Dove Mexican Free Tailed Bat Sora Columbidae Sp. Common Gallinule California Towhee
1VA 1VB 1VC	Q4 2015  10/2015 – 12/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	69	Sora Columbidae Sp. Eurasian Collared Dove Common Gallinule White-winged Dove Virginia Rail Ardeidae Sp. American Coot Western Meadowlark Mourning Dove Black Phoebe Say's Phoebe Burrowing Owl (3) Greater Roadrunner Mallard Vesper Sparrow Blue Footed Booby European Starling

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								Unknown
1W A 1W B 1W C	Q1 2016  01/2016 – 03/2016	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	35	Mourning Dove Sora Dove Sp. Western Meadowlark Black Phoebe Rock Pigeon American Coot Red-Tailed Hawk Emberizidae Sp. Eurasian Collared Dove White-Faced Ibis Savannah Sparrow Surf Scoter Barn Owl Unknown
1J	Quarterly Report  07/2013 – 09/2013	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	6	
1K	Quarterly Report  01/2014 – 03/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	11	
1L	Quarterly Report  04/2014 – 06/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	5	
1M	Quarterly Report  07/2014 – 09/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	8	
1N	Quarterly Report  01/2015 – 03/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	5	
1B	1st Quarterly Post- Constructi on Report	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	53	Short Eared Owl Burrowing Owl Blackbird sp. Savannah Sparrow



	08/2012 – 11/2012							Western Meadowlark Red Tailed Hawk Mourning Dove Fox Sparrow Common Raven CA Horned Lark Northern Flicker Lincolns Sparrow Long Eared Owl American Crow
1C	2 <sup>nd</sup> Quarterly Post- Constructi on Report  11/2012 – 02/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	144	
1D	3 <sup>rd</sup> Quarterly Post- Constructi on Report  02/2013 – 05/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	84	
1E	4 <sup>th</sup> Quarterly Post- Constructi on Report  05/2013 – 08/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	89	
1F	5 <sup>th</sup> Quarterly Post- Constructi on Report  08/2013 – 11/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	103	
1G	6 <sup>th</sup> Quarterly Post- Constructi	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	152	

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	on Report							
	11/2013 – 02/2014							
1H	7 <sup>th</sup> Quarterly Post- Constructi on Report  02/2014 – 05/2014	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	54	
1I	8 <sup>th</sup> Quarterly Post- Constructi on Report  05/2014 – 08/2014	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	24	
1X	08/2011 – 12/2011	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	8	Burrowing Owl (1) Western Grebe Eared Grebe American Coot American Avocet Loggerhead Shrike (6) Mourning Dove Common Loon (5) Sora Wilson's Warbler Brown pelican Common raven Double-crested Cormorant Great-Tailed Grackle Ruddy Duck Ash-throated Flycatcher Brown-headed Cowbird Common Poorwill Horned Lark Sagebrush Sparrow Townsend's
1X	Q1 2012  01/2012 – 03/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	3	
1X	Q2 2012  04/2012 – 06/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	3	
1X	Q3 2012  07/2012 – 09/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	10	
1X	Q4 2012  10/2012 – 12/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	10	
1X	Q1 2013  01/2013 – 03/2013	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	3	
1X	Q2 2013  04/2013 – 06/2013	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	20	
1X	Q3 2013	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	25	

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	07/2013 – 09/2013							Warbler
1X	Q4 2013	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	26	Western Tanager
	10/2013 – 12/2013							White Crowned Sparrow
1X	Q1 2014	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	4	Yellow Headed Blackbird
	01/2014 – 03/2014							Black Headed Grosbeak
1X	Q2 2014	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	18	Brewer's Blackbird
	04/2014 – 06/2014							Common Yellowthroat
1X	Q3 2014	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	15	Costa's Hummingbird
	07/2014 – 09/2014							House Finch
1X	Q4 2014	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	10	Lesser Nighthawk
	10/2014 – 12/2014							Pied-Billed Grebe
								Say's Phoebe
								Sparrow Sp.
								Virginia Rail
								Yellow Rumped Warbler
								American Kestrel
								American White Pelican
								Barn Owl
								Black-crowned Night-Heron
								Black-tailed Gnatcatcher
								Blue-winged Teal
								Clapper Rail
								Common Merganser
								Great Egret
								Lesser Scup
								Long-eared Owl
								Mallard
								Northern Mockingbird
								Prairie Falcon
								Red-breasted Merganser
								Redhead
								Red-necked Phalarope
								Red-winged Blackbird
								Savannah Sparrow (1)

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								Surf Scoter Tree Swallow Blackbird Sp. Duck Sp. Empidonax Flycatcher Sp. Hummingbird Sp. Jaeger Sp. Verdin Western Meadowlark White-faced Ibis White-winged Dove Wilson's Snipe Yellow Warbler
2A	1 <sup>st</sup> Quarterly Report  08/2014 – 10/2014	Centinela Solar		170 / PV	Imperial County	Imperial County / Bureau of Land Management	21	
1Y	2 <sup>nd</sup> Quarterly Report  11/2014 – 01/2015	Centinela Solar		170 / PV	Imperial County	Imperial County / Bureau of Land Management	26	
1Z	3 <sup>rd</sup> Quarterly Report  02/2015 – 04/2015	Centinela Solar		170 / PV	Imperial County	Imperial County / Bureau of Land Management	13	
2BA 2BB 2BC	4 <sup>th</sup> Quarterly Report  05/2015 – 07/2015	Centinela Solar		170 / PV	Imperial County	Imperial County / Bureau of Land Management	8	
2CA 2CB	11/2013 - 12/2013	Imperial Solar Energy Center South	Tenaska	130 / PV	Imperial County	Imperial County	5	
2DA 2DB 2DC	01/2014 – 03/2014	Imperial Solar Energy Center	Tenaska	130 / PV	Imperial County	Imperial County	5	

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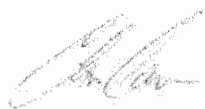
		South						
2EA 2EB 2EC	07/2015 – 09/2015	Mcoy	NextEra	750 / PV	Riverside County	Bureau of Land Management	29	
2FA 2FB 2FC	10/2015 – 12/2015	Mcoy	NextEra	750 / PV	Riverside County	Bureau of Land Management	91	
2G	01/01/16	Mcoy	NextEra	750 / PV	Riverside County	Bureau of Land Management	0	
2HA 2HB 2HC	07/2015 – 09/2015	Blythe Solar Energy Center	NextEra		Riverside County			

## II. CONCLUSION

Citizens respectfully requests that the Board continue the August 29, 2017 hearing on the Project by at least 30 to 60 days, in order to afford Citizens and other members of the public adequate opportunity to review and consider the FEIR. Citizens also urges the Board to remand the Project to staff to revise and recirculate the FEIR to accurately disclose and mitigate the Project's potentially significant impacts on bird and bat species from collision with solar panels and other Project infrastructure.

Thank you for your consideration of these comments. Please place them in the record of proceedings for the Project.

Sincerely,



Christina M. Caro

CMC:acp

County Solar August 2017

Albia miller @ Aug 28, 2017

Solar Thermal Collection belongs on the roofs of buildings already established not on fragile deserts distributing electricity by High Transmission Lines and tension wires winding their way out of the desert emitting Electromagnetic photon waves a combination of electrical and magnetic oscillations into the Environment with their electric spin of quantum properties. This bombardment is adding to the background radiation and compounding into electromagnetic interactions and require stepping down transformer stations.

With car port and roof mounted on site panels, transformers that use 100s of thousands of hazardous waste mineral spirits oil or polynuclear aromatics do not need to be constructed. If a strong wind or natural disaster hits a transformer these toxic and flammable chemicals can volatilize and ignite which is of notable concern by environmentalists and EPA.

Megawatt Photovoltaic Solar stations in the California desert are aiming highly concentrated receiving parabolic dishes at the upper atmosphere gathering radiation from the sun and emitting lower ozone heat accumulating in the Jet Stream. This path eventually finds its way thru prevailing winds to heat up desert rivers like the Colorado River, and then, to the oceans. If the solar is on the roofs and flat panels it doesn't drop emfs and is black so it is absorbed not parabolic mirrors throwing heat back into the sky.

We are constantly exposed to emfs ELECTRIC FLUX DENSITY from cell phones to microwaves and current transmission lines so enough is enough. We should not be adding any more exposure avenues such as Solar panels in the desert.

The maintenance of the solar stations also causes repair vehicles creating traffic and some of the vehicles are gas powered diminishing the clean embodied energy: How much was taken from the Earth as compared too how much was generated is the net gain .

Then, we must consider that the warming of rivers and oceans in the West with so many Solar arrays permitted by San Bernardino and Riverside COUNTY THAT THIS COULD BE AFFECTING THE WEATHER. For many years temperatures have risen in the WEST because California and its transportation issues. If prevailing winds come from the West and rise when they hit the freeway system from San Diego to Los Angeles, then, the low pressure which may have rained for California now, is pushed high up into the atmosphere and catches the Jet Stream and collects over Mid AMERICA STATES. This is creating intense storms in Colorado, tornadoes in Kansas and Oklahoma and F4 Force 4 and 5 hurricanes from the Gulf of Mexico because the Gulf is warmer than ever and rises heat from its waters and this front rises to hit the prevailing Western Jet stream coming from California and the wrath of Jehovah pours onto the land from powerful storms.

A. This particular project will encompass 50 parcels at 3,500 acres of desert near Arizona Border and City of Blyth 20,000 people. It will visually impact the desert scenery and sunsets with major infrastructure scattered over the desert floor. Located within the Brawley Earth Quake Zone Construction will alter the washes and moving sand so that normal drainage will be rerouted and will create sedimentation, erosion and generally tear up the lay of the lay and require geomats to retain

4992  
8/29/17 17.5

structure of layers of the streams beds. THE CONCRETE CULVERTS FOR DRAINAGE WILL DISTURB THE VEGETATION and THE EPHERMAL STREAM BANKS IN THE FLOODPLAIN.

B. This project will impact habitat for Mojave fringe toad lizards, Burrowing Owls, kit fox

C. The Creosote Bush and Desert Riparian Woodland Wash will be disastrously affected. The Creosote is a marketable and valuable plant and would be a much better agricultural venue and the habitat should be protected not run over with a solar array at 3,500 acres. The Creosote is a proper red food coloring.

C. Placing convenient power for homes will entice development next to the Colorado River and Palo Verde declared part of project an agricultural area and therefore harvesting the sun is not an agricultural venue so it is in conflict with Palo Verde General Plan.

D. So rather than park more megawatts on the Coachella lizard and the Desert Tortoise, let's Leave a less damaging footprint thru destruction of the desert and the repair trucks we can mount solar panels on the roofs of buildings and carports.

E. We need to balance: Total power absorbed = Total power emitted

Its too heavy of an emf footprint to build Solar Infrastructure in the Desert so that there will be power for new development in Palo Verde and BYTHE in massive quantities AND we should remain UP On the Roof not SRAWLING OVER THE Dessert.

In order to leave a less damaging footprint thru destruction of the desert and the repair trucks we can mount solar panels on the roofs of buildings and carports.

Total power absorbed

Power per unit area \* Area of planet facing Sun

Fraction of sunlight absorbed by planet's surface 1,368 W/m<sup>2</sup>

$p \times (R_{\text{Earth}})^2 \times (1 - \text{albedo})$

[Note: we use the "Earth as a disk" assumption mentioned earlier to calculate the "area of planet facing Sun".] Total power emitted

Power emitted per unit area x

Total surface area of planet  $s \times T^4 \times 4p \times (R_{\text{Earth}})^2$

Where s is the Stefan-Boltzmann constant, with a value of

$5.7 \times 10^{-8} \text{ watt} / (\text{m}^2 \times \text{K}^4)$

[https://www.windows2universe.org/earth/climate/sun\\_radiation\\_at\\_earth.html](https://www.windows2universe.org/earth/climate/sun_radiation_at_earth.html)

{ It is in conflict with Riverside County Agricultural Preserve which means making energy from wasteful night lighting for decoration or signs or Holidays is more important than retaining this land for agricultural. Not buying that. Cut the lights, cut the Heat raise the potential of feeding California and not importing food.



**The Reeder Family Trust  
44-346 Royal Lytham  
Indio, CA 92201**

Clerk of the Board  
4080 Lemon Street, 1<sup>st</sup> Floor  
P.O. Box 1147  
Riverside, CA 92502-1147

RE: CUP 3684  
3,250-acre solar power plant development  
Proposed by Renewable Resources Group

The Notice of this Public Hearing stated that the Planning Commission found that the environmental effects have been addressed and recommended certification of the EIR. In the EIR process, it was openly stated that the social and economic impacts were not addressed. As representatives of the residents of Riverside County, it is for you to weigh the social and economic impacts of this project.

We all know that the development of alternative energy sources has been very extensive and that more will be developed. However, this proposed project is immediately adjacent to the Blythe community and will be detrimental to all adjacent land, homes, the tourist interests in Blythe, and any future development. It is ½ mile from the college, and the college, which was nicely positioned on the edge of the mesa to afford it views, will be looking at solar panels if this is approved. This project is also near the Blythe Golf Course and in close proximity to some of the nicest housing in the area.

Future residential development would likely take place in this area due to the presence of the college, golf course, infrastructure, and the fact that new large development will likely not take place in the valley because of the MWD water deal with the valley property owners. This proposed solar development is in the path of this development and is incompatible with residential uses.

Now that there are completed solar projects in the county, we now know that even with mitigation measures in place, these projects do create dust, night lights, and during construction, there is noise and construction traffic. And we have found that the one benefit the prior projects claimed, didn't happen. There were very few long-term jobs created and most employees were not local.

Because of the emphasis for renewable energy development, a Desert Renewable Energy Conservation Plan has been approved by the governmental agencies with jurisdiction and shareholders. Solar Energy Zones (SEZ) have been identified for the least impactful development of solar projects. The largest SEZ area is north and west of Blythe. Solar development should take place in these zones and not adjacent to and to the detriment of the Blythe community. Just because the subject property owners want to build this on their land does not make it the right use for that land nor for the area.

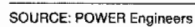
This project offers fees to the County that may be of temptation. However, this is short sighted, and again to the detriment of the Blythe area.

I urge you to vote against this project.

Truly yours,

  
Sally Reeder Peterson  
Trustee

4992  
8/29/17 12.5  
2017-9-13 730



Palo Verde Mesa Solar Project . 150379

**Figure 2-6**  
Site Plan

Sally Peterson  
P.O. Box 5036  
Newport Beach, CA 92662

Keeia Harper-Ihem  
Clerk of the Board  
Riverside County  
P.O. Box 1147  
Riverside, CA 92502-1147

Re: Conditional Use Permit No. 3684  
Solar Power Plant  
Blythe, CA

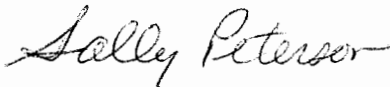
Access to 821-200-005

I, personally, feel strongly that this is not the right place for the development of a large solar facility as it is too close to Blythe. There are other far better locations for such a use.

Thus, please vote against this proposal.

That being said, if the plan is approved as proposed, numerous property owners will lose access as this project proposes to close Stephenson Blvd., Oden Way and 8<sup>th</sup> Avenue, amongst others. This includes the southern half of my parcel, 821-200-005. Other solar projects that have been developed in the area have been required to provide roadways around their entire project to provide access to adjacent property owners. The proposal provides access through their project on Buck Boulevard. That does not provide access to those of us east of that road. I would propose that Stephenson and Oden be left open to the public and maintained by the applicant. If they feel that leaving Stephenson open beyond Oden Way is not an alternative, they should be required to leave Oden Way open and Stephenson open to the public from Hobson Way to Oden Way and to improve and maintain a road from Buck to the east and south to the NWC of Section 15 with access along the Stephenson Rd. extension to Section 10. (See Site Plan)

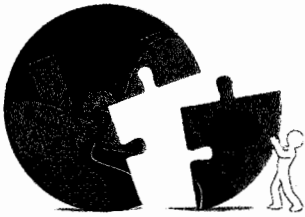
Very truly yours,



Sally Peterson

4992  
8/29/17 17.5





*Charissa Leach, P.E.*  
*Assistant TLMA Director*

# RIVERSIDE COUNTY **PLANNING DEPARTMENT**

## Memorandum

Date: August 29, 2017

To: Board of Supervisors

From: Russell Brady, Contract Planner

**RE: Agenda Item 17.5 – CUP03684, PUP00916, DA00086**

Attached is one additional letter in favor of the project as well as one letter opposing the project. A memo is also included that responds to the comments included in the letter opposing the project.

The below condition is also recommended to clarify the effective status of the Conditional Use Permit contingent on the effective status of and compliance with the related Development Agreement.

### 10. EVERY.006 Use – Development Agreement

The use approved under Conditional Use Permit No. 3684 shall not be effective until Development Agreement No. 86 is effective. All use of Conditional Use Permit No. 3684 shall be done in strict compliance with the provisions of Development Agreement No. 86 and these conditions of approval.

\\agency\AgencyDFS\Plan\FILES\Planning Case Files-Riverside office\CUP03684\DH-PC-BOS Hearings\BOS\Memo to BOS.docx

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(951) 955-3200 • Fax (951) 955-1811

Desert Office • 77-588 El Duna Court, Suite H  
Palm Desert, California 92211  
(760) 863-8277 • Fax (760) 863-7040

**Audubon California**  
**Defenders of Wildlife**  
**Sierra Club**  
**The Wilderness Society**

August 25, 2017

Kecia Harper-Ihem  
Clerk of the Board of Supervisors  
4080 Lemon Street, 1st Floor  
Riverside CA 92501  
Sent via email: [cob@rivco.org](mailto:cob@rivco.org)

Re: Palo Verde Mesa Solar Project (Case No: CUP03684)

Dear Ms. Harper-Ihem;

Audubon California, Defenders of Wildlife, Sierra Club and The Wilderness Society are writing to express our full support of the Palo Verde Mesa Solar project located on private lands near the community of Blythe, California. Please distribute our letter to each Supervisor in preparation for their scheduled meeting on August 29, 2017 at which they will consider approval of Conditional Use Permit 03684 for the project.

We are national environmental organizations comprised of several million members and supporters in the U.S., many of who reside in California. For many years, our organizations have been deeply engaged in efforts to protect the unique wildlife, plants and wildlands of the California desert. Our organizations also strongly support responsibly sited, developed, operated and effectively mitigated renewable energy projects to meet the challenge of climate change by reducing greenhouse gas emissions. Our support of the Palo Verde Mesa Solar Project is based on its location on previously disturbed lands without significant biological resources and which will generate a significant amount of electrical power (approximately 485 MW) while avoiding impacts on wildlands and other high-quality habitat for the unique and precious plants and animals of the California desert.

We have read the staff report on the project dated August 18, 2017, and fully endorse all the recommended conditions for the project, especially those which will result in avoiding, minimizing and compensatory mitigation for adverse impacts on natural drainages and special status species which may be present on site, such as the Mojave fringe-toed lizard, desert tortoise, burrowing owl, American badger, desert kit fox, and migratory birds. In addition, we are pleased that the recommended conditions include the development and implementation of a Bird and Bat Conservation Strategy in coordination with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service. We thank the staff who prepared the report for their thorough and detailed analysis and comprehensive recommendations for conditions to be included in a permit for the project.

In addition to our strong support for the project, we recommend that the Board of Supervisors certify the Environmental Impact Report is in full compliance with the California Environmental Quality Act.

This concludes our comments in support of the Palo Verde Mesa Solar Project. Please contact any of our organizations representatives if you have questions or would like additional information.

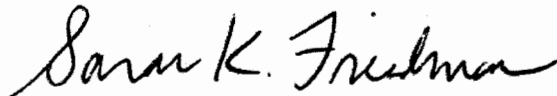
Sincerely,



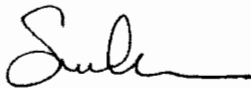
Garry George  
Renewable Energy Director  
Audubon California  
[ggeorge@audubon.org](mailto:ggeorge@audubon.org)



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Defenders of Wildlife  
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Sarah Friedman  
Senior Campaign Representative  
Beyond Coal Campaign  
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Sheara Cohen  
California Desert Public Lands Representative  
The Wilderness Society  
[sheara\\_cohen@twc.org](mailto:sheara_cohen@twc.org)

cc: Honorable V. Manuel Perez, Fourth District Supervisor: [district4@rivco.org](mailto:district4@rivco.org)

Steven Hernandez, Chief of Staff, Supervisor V. Manuel Perez: [sahernan@rivco.org](mailto:sahernan@rivco.org)

Russell Brady, Principal Planner, Riverside County Planning Department:  
[rbrady@rctlma.org](mailto:rbrady@rctlma.org)



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TANYA A. GULESSERIAN  
MARC D. JOSEPH  
RACHAEL E. KOSS  
NATALIE B. KUFFEL  
LINDA T. SOBCZYNSKI

August 25, 2017

*Via Email and Overnight Delivery*

Mr. John F. Tavaglione, Chair  
Honorable Members of the Board of  
Supervisors  
Ms. Kecia Harper-Ihem, Clerk of the Board  
Riverside County  
County Administrative Center  
4080 Lemon Street - 5th Floor  
Riverside, California 92501  
Email: [cob@rcbos.org](mailto:cob@rcbos.org); [district1@rcbos.org](mailto:district1@rcbos.org);  
[district2@rcbos.org](mailto:district2@rcbos.org); [district3@rcbos.org](mailto:district3@rcbos.org);  
[district4@rcbos.org](mailto:district4@rcbos.org); [district5@rcbos.org](mailto:district5@rcbos.org)

Mr. Russell Brady, Planner  
Mr. Larry Ross, Principal Planner  
Mr. Steve Weiss, Planning Director  
Riverside County Planning Department  
4080 Lemon Street, 12th Floor  
P.O. Box 1409  
Riverside, CA 92502-1409  
Email: [rbrady@rctlma.org](mailto:rbrady@rctlma.org)

Re: **Action Item 4992 / Public Hearing Item – CUP03684, PUP00916,  
DA00086, EIR00532: Palo Verde Mesa Solar Project (CUP No.  
3684 and PUP No. 916) / Final Environmental Impact Report**

Dear Chair Tavaglione, Honorable Members of the Board of Supervisors, Ms.  
Harper-Ihem, Mr. Brady, Mr. Ross and Mr. Weiss:

On behalf of Citizens for Responsible Solar ("Citizens"), we submit these preliminary comments on Action Item 4992 and the Final Environmental Impact Report ("FEIR") for the Palo Verde Mesa Solar Project ("Project"). These comments address the FEIR's response to Citizen's comments regarding the Project's potentially significant impacts on avian and bat species due to collisions with the Project's solar photovoltaic ("PV") panels and other Project structures. Citizens expressly reserves the right to supplement these comments at the Board hearing, and at any later hearings and proceedings related to this Project.<sup>1</sup>

<sup>1</sup> Citizens submitted comments on the Draft Environmental Impact Report ("DEIR") for the Project November 28, 2016, and supplemental comments on February 16, 2017. Those comments are incorporated by reference. Citizens reserves the right to supplement these comments at later hearings and proceedings on this Project. Gov. Code § 65009(b); PRC § 21177(a); *Bakersfield* 3447-017acp

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Citizens also requests that the Board of Supervisors continue the August 29, 2017 hearing on the Project by at least 30 to 60 days in order to give the public adequate time to review and respond to the massive amount of new information contained in the FEIR. The FEIR was released on August 17, 2017, less than 10 days ago, and contains over 1000 pages of new evidence and information that was not contained in the DEIR. Citizens and its technical consultants are still in the process of reviewing the FEIR. A continued hearing is necessary in order to ensure a meaningful opportunity for public review of the FEIR and public comment at the Board hearing, in order to give the Board the opportunity to consider the public's comments *before* the County makes any final decisions regarding the Project.

Citizens for Responsible Solar is an unincorporated association of individuals and labor organizations that may be adversely affected by the potential health, safety, public service, and environmental impacts of the Project. The association includes Blythe resident George Ellis, Riverside County resident James Hennegan, and California Unions for Reliable Energy ("CURE") and its members and families and other individuals that live and/or work in east Riverside County. Citizens was formed to advocate for responsible and sustainable solar development in and around Riverside County, in order to protect public health and safety and the environment where Citizens' members and their families live, work, and recreate. Citizens has a direct interest in ensuring that the environmental impacts of the Project are fully disclosed to the public and mitigated to the extent feasible, and in ensuring that the County and the Applicant comply with all applicable local, State, and Federal laws in their consideration of this Project.

These comments, and the enclosed resource agency data documenting avian and bat collisions at solar PV projects, constitute substantial evidence demonstrating that the Project will have significant impacts on avian and bat species that the FEIR failed to adequately disclose and mitigate. Citizens urges the Board to fully consider the these comments and evidence prior to conducting any further hearings on the Project.

**I. THERE IS SUBSTANTIAL EVIDENCE DEMONSTRATING THAT THAT THE PROJECT MAY HAVE POTENTIALLY SIGNIFICANT IMPACTS ON BIRD AND BAT SPECIES FROM COLLISIONS WITH**

---

*Citizens for Local Control v. Bakersfield* (2004) 124 Cal. App. 4th 1184, 1199-1203; see *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.  
3447-017acp

## **SOLAR PANELS THAT THE FEIR FAILS TO DISCLOSE AND MITIGATE**

Citizens' DEIR comments included evidence from its biological consultant demonstrating that the Project is likely to have a significant impact on avian and bat species due to collisions with the Project's solar PV panels. Rather than disclose this impact as significant, the FEIR ignores the evidence submitted by Citizens, and instead erroneously concludes that "due to the available scientific knowledge collected at this time, avian mortality due to collision at solar projects is considered low, and impacts would be less than significant in this regard."<sup>2</sup> The FEIR cites to data from a single project, Desert Sunlight, in support of this conclusion.<sup>3</sup> In contrast to the conclusion stated in the FEIR, a review of the Desert Sunlight Project, and numerous other solar PV projects in California and the Western States, demonstrates that solar PV projects have documented hundreds of bird deaths from collisions with solar panels and other project structures at industrial solar sites just like the Project.

In an effort to further document the significance of this impact, and to provide the County with further empirical evidence and expert testimony documenting recent avian collisions at solar PV facilities in California, Citizens has obtained monitoring studies, statistics, and reports of avian collisions directly from CDFW and USFWS, the two wildlife agencies with regulatory oversight over the Project's impacts on avian species.

Citizens hereby submits those studies to the County with this letter. The studies, which are attached hereto as Exhibit A (CDFW Records) and Exhibit B (USFWS Records). The CDFW Records and USFWS Records include avian mortality monitoring reports from numerous solar projects within the California desert regions and the Western states. These studies, and the evidence previously submitted to the County by Citizens and its biological resources expert, constitute substantial evidence demonstrating that the Project may have potentially significant impacts from avian and bat collisions that require mitigation under CEQA.

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<sup>2</sup> RTC 03-66, FEIR p. 2-221.

<sup>3</sup> *Id.*

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The below table is a *partial* summary of the mortalities documented in the CDFW and USFWS Records. This summary clarifies that solar projects in California have been responsible for hundreds of bird deaths in the past 5 years from direct collisions with solar panels and other Project structures, including 155 bird deaths from collisions at the Desert Sunlight Project between 2011 and 2014 alone.

The County's failure to acknowledge and disclose this potentially significant impact is a blatant violation of the County's duty to analyze and mitigate the potentially significant environmental impacts of the Project.

Doc No.	Monitoring Dates	Facility	Developer	MW / Type (PV or Solar thermal)	Location	Lead Agency	#Deaths	Species
2H	4/21/2014 - 9/10/2014	Stateline Solar Project	First Solar	300 / PV	San Bernardino County	BLM	13	Rock Pigeon Orange-crowned Warbler Yellow-rumped Warbler Brewer's Blackbird Black-throated Sparrow Orange-crowned Warbler Wilson's Warbler Red-tailed Hawk California Myotis Sora Western Tanager Lesser Nighthawk
1Q	Q4 2013 10/2014 - 12/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	36	
1A	Q1 2014 01/2014 - 03/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	17	Mourning Dove Sora American Kestrel Egret Sp. Indian Peafowl American Coot Red-Tailed Hawk Burrowing Owl (1)
1O	Q2 2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	10	Mourning Dove Sora

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	04/2014 – 06/2014							Lesser Nighthawk Dove Sp. Unknown
1P	Q3 2014  07/2014 – 09/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	30	Mourning Dove Sora Lesser Nighthawk Dove Sp. American Coot Burrowing Owl (1) Eurasian Collared Dove Common Ground Dove Unknown
1RA 1RB 1RC	Q4 2014  10/2014 – 12/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	34	Sora American Kestrel Mourning Dove Dove Sp. Eurasian Collared Dove American Coot White Winged Dove Savannah Sparrow Common Gallinule Rock Dove Unknown
1SA 1SB 1SC	Q1 2015  01/2015 – 03/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	24	Eurasian Collared Dove American Coot Burrowing Owl (2) Horned Lark Icteridae sp. Mourning Dove Cattle Egret Sora Unknown
1TA 1TB 1TC	Q2 2015  04/2015 – 06/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	22	Virginia Rail White-Crowned Sparrow Western Meadowlark Common Gallinule Sora

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								Eurasian Collared Dove American Coot Parulidae Sp. Common Grackle Cliff Swallow Trochilidae Sp. Lesser Nighthawk Pacific Loon Mourning Dove Say's Phoebe Unknown
1UA Missing August 1UC	Q3 2015  07/2015 – 09/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	45+ missing August data	Lesser Nighthawk Horned Lark Mourning Dove Western Grebe Eurasian Collared Dove Mexican Free Tailed Bat Sora Columbidae Sp. Common Gallinule California Towhee
1VA 1VB 1VC	Q4 2015  10/2015 – 12/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	69	Sora Columbidae Sp. Eurasian Collared Dove Common Gallinule White-winged Dove Virginia Rail Ardeidae Sp. American Coot Western Meadowlark Mourning Dove Black Phoebe Say's Phoebe Burrowing Owl (3) Greater Roadrunner Mallard Vesper Sparrow Blue Footed Booby European Starling

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1W A 1W B 1W C	Q1 2016  01/2016 – 03/2016	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	35	Unknown Mourning Dove Sora Dove Sp. Western Meadowlark Black Phoebe Rock Pigeon American Coot Red-Tailed Hawk Emberizidae Sp. Eurasian Collared Dove White-Faced Ibis Savannah Sparrow Surf Scoter Barn Owl Unknown
1J	Quarterly Report  07/2013 – 09/2013	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	6	
1K	Quarterly Report  01/2014 – 03/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	11	
1L	Quarterly Report  04/2014 – 06/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	5	
1M	Quarterly Report  07/2014 – 09/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	8	
1N	Quarterly Report  01/2015 – 03/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	5	
1B	1st Quarterly Post- Constructi on Report	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	53	Short Eared Owl Burrowing Owl Blackbird sp. Savannah Sparrow

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	08/2012 – 11/2012							Western Meadowlark Red Tailed Hawk Mourning Dove Fox Sparrow Common Raven CA Horned Lark Northern Flicker Lincolns Sparrow Long Eared Owl American Crow
1C	2 <sup>nd</sup> Quarterly Post-Constructi on Report  11/2012 – 02/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	144	
1D	3 <sup>rd</sup> Quarterly Post-Constructi on Report  02/2013 – 05/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	84	
1E	4 <sup>th</sup> Quarterly Post-Constructi on Report  05/2013 – 08/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	89	
1F	5 <sup>th</sup> Quarterly Post-Constructi on Report  08/2013 – 11/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	103	
1G	6 <sup>th</sup> Quarterly Post-Constructi on Report	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	152	

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	on Report							
	11/2013 – 02/2014							
1H	7 <sup>th</sup> Quarterly Post- Constructi on Report	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	54	
	02/2014 – 05/2014							
1I	8 <sup>th</sup> Quarterly Post- Constructi on Report	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	24	
	05/2014 – 08/2014							
1X	08/2011 – 12/2011	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	8	Burrowing Owl (1)
1X	Q1 2012 01/2012 – 03/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	3	Western Grebe Eared Grebe American Coot American Avocet
1X	Q2 2012 04/2012 – 06/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	3	Loggerhead Shrike (6) Mourning Dove Common Loon (5)
1X	Q3 2012 07/2012 – 09/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	10	Sora Wilson's Warbler Brown pelican Common raven
1X	Q4 2012 10/2012 – 12/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	10	Double-crested Cormorant Great-Tailed Grackle
1X	Q1 2013 01/2013 – 03/2013	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	3	Ruddy Duck Ash-throated Flycatcher Brown-headed
1X	Q2 2013 04/2013 – 06/2013	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	20	Cowbird Common Poorwill Horned Lark Sagebrush
1X	Q3 2013	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	25	Sparrow Townsend's

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	07/2013 – 09/2013							Warbler
1X	Q4 2013	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	26	Western Tanager
	10/2013 – 12/2013							White Crowned Sparrow
1X	Q1 2014	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	4	Yellow Headed Blackbird
	01/2014 – 03/2014							Black Headed Grosbeak
1X	Q2 2014	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	18	Brewer's Blackbird
	04/2014 – 06/2014							Common Yellowthroat
1X	Q3 2014	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	15	Costa's Hummingbird
	07/2014 – 09/2014							House Finch
1X	Q4 2014	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management	10	Lesser Nighthawk
	10/2014 – 12/2014							Pied-Billed Grebe
								Say's Phoebe
								Sparrow Sp.
								Virginia Rail
								Yellow Rumped Warbler
								American Kestrel
								American White Pelican
								Barn Owl
								Black-crowned Night-Heron
								Black-tailed Gnatcatcher
								Blue-winged Teal
								Clapper Rail
								Common Merganser
								Great Egret
								Lesser Scup
								Long-eared Owl
								Mallard
								Northern Mockingbird
								Prairie Falcon
								Red-breasted Merganser
								Redhead
								Red-necked Phalarope
								Red-winged Blackbird
								Savannah Sparrow (1)

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								Surf Scoter Tree Swallow Blackbird Sp. Duck Sp. Empidonax Flycatcher Sp. Hummingbird Sp. Jaeger Sp. Verdin Western Meadowlark White-faced Ibis White-winged Dove Wilson's Snipe Yellow Warbler
2A	1 <sup>st</sup> Quarterly Report  08/2014 – 10/2014	Centinela Solar		170 / PV	Imperial County	Imperial County / Bureau of Land Management	21	
1Y	2 <sup>nd</sup> Quarterly Report  11/2014 – 01/2015	Centinela Solar		170 / PV	Imperial County	Imperial County / Bureau of Land Management	26	
1Z	3 <sup>rd</sup> Quarterly Report  02/2015 – 04/2015	Centinela Solar		170 / PV	Imperial County	Imperial County / Bureau of Land Management	13	
2BA 2BB 2BC	4 <sup>th</sup> Quarterly Report  05/2015 – 07/2015	Centinela Solar		170 / PV	Imperial County	Imperial County / Bureau of Land Management	8	
2CA 2CB	11/2013 - 12/2013	Imperial Solar Energy Center South	Tenaska	130 / PV	Imperial County	Imperial County	5	
2DA 2DB 2DC	01/2014 – 03/2014	Imperial Solar Energy Center	Tenaska	130 / PV	Imperial County	Imperial County	5	

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		South						
2EA 2EB 2EC	07/2015 – 09/2015	Mcoy	NextEra	750 / PV	Riverside County	Bureau of Land Management	29	
2FA 2FB 2FC	10/2015 – 12/2015	Mcoy	NextEra	750 / PV	Riverside County	Bureau of Land Management	91	
2G	01/01/16	Mcoy	NextEra	750 / PV	Riverside County	Bureau of Land Management	0	
2HA 2HB 2HC	07/2015 – 09/2015	Blythe Solar Energy Center	NextEra		Riverside County			

## II. CONCLUSION

Citizens respectfully requests that the Board continue the August 29, 2017 hearing on the Project by at least 30 to 60 days, in order to afford Citizens and other members of the public adequate opportunity to review and consider the FEIR. Citizens also urges the Board to remand the Project to staff to revise and recirculate the FEIR to accurately disclose and mitigate the Project's potentially significant impacts on bird and bat species from collision with solar panels and other Project infrastructure.

Thank you for your consideration of these comments. Please place them in the record of proceedings for the Project.

Sincerely,



Christina M. Caro

CMC:acp

3447-017acp



550 West C Street  
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San Diego, CA 92101  
619.719.4200 phone  
619.719.4201 fax

WWW.ESAESG.COM

## memorandum

date August 28, 2017

to Russell Brady, Riverside County Planning

cc Rupal Patel, RRG

from Cristina Gispert, ESA

subject Responses to August 25, 2017 Adams Broadwell Joseph and Cardozo Letter Concerning Palo Verde Mesa Solar Project

Dear Russell;

ESA has identified the following comments provided in the August 25, 2017 Adams Broadwell Joseph and Cardozo (ABJC) letter concerning the Palo Verde Mesa Solar Project Final EIR. The Draft and Final EIR adequately address the issues identified by the commenter. Please see our responses below.

***ABJC Comment 1: Citizens' DEIR comments included evidence from its biological consultant demonstrating that the Project is likely to have a significant impact on avian and bat species due to collisions with the Project's solar PV panels. Rather than disclose this impact as significant, the FEIR ignores the evidence submitted by Citizens, and instead erroneously concludes that "due to the available scientific knowledge collected at this time, avian mortality due to collision at solar projects is considered low, and impacts would be less than significant in this regard."***

- This comment is addressed at length under Comment Responses A6-6 through A6-9 and O3-66 in the Final EIR.
- The commenter is incorrect that the DEIR considered potential collisions to be less than significant. On page 3.4-44 of the DEIR that states "Direct and indirect impacts to avian species may occur during Project construction, operation, and decommissioning through collisions with Project facilities and equipment including transmission wires, fencing, array structures, and heavy equipment. ... Such collisions can result in injury or mortality, including, in the case of power lines, from electrocution. This is a potentially significant impact of the Project."
- Mitigation Measure BIO-7 is provided to reduce potential bird and bat impacts to less than significant levels. Mitigation Measure BIO-7 requires implementation of a Bird and Bat Conservation Strategy (BBCS). The Draft BBCS contains additional details regarding the Project's approach to avoiding, monitoring, reporting, and mitigating avian and bat mortality. The BBCS also includes specific thresholds, which if surpassed would trigger potential adaptation or additional mitigation measures. The Project's Draft BBCS was developed with consideration and guidance from the data and suggestions presented in relative guidance documents, such as the USFWS Region 8 Interim Guidelines for the

Development of a Project specific Avian and Bat Protection Plan for Solar Energy Plants and Related Transmission Facilities. As noted by Mitigation Measure BIO-7, the BBCS is considered a "living document" and would be based on specific recommendations from the USFWS and CDFW. Thus, the USFWS and CDFW will have opportunity to provide input on the Project's approach to mitigating potentially significant avian and bat impacts based on ongoing data collection and analyses at the Project and at other projects in the region through the BBCS process. Given the uncertainty that exists regarding potential risks solar projects pose to avian and bat species, the BBCS's process for monitoring, reporting, and adaptively managing/mitigating impacts is appropriate.

- There is little data to suggest solar projects pose a significant collision risk to bat species. In fact, data presented by the commenter include reference to bat species only twice (number of fatalities associated with each reference not provided). Nevertheless, the Project's BBCS addresses potential bat impacts and includes a threshold for bat fatalities which if surpassed would trigger adaptation or additional mitigation measures.

**ABJC Comment 2:** *The commenter presents additional avian and bat mortality data from solar projects in California and the western US.*

- The additional data provided by the commenter does not change the Draft EIR's conclusion that related impacts of the Project would be potentially significant and require implementation of Mitigation Measure BIO-7 to reduce impacts to a level below significance.

Please contact Cristina Gispert at (619) 799-8959 or [cgispert@esassoc.com](mailto:cgispert@esassoc.com) should you have any questions.

Thank you,



Cristina Gispert, Managing Associate  
ESA

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August 28, 2017

*Via Email and Overnight Delivery*

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Honorable Members of the Board of  
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Re: Action Item 4992 / Public Hearing Item – CUP03684, PUP00916,  
DA00086, EIR00532: Palo Verde Mesa Solar Project (CUP No.  
3684 and PUP No. 916) / Final Environmental Impact Report

Dear Chair Tavaglione, Honorable Members of the Board of Supervisors, Ms.  
Harper-Ihem, Mr. Brady, Mr. Ross, Mr. Weiss:

On behalf of Citizens for Responsible Solar ("Citizens"), we submit these  
*supplemental comments*<sup>1</sup> on Action Item 4992 and the Final Environmental  
Impact Report ("FEIR") for the Palo Verde Mesa Solar Project ("Project"). These  
comments address the FEIR's response to Citizen's comments regarding hazardous  
materials, air quality, biological resources, and failure to respond to comments  
regarding the Project's potentially significant, unmitigated impacts on water

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<sup>1</sup> On August 25, 2017, Citizens submitted preliminary comments on the FEIR addressing the  
Project's significant impacts on sensitive bird and bat species from collisions with solar panels and  
other Project structures. Those comments are incorporated by reference herein.

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quality. Citizens expressly reserves the right to supplement these comments at the Board hearing, and at any later hearings and proceedings related to this Project.<sup>2</sup>

Citizens urges the Board of Supervisors to continue the August 29, 2017 hearing on the Project by at least 30 to 60 days in order to give the public adequate time to review and respond to the massive amount of new information contained in the FEIR. The FEIR was released on August 17, 2017, less than 10 days ago, and contains over 1000 pages of new evidence and information that was not contained in the DEIR. A continued hearing is necessary in order to ensure a meaningful opportunity for public review of the FEIR and public comment at the Board hearing, in order to give the Board the opportunity to consider the public's comments *before* the County makes any final decisions regarding the Project.

Citizens for Responsible Solar is an unincorporated association of individuals and labor organizations that may be adversely affected by the potential health, safety, public service, and environmental impacts of the Project. The association includes Blythe resident George Ellis, Riverside County resident James Hennegan, and California Unions for Reliable Energy ("CURE") and its members and families and other individuals that live and/or work in east Riverside County. Citizens was formed to advocate for responsible and sustainable solar development in and around Riverside County, in order to protect public health and safety and the environment where Citizens' members and their families live, work, and recreate. Citizens has a direct interest in ensuring that the environmental impacts of the Project are fully disclosed to the public and mitigated to the extent feasible, and in ensuring that the County and the Applicant comply with all applicable local, State, and Federal laws in their consideration of this Project.

Citizens and its technical consultants have conducted an initial review of the FEIR. Based on our review, it is clear that the County failed to prepare a legally adequate environmental document for the Project pursuant to the California Environmental Quality Act ("CEQA"),<sup>3</sup> and failed to correct the significant

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<sup>2</sup> Citizens submitted comments on the Draft Environmental Impact Report ("DEIR") for the Project November 28, 2016, and supplemental comments on February 16, 2017. Those comments are incorporated by reference. Citizens reserves the right to supplement these comments at later hearings and proceedings on this Project. Gov. Code § 65009(b); PRC § 21177(a); *Bakersfield Citizens for Local Control v. Bakersfield* (2004) 124 Cal. App. 4th 1184, 1199-1203; see *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.

<sup>3</sup> Public Resources Code ("PRC") §§ 21000 et seq.; 14 Cal. Code Regs. ("CCR") §§ 15000 et seq. 3447-018acp



informational and analytical deficiencies in the DEIR that were identified by Citizens, public agencies, and other members of the public.

These comments are supported by the technical comments of Citizens' expert air quality consultants Paul Rosenfeld, PhD, and Hadley Nolan, and hazardous materials and hydrology expert Matt Hageman, P.G., C.Hg, of Soil Water Air Protection Enterprise ("SWAPE")<sup>4</sup>, as well as the comments of expert biologist Shawn Smallwood.<sup>5</sup> The comments of SWAPE and Mr. Smallwood demonstrate that many of the FEIR's conclusions and significance determinations lack substantial evidence. The consultants' comments also present substantial evidence demonstrating that several of impacts described in the FEIR as less than significant, or less than significant with mitigation, are substantially more significant than the FEIR discloses. SWAPE and Mr. Smallwood identify additional analysis and mitigation measures

Citizens urges the Board to continue this hearing in order to give Staff the opportunity to fully consider Citizens' comments and evidence, and to revise and recirculate the FEIR to address its significant errors and omissions, prior to conducting any further hearings on the Project.

**I. THE FEIR AND STAFF REPORT FAIL TO ADEQUATELY DISCLOSE AND MITIGATE THE PROJECT'S POTENTIALLY SIGNIFICANT IMPACTS**

**A. The FEIR and Staff Report Fail to Accurately Disclose and Mitigate the Project's Significant Carcinogenic Health Impacts from Diesel Truck Emissions.**

Citizens' DEIR comments previously explained that the DEIR failed to adequately evaluate the health risk posed to nearby sensitive receptors from exposure to diesel particulate matter ("DPM") emissions released during Project construction. In response to those comments, the FEIR included an updated health risk assessment ("HRA") which incorporated OEHHA current guidance, as recommended by SWAPE.<sup>6</sup> SWAPE reviewed the updated HRA and concludes that several assumptions the FEIR relies upon to calculate the health risk are incorrect

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<sup>4</sup> SWAPE's comments are attached hereto as Exhibit A.

<sup>5</sup> Mr. Cashen's comments are attached hereto as Exhibit B.

<sup>6</sup> Responses, p. 2-200- 2-201.  
3447-018acp

or unsupported.<sup>7</sup> For example, the FEIR states that, while some off-site truck emissions would be occurring near the project site, only approximately 0.01 tpy of DPM would be emitted within 1 mile of the Project site.<sup>8</sup> However, this conclusion is not supported, and is indeed contradicted, by the FEIR's own emissions estimates.<sup>9</sup> As a result, SWAPE concludes that the FEIR still fails to accurately disclose the significant of health impacts to local sensitive receptors from exposure to DPM during Project construction.<sup>10</sup>

SWAPE also concludes that the Project's construction-related excess cancer risk is underestimated. SWAPE prepared its own screening level health risk assessment, using the Project's 3-year construction period as the exposure duration, and using health risk parameters recommended by OEHHA. Using these parameters, SWAPE health risk assessment demonstrates that the Project's construction-related residential cancer risk is 12.1 in one million.<sup>11</sup> This exceeds the applicable Air District significance threshold of 10 in one million, and it therefore a per se significant health risk impact.

This is significant impact that was not disclosed in the FEIR, and for which the County has not provided any mitigation. The FEIR must be revised to disclose and mitigate this significant impact, and the Board cannot recommend approval the Project unless and until these impacts are fully mitigated.

**B. The FEIR and Staff Report Fail to Disclose and Mitigate Potentially Significant Impacts from Disturbing Contaminated Soil During Project Construction.**

The FEIR fails to correct significant informational deficiencies in the DEIR's hazardous materials analysis that were previously identified by SWAPE, including, the DEIR's failure to quantify the extent and severity of potential impacts from exposure to soil contamination during Project construction phases.

The Project site encompasses the Blythe Lemon Ranch, a cleanup case that involved approximately 80 underground storage tanks ("USTs") used to fuel

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<sup>7</sup> Exhibit A, p. 2.

<sup>8</sup> Responses, p. 2-200 – 2-201.

<sup>9</sup> Exhibit A, p. 4.

<sup>10</sup> Exhibit A, pp. 2-3.

<sup>11</sup> Exhibit A, p. 5.

gasoline-powered wind turbines.<sup>12</sup> The DEIR included a Phase I Environmental Site Assessment ("ESA"), which stated that residual gasoline contamination was documented to remain in soils beneath the Project at 44 of the former USTs.<sup>13</sup> Mr. Hagemann explains that the the Colorado River Basin Regional Water Quality Control Board's grant of "no further action required" status for the former UST sites is not determinative of the level of health risk that will be implicated if the USTs and contaminated soils surrounding them, are excavated during Project construction. Mr. Hagemann concludes that the residual fuel contamination documented in soil at the time of closure in 1991 may pose a significant risk to construction workers and nearby residents during Project construction.<sup>14</sup>

The FEIR dismisses Mr. Hagemann's comments by simply referring to the closure of the USTs without addressing the data SWAPE highlighted in its DEIR comments, which showed residual contamination in soil at concentrations that are above levels that would be hazardous to construction workers, and without quantifying or disclosing the significance of the existing residual contamination.

At the time of the Lemon Ranch site closure, concentrations of gasoline in shallow soil that exceed Environmental Screening Levels (ESLs)<sup>15</sup> for direct exposure to construction workers were allowed to remain in place. ESLs are groundwater, soil, soil gas, and indoor air concentrations developed by the regional water boards for over 100 toxic chemicals to be used to evaluate environmental sampling data collected from contaminated sites. Water Board guidance on ESLs explains that the presence of a chemical at concentrations in excess of an ESL indicates "that additional evaluation is warranted."<sup>16</sup> Based on the existing levels of residual contamination that exceed ESLs, Mr. Hagemann concludes that the gasoline contamination that remains in this soil is likely to pose health risks that include central nervous system impairments, headaches and dizziness, peripheral

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<sup>12</sup> Exhibit A, p. 6.

<sup>13</sup> *Id.*

<sup>14</sup> *Id.*

<sup>15</sup> See

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[http://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/ESL/ESL%20Workbook ESLs-Interim%20Final-22Feb16-Rev3-PDF.pdf](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/ESL/ESL%20Workbook%20ESLs-Interim%20Final-22Feb16-Rev3-PDF.pdf).

<sup>16</sup> See

[http://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/ESL/ESL%20Users%20Guide-22Feb16.pdf](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/ESL/ESL%20Users%20Guide-22Feb16.pdf)  
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neuropathy, and effects on the blood, immune system, lungs, skin, and eyes for any person who comes into contact with it.<sup>17</sup>

Mr. Hagemann explains that these impacts are not limited to the Project site or Project workers:

Not only are construction workers subject to these risks, the worker's families may also be at risk if clothing and footwear is contaminated during construction and brought home. Nearby residents, some located within 230 feet of the Project, may also be subject to health risks when soil is disturbed during Project construction. Nearby residents may inhale dust that may have absorbed gasoline contaminants.<sup>18</sup>

Mr. Hagemann concludes that a Phase II ESA must be prepared prior to Project approval to identify the specific locations of the former USTs and to sample those locations for the presence of soil contaminants associated with residual gasoline.

Phase II ESAs are commonly prepared for projects such as this one, which involve soil disturbance and excavation, in order to collect soil samples and analyze them for contaminants in a controlled laboratory analysis. The Project will involve pile driving and excavation, which will disturb soil at the Project site. The EIR fails to disclose whether any of the Project's planned pile driving and excavation will occur in the locations where USTs exist, or at depths where residual contamination has been documented. It is critical that the EIR disclose the location of each of the former USTs, as well as the location and levels of all associated contamination, in order to determine whether, and to what extent, Project excavation activities will directly disturb this contamination, and whether that disturbance poses a significant risk to human health.

Mr. Hagemann further explains that the Phase II ESA should also sample for the presence of residual pesticides which are acknowledged to be potentially present in soil from former agricultural operations.<sup>19</sup> The sampling, under a Phase II investigation, must be conducted prior to Project approval, so that any health risks can be quantified and mitigated in a revised FEIR.

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<sup>17</sup> Exhibit A, pp. 5-6.

<sup>18</sup> *Id.*

<sup>19</sup> Exhibit A, p. 6; FEIR, p. 2-256.

As drafted, the FEIR contains inadequate information to determine whether soil disturbance during Project construction will pose significant health impacts on the public. The FEIR's conclusion that this risk is insignificant is not supported by substantial evidence.

**C. The FEIR and Staff Report Fail to Accurately Disclose and Mitigate the Project's Significant Impacts on Water Quality.**

Citizens' February 16, 2017 supplemental comments on the DEIR ("Supplemental Comments") identified several deficiencies in the DEIR's analysis of water quality impacts, including potentially significant impacts to jurisdictional waters. The FEIR fails entirely to respond to those comments. Mr. Hagemann concludes that the FEIR fails to disclose critical facts demonstrating that vehicular traffic and road modification associated with Project construction are likely to adversely affect water quality in the Southern Wash, a tributary to the Colorado River, and the McCoy wash.<sup>20</sup>

Under CEQA, a significant impact may result when a project would violate water quality standards or waste discharge requirements or remove, fill, interrupt hydrology or, by other means, adversely affect waters of the State or jurisdictional waters of the U.S., as defined by section 404 of the CWA.<sup>21</sup>

McCoy wash, which passes through the northeast portion of the Project site, is a "tributary of the Colorado River."<sup>22</sup> SWAPE previously explained that the eastward flow of both the McCoy and Southern Wash render both washes tributaries of the Colorado River.<sup>23</sup> SWAPE mapped the connection between the McCoy and Southern washes and the Colorado River. Citizens provided SWAPE's mapping to the County in its Supplemental Comments:<sup>24</sup> Attachment 1 to Supplemental Comments Exhibit A: The McCoy and Southern Washes' Connection to the Colorado River.<sup>25</sup>

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<sup>20</sup> See Exhibit A, p. 7.

<sup>21</sup> CEQA Guidelines, Appendix G (VII)(a), (IV)(d).

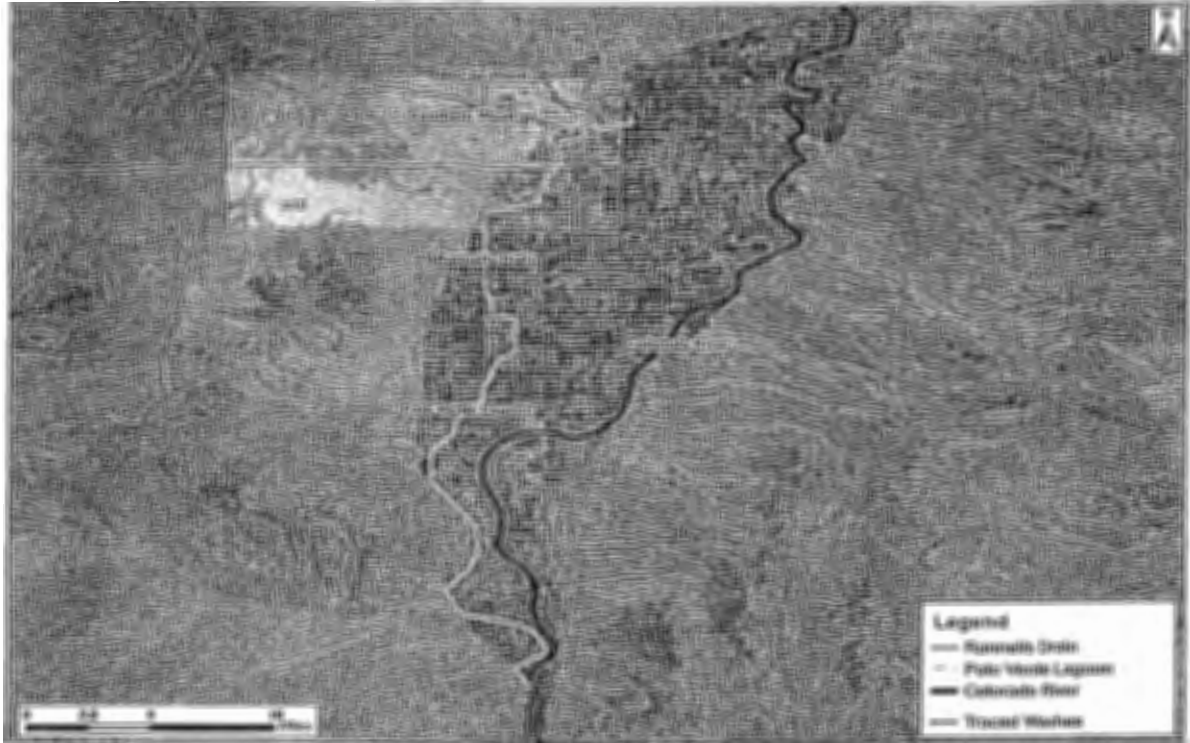
<sup>22</sup> FEIR, p. 3.4-47.

<sup>23</sup> Exhibit A: Letter from Matt Hagemann to Ned Thimmayya re: Comments on the Hydrological Impacts of the Palo Verde Mesa Solar Project ("SWAPE Comments"), p. 1.

<sup>24</sup> *Id.*, p. 1.

<sup>25</sup> *Id.*, p. 4.

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SWAPE's comments on the DEIR explained that the Project may significantly impact the Southern Wash.<sup>26</sup> According to Mr. Hagemann, use of two access roads—Buck Boulevard and Stephenson Boulevard—crossing the Southern Wash will require modification in order to be used as described by the applicant.<sup>27</sup>

Mr. Hagemann explained that both Buck Boulevard and Stephenson Boulevard are “light duty” access roads that are insufficient for supporting construction of the scale required for the Project.<sup>28</sup> The DEIR recognized that Buck Boulevard crosses the Southern Wash at a “low water crossing” and that Buck Boulevard will be the “primary access” for the Project’s construction workers and delivery trucks.<sup>29</sup> As a result, the DEIR explained that all construction-related trips will cross the Southern Wash,<sup>30</sup> and that heavy Project machinery would therefore

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<sup>26</sup> Exhibit A to Supplemental Comments: SWAPE Comments, p. 3.

<sup>27</sup> *Id.*, p. 1–3.

<sup>28</sup> *Id.*, p. 3.

<sup>29</sup> DEIR, p. 3.9-20; *id.*, p. 2-29.

<sup>30</sup> DEIR, p. 2-29.

be transported via Buck Boulevard and thus cross the Southern Wash.<sup>31</sup> The DEIR further acknowledged that "primary access roads...shall be surfaced with aggregate,"<sup>32</sup> and that paving may also be required for these roads,<sup>33</sup> thus implicitly acknowledging that the Southern Wash may be altered, or even filled with aggregate materials, in order to allow Project vehicles to pass along Buck Boulevard.

Mr. Hagemann concludes that these alterations and sediment deposits would adversely affect water quality in the Southern Wash.<sup>34</sup> The Southern Wash is a tributary to the Colorado River, and is therefore a jurisdictional waterway that is subject to regulation under the Clean Water Act (33 U.S.C. §1251 et seq.). Thus, the Project's direct impacts on the Southern Wash, as well as any indirect adverse impacts on the Colorado River resulting from Project activities that impact the Southern Wash, constitute significant impacts under CEQA.

The FEIR fails to disclose these impacts as significant, and fails to include adequate mitigation measures to reduce impacts to the Southern Wash to less-than-significant levels. The FEIR must be revised and recirculated to correct these deficiencies.

**D. The FEIR and Staff Report Fail to Accurately Disclose and Mitigate the Project's Significant Impacts on Burrowing Owls.**

Citizens' DEIR comments presented evidence demonstrating that the DEIR failed to adequately disclose the Project's potentially significant impacts to burrowing owls. Mr. Smallwood reviewed the FEIR's responses to those comments, and concludes that the FEIR failed to correct these errors. Mr. Smallwood concludes that the FEIR continues to erroneously conclude that over 90% of the Project site provides unsuitable habitat for burrowing owls, when, in fact, there is ample suitable habitat on site for the owls.<sup>35</sup> Mr. Smallwood explains that the FEIR's failure to recognize the presence of, and likelihood of occurrence, of burrowing owls at the Project site, is due to the County's failure to adhere to the basic CDFW 2012 Burrowing Owl Guidelines in conducting the baseline surveys for the DEIR.

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<sup>31</sup> *Id.*

<sup>32</sup> *Id.*, p. 3-9-15.

<sup>33</sup> *Id.*

<sup>34</sup> Exhibit A, p. 7.

<sup>35</sup> See Exhibit B, p. 5-9.

Below is a table summarizing the specific requirements of the 2012 Burrowing Owl Guidelines that the FEIR fails to comply with. Each of these deficiencies constitutes a separate violation of the County's duty to conduct accurate baseline surveys, and to disclose and mitigate potentially significant impacts to burrowing owl in the FEIR. The FEIR must be revised and recirculated to correct these deficiencies.

*Table 1. Assessment of EIR consistency with CDFW's (2012) recommended burrowing owl survey protocol. Standards are numbered to match those in CDFW (2012).*

Standard in CDFW (2012)	Assessment of surveys performed	Was the standard met?
<b>Minimum qualifications of biologists performing surveys and impact assessments</b>		
(1) Familiarity with the species and local ecology	Some of the scientific literature is cited, but there is no evidence of personal familiarity with burrowing owl ecology. As an example, had Power Engineers been familiar with the species, their survey report would not have concluded that burrowing owls are active at dawn and dusk and sometimes at night; instead, it would have concluded the species is most active at night.	No
(2) Experience conducting habitat assessments and breeding and non-breeding season surveys	No evidence of experience was provided.	No
(3) Familiarity with regulatory statutes, scientific research and conservation related to burrowing owls	A few papers were cited on burrowing owl ecology, but no information was provided that would demonstrate knowledge of burrowing owl conservation.	No
(4) Experience with analyzing impacts on burrowing owls	No information provided.	No
<b>Habitat assessment</b>		
(1) Conduct at least 1 visit covering entire site and offsite buffer to 150 m	There was a visit in October 2011, but the County summarily deemed the majority (77.2%) of the project	No



Standard in CDFW (2012)	Assessment of surveys performed	Was the standard met?
	footprint as unsuitable because it was classified as fallow agricultural	
(2) Prior to site visit, compile relevant biological information on site and surrounding area	No information reported other than reviews of surveys performed at neighboring projects.	No
(3) Check available sources for occurrence records	Other sources were reviewed.	Yes
(4) Identify vegetation cover potentially supporting burrowing owls on site and vicinity	No details provided other than dismissing most of the project footprint as unsuitable for burrowing owls.	No
(5a) Describe project and timeline of activities	Timeline of activities was unreported.	No
(5b) Regional setting map showing project location	Provided.	Yes
(5c) Detailed map with project footprint, topography, landscape and potential vegetation-altering activities	The project footprint was mapped.	Yes
(5d) Biological setting including location, acreage, terrain, soils, geography, hydrology, land use and management history	Some of this information was reported, though some was cursory in description.	Partial
(5e) Analysis of relevant historical information concerning burrowing owl use or occupancy	None provided.	No
(5f) Vegetation cover and height typical of temporal and spatial scales relevant to the assessment	Not provided.	No
(5g) Presence of burrowing owl individuals, pairs or sign	Not provided, as no surveys were performed.	No
(5h) Presence of suitable burrows or burrow surrogates	The increasing number of ground squirrels and their burrows was mentioned (page 7), but Power Engineers inexplicably failed to conclude that burrowing owls likely increased in occurrence along with the ground squirrels.	No

Standard in CDFW (2012)	Assessment of surveys performed	Was the standard met?
<b>Breeding season surveys</b>		
Perform 4 surveys separated by at least 3 weeks	Achieved over 323 acres deemed suitable by Riverside County, but not achieved over 90% of the project footprint.	No
1 survey between 15 February and 15 April	Achieved over 323 acres deemed suitable by Riverside County, but not achieved over 90% of the project footprint.	No
2-3 surveys between 15 April and 15 July	Achieved over 323 acres deemed suitable by Riverside County, but not achieved over 90% of the project footprint.	No
1 survey following June 15	Achieved over 323 acres deemed suitable by Riverside County, but not achieved over 90% of the project footprint.	No
Walk transects spaced 7 m to 20 m apart	Achieved over 323 acres deemed suitable by Riverside County, but not achieved over 90% of the project footprint.	No
Scan entire viewable area using binoculars at start of each transect and at 100 m intervals	No surveys were performed over >90% of the project area.	No
Record all potential burrow locations determined by presence of owls or sign	No surveys were performed over >90% of the project area.	No
Survey when temperature >20° C, winds <12 km/hr, and cloud cover <75%	Mostly achieved on <10% of project area, but no surveys were performed over >90% of the project area.	No
Survey between dawn and 10:00 hours or within 2 hours before sunset	Mostly achieved on <10% of project area, but no surveys were performed over >90% of the project area.	No
Identify and discuss any adverse conditions such as disease, predation, drought, high rainfall or site disturbance	Possibly achieved on <10% of project area (high winds were reported during one survey), but no surveys were performed over >90% of the project area.	No

Standard in CDFW (2012)	Assessment of surveys performed	Was the standard met?
Survey several years at projects where activities will be ongoing, annual or start-and-stop to cover high nest site fidelity	Only one year of surveys was performed.	No
<b>Reporting should include:</b>		
(1) Survey dates with start and end times and weather conditions	Achieved.	Yes
(2) Qualifications of surveyor(s)	None provided.	No
(3) Discussion of how survey timing affected comprehensiveness and detection probability	No surveys were performed.	No
(4) Description of survey methods including point count dispersal and duration	None provided.	No
(5) Description and justification of the area surveyed	Provided, but justification was unsupportable, consisting merely of a County staff member requiring surveys over small areas covered by natural vegetation.	No
(6) Numbers of nestlings or juveniles associated with each pair and whether adults were banded or marked	No surveys were performed over >90% of the project area, so survey effort was incomplete.	No
(7) Descriptions of behaviors of burrowing owls observed	No surveys were performed over >90% of the project area, so survey effort was incomplete.	No
(8) List of possible burrowing owl predators in the area, including any signs of predation of burrowing owls	Only observed predator species were mentioned.	Partial
(9) Detailed map showing all burrowing owl locations and potential or occupied burrows	A map was provided showing the locations of where sign was found, but no surveys were performed over >90% of the project area, so no mapped results were possible over the majority of the project area.	Partial
<del>(10) Signed field forms, photos, etc.</del>	<del>None provided.</del>	<del>No</del>
(11) Recent color photos of project site	Provided.	Yes
(12) Copies of CNDDDB field forms	None provided in report.	No

## II. CONCLUSION

For the reasons discussed herein, and in our prior comments on the Project, Citizens respectfully requests that the Board require the County to revise and recirculate a legally adequate FEIR for the Project which fully discloses the Project's potentially significant impacts and requires implementation of all feasible mitigations required by law to reduce the Project's individual and cumulative impacts to less than significant levels.

Citizens also respectfully requests that the Board continue the August 29, 2017 hearing on the Project by at least 30 to 60 days, in order to afford Citizens and other members of the public adequate opportunity to review and consider the FEIR.

Thank you for your consideration of these comments. Please place them in the record of proceedings for the Project.

Sincerely,



Christina M. Caro

CMC:acp

# **EXHIBIT A**



Technical Consultation, Data Analysis and  
Litigation Support for the Environment

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Santa Monica, CA 90405

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August 28, 2017

Christina Caro  
Adams Broadwell Joseph & Cardozo  
601 Gateway Blvd., Suite 1000  
South San Francisco, CA 94080

**Subject:        Review of Final Environmental Impact Report, Palo Verde Mesa Solar Project**

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Dear Ms. Caro:

We have reviewed the August 2017 Final Environmental Impact Report (FEIR) for the Palo Verde Mesa Solar Project ("Project"). The responses to our comments, submitted in letters dated November 10, 2016 and February 13, 2017, fail to address concerns we expressed on impacts to air quality and hazards and hazardous waste. The FEIR should be revised adequately assess and to mitigate potential Project impacts.

### **Air Quality**

In our November 8, 2016 letter, we found that the DEIR failed to adequately evaluate the health risk posed to nearby sensitive receptors as a result of emissions generated during Project construction. Specifically, we found that the DEIR failed to incorporate recommended age specific inhalation rates set forth in the Office of Environmental Health Hazard Assessment's (OEHHA) most recent *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments* guidance document, and failed to account for children and infant's heightened sensitivities to carcinogenic pollutants. After review of the FEIR and the County of Riverside's ("County") Responses provided in the Response to Comments document, we maintain that the FEIR and associated response documents fail to adequately evaluate the Project's construction-related health risk posed to nearby sensitive receptors. A revised FEIR should be prepared to include an updated health risk assessment (HRA) that more accurately estimates the potential cancer risk.

### **Diesel Particulate Matter Health Risk Emissions Inadequately Evaluated**

Our November 8, 2017 letter found that the DEIR failed to adequately evaluate the health risk posed to nearby sensitive receptors from exposure to diesel particulate matter (DPM) emissions released during Project construction. In response to our comments, the County prepared an updated HRA which

incorporated the most up to date OEHHA guidance (Responses, p. 2-200- 2-201). In addition to the updated HRA, the County provided the following responses regarding our November 8 letter,

“As stated on Page 28 of the Air Quality and Global Climate Change Technical Report prepared for the project, the health risk calculations conservatively assumed that diesel particulate matter (DPM) emissions from on-site equipment as well as off-site haul trucks would be emitted at the project site. This is a standard approach in screening assessments, the logic being that if the result is less than the applicable significance threshold even with the most conservative of assumptions, the more accurate, refined result would be well below the threshold.

As shown on Page 28 of the technical report, on-site construction equipment would emit 0.62 tons per year (tpy) of DPM while off-site trucks would emit 0.53 tpy of DPM for a total of 1.15 tpy of DPM during project construction. Because the off-site trucks would be travelling 40-miles round trip, the majority of the on-road emissions would be well dispersed and occur far away from the nearby sensitive land uses (the residences). The health risk calculations performed by the commenter assumed that all 1.15 tpy of DPM would be emitted on-site which is not accurate, and as noted above, a gross overestimate” (Responses, p. 2-200).

Furthermore, the Responses state,

“While some off-site truck emissions would be occurring near the project site, only approximately 0.01 tpy of DPM would be emitted nearby (within 1 mile of the site). Thus, DPM emissions with the potential to impact the nearest sensitive receptors would include 0.62 tpy for equipment and 0.01 tpy for off-site trucks for a total of 0.63 tpy” (Responses, p. 2-200 – 2-201).

While we appreciate the County’s effort to respond to our November 8 comment regarding the Project’s health risk impact by preparing an updated HRA, review of the Responses and the FEIR’s updated assessment demonstrates that the assumptions the FEIR relies upon to calculate the health risk, as shown in the excerpts above, are incorrect, and as a result, the Project’s construction-related excess cancer risk is underestimated and should not be relied upon to determine Project significance. A revised FEIR should be prepared to include an updated health risk assessment that more accurately estimates the potential cancer risk.

As stated above, the FEIR prepared an updated health risk assessment, which was included in the Response to Comments document (Responses, p. 2-202). Based off of the updated health risk assessment, the FEIR concludes that with the use of corrected assumptions and the most up to date OEHHA guidance, the risks to nearby sensitive receptors from exposure to DPM emissions during Project construction would be 2.5 in one million, which is below the threshold of 10 in one million (see excerpt below) (Responses, p. 2-202).

**TABLE 2-2**  
**CANCER RISK CALCULATIONS – DIESEL PARTICULATE MATTER**

Parameter	Age			Total	Notes
	3rd Trimester	0 < 2	2<16		
Breathing Rate	361	1090	745		95th Percentile Breathing Rate
Exposure Frequency (EF) (days/year)	350	350	350		
Exposure Duration (ED) (years)	0.25	2	0.75	3	3-year exposure duration
Averaging Time (AT) (days)	25550	25550	25550		
Age Sensitivity Factor (ASF)	10	10	3		
Fraction of Time at Home (FAH)	1	0.85	0.72		
Annual Concentration (ug/m3)	7.97E-03	7.97E-03	7.97E-03		1-hr to Annual Conversion Factor of 0.03, and removal of emissions from haul trucks beyond 1 mile of the site/receptor
Dose (mg/kg-d)	2.76E-06	8.33E-06	5.69E-06		
Carcinogen Potency (CPF) (mg/kg-d) <sup>-1</sup>					
- Diesel Particulate Matter	1.1	1.1	1.1		
Cancer Risk	1.08E-07	2.23E-06	1.45E-07	2.48E-06	
Cancer Risk per Million	2.5				
Threshold	10				
Significant?	No				

SOURCE: ESA, 2017

Although the FEIR's updated HRA incorporates the correct age sensitivity factors (ASFs) and revised breathing rates recommended by OEHHa, the FEIR relies upon unsubstantiated assumptions to estimate the total amount of DPM emissions that would be generated by on-site construction equipment and off-road trucks used during Project construction, resulting in an unreliable and potentially underestimated calculation of the Project's health risk impact. Specifically, the FEIR asserts that a DPM emissions estimate of 1.15 tons per year (tpy), which was used in both the DEIR's and SWAPE's health risk assessments, is a gross overestimation of the actual amount of DPM emissions that would be emitted during Project construction (Responses, p. 2-201). The Responses attempt to justify this claim by stating that because off-site trucks would be "travelling 40-miles round trip, the majority of the on-road emissions would be well dispersed and occur far away from the nearby sensitive land uses (the residences)" (Responses, p. 2-201). However, the Responses provide no substantial or factual evidence to support this claim whatsoever. Additionally, the Responses make further conjectures regarding off-site truck emissions, stating that "while some off-site truck emissions would be occurring near the project site, only approximately 0.01 tpy of DPM would be emitted nearby, (within 1 mile of the site)", again without providing any details as to how this value was derived (Responses, p. 2- 201). Finally, the Responses conclude that the total DPM emissions resulting from Project construction that have the potential to impact nearby sensitive receptors are 0.62 tpy for on-site construction equipment and 0.01



tpy for off-site trucks, for a total of 0.63 tpy (Responses, p. 2-201). The Response's 0.01 tpy DPM emissions estimate for off-site trucks, which is used to calculate the Project's cancer risk, reduces the total amount of DPM emissions generated during construction by approximately 55 percent, and therefore, reduces the Project's total cancer risk estimation. By failing to provide any details on how the DPM emissions estimate for off-site trucks was calculated, we are unable to verify the accuracy of this emissions estimate. As a result, the adequacy of the health risk assessment provided in the Responses is unreliable, as it relies upon this value to estimate the Project's construction-related health risk.

Regardless of how the Responses derived the off-site truck emissions estimate, the Responses' claim that our screening level health risk assessment overestimates the Project's health risk impact by relying on a conservative emissions value is incorrect, and it demonstrates both the Responses and FEIR's lack of understanding behind the purpose of a screening-level analysis. OEHHA recognizes that screening-level analyses are more conservative, and tend to err on the side of health protection.<sup>1</sup> However, the purpose of a screening-level health risk assessment is to determine if a more refined health risk assessment needs to be conducted. If the results of a screening-level health risk assessment are above applicable thresholds, then the Project needs to conduct a more refined health risk assessment that is more representative of site specific concentrations. Screening-level analyses are supposed to represent the most conservative, worst-case scenario, and therefore should be calculated as such. The FEIR even notes that health risk calculations typically employ a conservative approach when estimating health risks, stating,

"This is a standard approach in screening assessments, the logic being that if the result is less than the applicable significance threshold even with the most conservative of assumptions, the more accurate, refined result would be well below the threshold" (Responses, p. 2-200).

Therefore, consistent with OEHHA guidelines, in order to represent the most conservative, worst-case scenario, the health risk assessment presented in our November 8 letter relies upon the most conservative assumptions, such as continuous exposure to pollutants and increased sensitivity to infants and children. Therefore, the Responses claim that our health risk assessment relies upon conservative values and gross overestimations that do not accurately represent the Project's health risk impacts is incorrect, as our analysis is consistent with health risk procedures set forth by OEHHA.

In an effort to provide the most conservative analysis of the Project's potential construction-related health risk impact, we prepared a simple screening level health risk assessment. Using an exposure duration of three years, we used health risk parameters recommended by OEHHA, which include up to date breathing rates, ASFs, and fraction of time at home (FAH) values. Using OEHHA recommended breathing rates of 361 L/kg-day, 1,090 L/kg-day, and 861 L/kg-day for third trimester gestations, infants, and children, respectively; an ASF of 10 for both third trimester gestations and an infant resident from age zero to two years, and an ASF of 3 for a child resident from age two to approximately three years;

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<sup>1</sup> [http://oehha.ca.gov/air/hot\\_spots/2015/2015GuidanceManual.pdf](http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf) p. 1-5

and a FAH value of 1, 0.85, and 0.72 for third trimester gestations, infants, and children, respectively, we estimate a residential cancer risk of 12.1 in one million (see table below).

Parameter	Description	Units	3rd Trimester	Infant	Child
Cair	Concentration	$\mu\text{g}/\text{m}^3$	0.03846	0.03846	0.03846
DBR	Daily breathing rate	L/kg-day	361	1090	861
EF	Exposure Frequency	days/year	350	350	350
ED	Exposure Duration	years	0.25	2	0.75
AT	Averaging Time	days	25550	25550	25550
	Inhaled Dose	(mg/kg-day)	4.8E-08	1.1E-06	3.4E-07
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1	1.1	1.1
ASF	Age Sensitivity Factor	-	10	10	3
FAH	Fraction of Time at Home	-	1	0.85	0.72
<b>Cancer Risk by Age Group</b>			<b>5.23E-07</b>	<b>1.07E-05</b>	<b>8.08E-07</b>
<b>Total Residential Cancer Risk</b>				<b>1.21E-05</b>	

This analysis demonstrates that when age-specific breathing rates, ASFs, and FAH values are utilized, per OEHHA guidance, and when the most conservative DPM emissions estimate is used, as required by CEQA, the Project's construction-related cancer risk of 12.1 in one million would exceed the 10 in one million significance threshold, thus resulting a potentially significant health risk impact. By failing to conduct an analysis of the Project's health risk impact assuming the most conservative, worst-case scenario, the Project's health risk impact is underestimated. Seeing as the FEIR's updated health risk assessment failed to evaluate the Project's impact using the most conservative assumptions, the FEIR lacks substantial evidence supporting the finding that air quality impacts to sensitive receptors would be less than significant. Until an updated FEIR is prepared that includes an updated health risk assessment that provides the most conservative evaluation of the DPM emissions generated during Project construction, the FEIR should not be approved, and should not be relied upon to determine Project significance.

## Hazards and Hazardous Waste

### Residual Contamination from Former Underground Fuel Tanks and Pesticides May Pose Health Risks

The Project site encompasses the Blythe Lemon Ranch, a cleanup case that involved approximately 80 underground storage tanks (USTs) used to fuel gasoline-powered wind turbines. The Phase I Environmental Site Assessment (ESA) for the DEIR stated that residual gasoline contamination was documented to remain in soils beneath the Project at 44 of the former USTs. The Colorado River Basin Regional Water Quality Control Board granted "no further action required" for the former UST sites; however, the residual fuel contamination documented in soil at the time of closure in 1991 may pose a risk to construction workers and nearby residents during Project construction.

The FEIR dismisses these concerns by simply referring to the closure of the USTs without addressing the data we highlighted that showed residual contamination in soil at concentrations that are above levels that would be hazardous to construction workers, and without quantifying or disclosing the significance of the existing residual contamination. At the time of closure, concentrations of gasoline in shallow soil that exceed Environmental Screening Levels (ESLs)<sup>2</sup> for direct exposure to construction workers were allowed to remain in place. ESLs are groundwater, soil, soil gas, and indoor air concentrations developed by the regional water boards for over 100 toxic chemicals to be used to evaluate environmental sampling data collected from contaminated sites. Water Board guidance on ESLs explains that the presence of a chemical at concentrations in excess of an ESL indicates "that additional evaluation is warranted."<sup>3</sup>

Based on the existing levels of residual contamination that exceed ESLs, it is my opinion that the gasoline contamination that remains in this soil is likely to pose health risks that include central nervous system impairments, headaches and dizziness, peripheral neuropathy, and effects on the blood, immune system, lungs, skin, and eyes for any person who comes into contact with it. The International Agency for Research on Cancer has determined that benzene, a component of gasoline that is present in subsoil contamination at the Project site, is carcinogenic to humans and that gasoline is possibly carcinogenic to humans.<sup>4</sup> Not only are construction workers subject to these risks, the worker's families may also be at risk if clothing and footwear is contaminated during construction and brought home. Nearby residents, some located within 230 feet of the Project, may also be subject to health risks when soil is disturbed during Project construction. Nearby residents may inhale dust that may have absorbed gasoline contaminants.

In my opinion, and consistent with water board guidance, a Phase II ESA must be prepared prior to Project approval to identify the specific locations of the former USTs and to sample those locations for the presence of soil contaminants associated with residual gasoline. Phase II ESAs are commonly prepared for projects such as this one, which involve soil disturbance and excavation, in order to collect soil samples and analyze them for contaminants in a controlled laboratory analysis. The Project will involve pile driving and excavation, which will disturb soil at the Project site. The EIR fails to disclose whether any of the Project's planned pile driving and excavation will occur in the locations where USTs exist, or at depths where residual contamination has been documented. It is critical that the EIR disclose the location of each of the former USTs, as well as the location and levels of all associated contamination, in order to determine whether, and to what extent, Project excavation activities will directly disturb this contamination, and whether that disturbance poses a significant risk to human health.

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<sup>2</sup> See

[http://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/ESL/ESL%20Workbook\\_ESLs\\_Interim%20Final\\_22Feb16\\_Rev3\\_PDF.pdf](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/ESL/ESL%20Workbook_ESLs_Interim%20Final_22Feb16_Rev3_PDF.pdf).

<sup>3</sup> See

[http://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/ESL/ESL%20Users%20Guide\\_22Feb16.pdf](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/ESL/ESL%20Users%20Guide_22Feb16.pdf)

<sup>4</sup> <https://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=423&tid=75>

The Phase II ESA should also sample for the presence of residual pesticides which are acknowledged to be potentially present in soil from former agricultural operations (FEIR, p. 2-256). The sampling, under a Phase II investigation, must be conducted prior to Project approval, so that any health risks can be quantified and mitigated in a revised FEIR. As drafted, the EIR contains inadequate information to determine whether soil disturbance during Project construction will pose significant health impacts on the public. The EIR's conclusion that this risk is insignificant is not supported by the existing information in the EIR.

## Hydrology and Water Quality

### Water Quality in Southern Wash may be Degraded by Project Traffic

In a letter prepared on February 13, 2017 we described how vehicular traffic and road modification associated with Project construction could affect water quality in the Southern Wash, a tributary to the Colorado River. These comments were not addressed in the FEIR. The comments we made, that mitigation measures proposed are insufficient for reducing impacts to the Southern Wash, should be addressed and incorporated into the FEIR.

Sincerely,



Paul E. Rosenfeld, Ph.D.



Matt Hagemann, P.G., C.Hg.



Hadley Nolan

**ATTACHMENT**



Technical Consultation, Data Analysis and  
Litigation Support for the Environment

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## ***Paul Rosenfeld, Ph.D.***

*Principal Environmental Chemist*

**Chemical Fate and Transport & Air Dispersion Modeling**

**Risk Assessment & Remediation Specialist**

### **Education**

Ph.D. Soil Chemistry, University of Washington, 1999. Dissertation on VOC filtration.

M.S. Environmental Science, U.C. Berkeley, 1995. Thesis on organic waste economics.

B.A. Environmental Studies, U.C. Santa Barbara, 1991. Thesis on wastewater treatment.

### **Professional Experience**

Dr. Rosenfeld is the Co-Founder and Principal Environmental Chemist at Soil Water Air Protection Enterprise (SWAPE). His focus is the fate and transport of environmental contaminants, risk assessment, and ecological restoration. His project experience ranges from monitoring and modeling of pollution sources as they relate to human and ecological health. Dr. Rosenfeld has investigated and designed remediation programs and risk assessments for contaminated sites containing, petroleum, MtBE and fuel oxygenates, chlorinated solvents, pesticides, radioactive waste, PCBs, PAHs, dioxins, furans, volatile organics, semi-volatile organics, perchlorate, heavy metals, asbestos, PFOA, unusual polymers, and odor. Significant projects performed by Dr. Rosenfeld include the following:

### **Litigation Support**

**Client: Missouri Department of Natural Resources (Jefferson City, Missouri)**

Serving as an expert in evaluating air pollution and odor emissions from a Republic Landfill in St. Louis, Missouri. Conducted. Project manager overseeing daily, weekly and comprehensive sampling of odor and chemicals.

**Client: Louisiana Department of Transportation and Development (Baton Rouge, Louisiana)**

Serving as an expert witness, conducting groundwater modeling of an ethylene dichloride DNAPL and soluble plume resulting from spill caused by Conoco Phillips.

**Client: Missouri Department of Natural Resources (St. Louis, Missouri)**

Serving as a consulting expert and potential testifying expert regarding a landfill fire directly adjacent to another landfill containing radioactive waste. Implemented an air monitoring program testing for over 100 different compounds using approximately 12 different analytical methods.

**Client: Baron & Budd, P.C. (Dallas, Texas) and Weitz & Luxenberg (New York, New York)**

Served as a consulting expert in MTBE Federal Multi District Litigation (MDL) in New York. Consolidated ground water data, created maps for test cases, constructed damage model, evaluated taste and odor threshold levels. Resulted in a settlement of over \$440 million.

**Client: The Buzbee Law Firm (Houston, Texas)**

Served as an expert in ongoing litigation involving over 50,000+ plaintiffs who are seeking compensation for chemical exposure and reduction in property value resulting from chemicals released from the BP facility.

**Client: Environmental Litigation Group (Birmingham, Alabama)**

Serving as an expert on property damage, medical monitoring and toxic tort claims that have been filed on behalf of over 13,000 plaintiffs who were exposed to PCBs and dioxins/furans resulting from emissions from Monsanto and Cerro Copper's operations in Sauget, Illinois. Developed AERMOD models to demonstrate plaintiff's exposure.

**Client: Baron & Budd P.C. (Dallas Texas) and Korein Tillery (St. Louis, Missouri)**

Served as a consulting expert for a Class Action defective product claim filed in Madison County, Illinois against Syngenta and five other manufacturers for atrazine. Evaluated health issues associated with atrazine and determined treatment cost for filtration of public drinking water supplies. Resulted in \$105 million dollar settlement.

**Client: The Buzbee Law Firm (Houston, Texas)**

Served as a consulting expert in catalyst release and refinery emissions cases against the BP Refinery in Texas City. A jury verdict for 10 employees exposed to catalyst via BP's irresponsible behavior.

**Client: Baron & Budd, P.C. (Dallas, Texas)**

Served as a consulting expert to calculate the Maximum Allowable Dose Level (MADL) and No Significant Risk Level (NSRL), based on Cal EPA and OEHHA guidelines, for Polychlorinated Biphenyls (PCBs) in fish oil dietary supplements.

**Client: Girardi Keese (Los Angeles, California)**

Served as an expert testifying on hydrocarbon exposure of a woman who worked on a fuel barge operated by Chevron. Demonstrated that the plaintiff was exposed to excessive amounts of benzene.

**Client: Mason & Cawood (Annapolis, Maryland) and Girardi & Keese (Los Angeles, California)**

Serving as an expert consultant on the Battlefield Golf Club fly ash disposal site in Chesapeake, VA, where arsenic, other metals and radionuclides are leaching into groundwater, and ash is blowing off-site onto the surrounding communities.

**Client: California Earth Mineral Corporation (Culver City, California)**

Evaluating the montmorillonite clay deposit located near El Centro, California. Working as a Defense Expert representing an individual who owns a 2,500 acre parcel that will potentially be seized by the United States Navy via eminent domain.

**Client: Matthews & Associates (Houston, Texas)**

Serving as an expert witness, preparing air model demonstrating residential exposure via emissions from fracking in natural gas wells in Duncan, Texas.

**Client: Baron & Budd P.C. (Dallas, Texas) and Korein Tillery (St. Louis, Missouri)**

Served as a consulting expert for analysis of private wells relating to litigation regarding compensation of private well owners for MTBE testing. Coordinated data acquisition and GIS analysis evaluating private well proximity to leaking underground storage tanks.

**Client: Lurie & Park LLP (Los Angeles, California)**

Served as an expert witness evaluating a vapor intrusion toxic tort case that resulted in a settlement. The Superfund site is a 4 1/2 mile groundwater plume of chlorinated solvents in Whittier, California.

**Client: Mason & Cawood (Annapolis, Maryland)**

Evaluated data from the Hess Gasoline Station in northern Baltimore, Maryland that had a release resulting in flooding of plaintiff's homes with gasoline-contaminated water, foul odor, and biofilm growth.

**Client: The Buzbee Law Firm (Houston, Texas)**

Evaluated air quality resulting from grain processing emissions in Muscatine, Iowa.

**Client: Anderson Kill & Olick, P.C. (Ventura, California)**

Evaluated historical exposure and lateral and vertical extent of contamination resulting from a ~150 million gallon Exxon Mobil tank farm located near Watts, California.

**Client: Packard Law Firm (Petaluma, California)**

Served as an expert witness, evaluated lead in Proposition 65 Case where various products were found to have elevated lead levels.

**Client: The Buzbee Law Firm (Houston, Texas)**

Evaluated data resulting from an oil spill in Port Arthur, Texas.

**Client: Nexsen Pruet, LLC (Charleston, South Carolina)**

Serving as expert in chlorine exposure in a railroad tank car accident where approximately 120,000 pounds of chlorine were released.

**Client: Girardi & Keese (Los Angeles, California)**

Serving as an expert investigating hydrocarbon exposure and property damage for ~600 individuals and ~280 properties in Carson, California where homes were constructed above a large tank farm formerly owned by Shell.

**Client: Brent Coon Law Firm (Cleveland, Ohio)**

Served as an expert, calculating an environmental exposure to benzene, PAHs, and VOCs from a Chevron Refinery in Hooven, Ohio. Conducted AERMOD modeling to determine cumulative dose.

**Client: Lundy Davis (Lake Charles, Louisiana)**

Served as consulting expert on an oil field case representing the lease holder of a contaminated oil field. Conducted field work evaluating oil field contamination in Sulphur, Louisiana. Property is owned by Conoco Phillips, but leased by Yellow Rock, a small oil firm.

**Client: Cox Cox Filo (Lake Charles, Louisiana)**

Served as testifying expert on a multimillion gallon oil spill in Lake Charles which occurred on June 19, 2006, resulting in hydrocarbon vapor exposure to hundreds of workers and residents. Prepared air model and calculated exposure concentration. Demonstrated that petroleum odor alone can result in significant health harms.

**Client: Cotchett Pitre & McCarthy (San Francisco, California)**

Served as testifying expert representing homeowners who unknowingly purchased homes built on an old oil field in Santa Maria, California. Properties have high concentrations of petroleum hydrocarbons in subsurface soils resulting in diminished property value.

**Client: Law Offices Of Anthony Liberatore P.C. (Los Angeles, California)**

Served as testifying expert representing individuals who rented homes on the Inglewood Oil Field in California. Plaintiffs were exposed to hydrocarbon contaminated water and air, and experienced health harms associated with the petroleum exposure.

**Client: Orange County District Attorney (Orange County, California)**

Coordinated a review of 143 ARCO gas stations in Orange County to assist the District Attorney's prosecution of CCR Title 23 and California Health and Safety Code violators.

**Client: Environmental Litigation Group (Birmingham, Alabama)**

Served as a testifying expert in a health effects case against ABC Coke/Drummond Company for polluting a community with PAHs, benzene, particulate matter, heavy metals, and coke oven emissions. Created air dispersion models and conducted attic dust sampling, exposure modeling, and risk assessment for plaintiffs.

**Client: Masry & Vitatoe (Westlake Village, California), Engstrom Lipscomb Lack (Los Angeles, California) and Baron & Budd P.C. (Dallas, Texas)**

Served as a consulting expert in Proposition 65 lawsuit filed against major oil companies for benzene and toluene releases from gas stations and refineries resulting in contaminated groundwater. Settlement included over \$110 million dollars in injunctive relief.

**Client: Tommy Franks Law Firm (Austin, Texas)**

Served as expert evaluating groundwater contamination which resulted from the hazardous waste injection program and negligent actions of Morton Thiokol and Rohm Hass. Evaluated drinking water contamination and community exposure.

**Client: Baron & Budd P.C. (Dallas, Texas) and Sher Leff (San Francisco, California)**

Served as consulting expert for several California cities that filed defective product cases against Dow Chemical and Shell for 1,2,3-trichloropropane groundwater contamination. Generated maps showing capture zones of impacted wells for various municipalities.



**Client: Weitz & Luxenberg (New York, New York)**

Served as expert on Property Damage and Nuisance claims resulting from emissions from the Countywide Landfill in Ohio. The landfill had an exothermic reaction or fire resulting from aluminum dross dumping, and the EPA fined the landfill \$10,000,000 dollars.

**Client: Baron & Budd P.C. (Dallas, Texas)**

Served as a consulting expert for a groundwater contamination case in Pensacola, Florida where fluorinated compounds contaminated wells operated by Escambia County.

**Client: Environmental Litigation Group (Birmingham, Alabama)**

Served as an expert on groundwater case where Exxon Mobil and Helena Chemical released ethylene dichloride into groundwater resulting in a large plume. Prepared report on the appropriate treatment technology and cost, and flaws with the proposed on-site remediation.

**Client: Environmental Litigation Group (Birmingham, Alabama)**

Served as an expert on air emissions released when a Bartlo Packaging Incorporated facility in West Helena, Arkansas exploded resulting in community exposure to pesticides and smoke from combustion of pesticides.

**Client: Omara & Padilla (San Diego, California)**

Served as a testifying expert on nuisance case against Nutro Dogfood Company that constructed a large dog food processing facility in the middle of a residential community in Victorville, California with no odor control devices. The facility has undergone significant modifications, including installation of a regenerative thermal oxidizer.

**Client: Environmental Litigation Group (Birmingham, Alabama)**

Serving as an expert on property damage and medical monitoring claims that have been filed against International Paper resulting from chemical emissions from facilities located in Bastrop, Louisiana; Prattville, Alabama; and Georgetown, South Carolina.

**Client: Estep and Shafer L.C. (Kingwood, West Virginia)**

Served as expert calculating acid emissions doses to residents resulting from coal-fired power plant emissions in West Virginia using various air models.

**Client: Watts Law Firm (Austin, Texas), Woodfill & Pressler (Houston, Texas) and Woska & Associates (Oklahoma City, Oklahoma)**

Served as testifying expert on community and worker exposure to CCA, creosote, PAHs, and dioxins/furans from a BNSF and Koppers Facility in Somerville, Texas. Conducted field sampling, risk assessment, dose assessment and air modeling to quantify exposure to workers and community members.

**Client: Environmental Litigation Group (Birmingham, Alabama)**

Served as expert regarding community exposure to CCA, creosote, PAHs, and dioxins/furans from a Louisiana Pacific wood treatment facility in Florala, Alabama. Conducted blood sampling and environmental sampling to determine environmental exposure to dioxins/furans and PAHs.

**Client: Sanders Law Firm (Colorado Springs, Colorado) and Vamvoras & Schwartzberg (Lake Charles, Louisiana)**

Served as an expert calculating chemical exposure to over 500 workers from large ethylene dichloride spill in Lake Charles, Louisiana at the Conoco Phillips Refinery.

**Client: Baron & Budd P.C. (Dallas, Texas)**

Served as consulting expert in a defective product lawsuit against Dow Agrosience focusing on Clopyralid, a recalcitrant herbicide that damaged numerous compost facilities across the United States.

**Client: Sullivan Papain Block McGrath & Cannavo (New York, New York) and The Cochran Firm (Dothan, Mississippi)**

Served as an expert regarding community exposure to metals, PAHs PCBs, and dioxins/furans from the burning of Ford paint sludge and municipal solid waste in Ringwood, New Jersey.

**Client: Rose, Klein & Marias LLP (Los Angeles, California)**

Served as an expert in 55 Proposition 65 cases against individual facilities in the Port of Los Angeles and Port of Long Beach. Prepared air dispersion and risk models to demonstrate that each facility emits diesel particulate matter that results in risks exceeding 1/100,000, hence violating the Proposition 65 Statute.

**Client: Rose, Klein & Marias LLP (Los Angeles, California) and Environmental Law Foundation (San Francisco, California)**

Served as an expert in a Proposition 65 case against potato chip manufacturers. Conducted an analysis of several brands of potato chips for acrylamide concentrations and found that all samples exceeded Proposition 65 No Significant Risk Levels.

**Client: Gonzales & Robinson (Westlake Village, California)**

Served as a testifying expert in a toxic tort case against Chevron (Ortho) for allowing a community to be contaminated with lead arsenate pesticide. Created air dispersion and soil vadose zone transport models, and evaluated bioaccumulation of lead arsenate in food.

**Client: Environment Now (Santa Monica, California)**

Served as expert for Environment Now to convince the State of California to file a nuisance claim against automobile manufactures to recover MediCal damages from expenditures on asthma-related health care costs.

**Client: Trutanich Michell (Long Beach, California)**

Served as expert representing San Pedro Boat Works in the Port of Los Angeles. Prepared air dispersion, particulate air dispersion, and storm water discharge models to demonstrate that Kaiser Bulk Loading is responsible for copper concentrate accumulating in the bay sediment.

**Client: Azurix of North America (Fort Myers, Florida)**

Provided expert opinions, reports and research pertaining to a proposed County Ordinance requiring biosolids applicators to measure VOC and odor concentrations at application sites' boundaries.

**Client: MCP Polyurethane (Pittsburg, Kansas)**

Provided expert opinions and reports regarding metal-laden landfill runoff that damaged a running track by causing the reversion of the polyurethane due to its catalytic properties.

## **Risk Assessment And Air Modeling**

**Client: Hager, Dewick & Zuengler, S.C. (Green Bay, Wisconsin)**

Conducted odor audit of rendering facility in Green Bay, Wisconsin.

**Client: ABT-Haskell (San Bernardino, California)**

Prepared air dispersion model for a proposed state-of-the-art enclosed compost facility. Prepared a traffic analysis and developed odor detection limits to predict 1, 8, and 24-hour off-site concentrations of sulfur, ammonia, and amine.

**Client: Jefferson PRP Group (Los Angeles, California)**

Evaluated exposure pathways for chlorinated solvents and hexavalent chromium for human health risk assessment of Los Angeles Academy (formerly Jefferson New Middle School) operated by Los Angeles Unified School District.

**Client: Covanta (Susanville, California)**

Prepared human health risk assessment for Covanta Energy focusing on agricultural worker exposure to caustic fertilizer.

**Client: CIWMB (Sacramento, California)**

Used dispersion models to estimate traveling distance and VOC concentrations downwind from a composting facility for the California Integrated Waste Management Board.

**Client: Carboquimeca (Bogotá, Columbia)**

Evaluated exposure pathways for human health risk assessment for a confidential client focusing on significant concentrations of arsenic and chlorinated solvents present in groundwater used for drinking water.

**Client: Navy Base Realignment and Closure Team (Treasure Island, California)**

Used Johnson-Ettinger model to estimate indoor air PCB concentrations and compared estimated values with empirical data collected in homes.

**Client: San Diego State University (San Diego, California)**

Measured CO<sub>2</sub> flux from soils amended with different quantities of biosolids compost at Camp Pendleton to determine CO<sub>2</sub> credit values for coastal sage under fertilized and non-fertilized conditions.

**Client: Navy Base Realignment and Closure Team (MCAS Tustin, California)**

Evaluated cumulative risk of a multiple pathway scenario for a child resident and a construction worker. Evaluated exposure to air and soil via particulate and vapor inhalation, incidental soil ingestion, and dermal contact with soil.

**Client: MCAS Miramar (San Diego, California)**

Evaluated exposure pathways of metals in soil by comparing site data to background data. Risk assessment incorporated multiple pathway scenarios assuming child resident and construction worker particulate and vapor inhalation, soil ingestion, and dermal soil contact.

**Client: Naval Weapons Station (Seal Beach, California)**

Used a multiple pathway model to generate dust emission factors from automobiles driving on dirt roads. Calculated bioaccumulation of metals, PCBs, dioxin congeners and pesticides to estimate human and ecological risk.

**Client: King County, Douglas County (Washington State)**

Measured PM<sub>10</sub> and PM<sub>2.5</sub> emissions from windblown soil treated with biosolids and a polyacrylamide polymer in Douglas County, Washington. Used Pilat Mark V impactor for measurement and compared data to EPA particulate regulations.

**Client: King County (Seattle, Washington)**

Created emission inventory for several compost and wastewater facilities comparing VOC, particulate, and fungi concentrations to NIOSH values estimating risk to workers and individuals at neighboring facilities.

## **Air Pollution Investigation and Remediation**

**Client: Republic Landfill (Santa Clarita, California)**

Managed a field investigation of odor around a landfill during 30+ events. Used hedonic tone, butanol scale, dilution-to-threshold values, and odor character to evaluate odor sources and character and intensity.

**Client: California Biomass (Victorville, California)**

Managed a field investigation of odor around landfill during 9+ events. Used hedonic tone, butanol scale, dilution-to-threshold values, and odor character to evaluate odor sources, character and intensity.

**Client: ABT-Haskell (Redlands, California)**

Assisted in permitting a compost facility that will be completely enclosed with a complex scrubbing system using acid scrubbers, base scrubbers, biofilters, heat exchangers and chlorine to reduce VOC emissions by 99 percent.

**Client: Synagro (Corona, California)**

Designed and monitored 30-foot by 20-foot by 6-foot biofilter for VOC control at an industrial composting facility in Corona, California to reduce VOC emissions by 99 percent.

**Client: Jeff Gage (Tacoma, Washington)**

Conducted emission inventory at industrial compost facility using GC/MS analyses for VOCs. Evaluated effectiveness of VOC and odor control systems and estimated human health risk.

**Client: Daishowa America (Port Angeles Mill, Washington)**

Analyzed industrial paper sludge and ash for VOCs, heavy metals and nutrients to develop a land application program. Metals were compared to federal guidelines to determine maximum allowable land application rates.

**Client: Jeff Gage (Puyallup, Washington)**

Measured effectiveness of biofilters at composting facility and conducted EPA dispersion models to estimate traveling distance of odor and human health risk from exposure to volatile organics.

## **Surface Water, Groundwater, and Wastewater Investigation/Remediation**

**Client: Confidential (Downey, California)**

Managed groundwater investigation to determine horizontal extent of 1,000 foot TCE plume associated with a metal finishing shop.

**Client: Confidential (West Hollywood, California)**

Designing soil vapor extraction system that is currently being installed for confidential client. Managing groundwater investigation to determine horizontal extent of TCE plume associated with dry cleaning.

**Client: Synagro Technologies (Sacramento, California)**

Managed groundwater investigation to determine if biosolids application impacted salinity and nutrient concentrations in groundwater.

**Client: Navy Base Realignment and Closure Team (Treasure Island, California)**

Assisted in the design and remediation of PCB, chlorinated solvent, hydrocarbon and lead contaminated groundwater and soil on Treasure Island. Negotiated screening levels with DTSC and Water Board. Assisted in the preparation of FSP/QAPP, RI/FS, and RAP documents and assisted in CEQA document preparation.

**Client: Navy Base Realignment and Closure Team (MCAS Tustin, California)**

Assisted in the design of groundwater monitoring systems for chlorinated solvents at Tustin MCAS. Contributed to the preparation of FS for groundwater treatment.

**Client: Mission Cleaning Facility (Salinas, California)**

Prepared a RAP and cost estimate for using an oxygen releasing compound (ORC) and molasses to oxidize diesel fuel in soil and groundwater at Mission Cleaning in Salinas.

**Client: King County (Washington)**

Established and monitored experimental plots at a US EPA Superfund Site in wetland and upland mine tailings contaminated with zinc and lead in Smelterville, Idaho. Used organic matter and pH adjustment for wetland remediation and erosion control.

**Client: City of Redmond (Richmond, Washington)**

Collected storm water from compost-amended and fertilized turf to measure nutrients in urban runoff. Evaluated effectiveness of organic matter-lined detention ponds on reduction of peak flow during storm events. Drafted compost amended landscape installation guidelines to promote storm water detention and nutrient runoff reduction.

**Client: City of Seattle (Seattle, Washington)**

Measured VOC emissions from Renton wastewater treatment plant in Washington. Ran GC/MS, dispersion models, and sensory panels to characterize, quantify, control and estimate risk from VOCs.

**Client: Plumas County (Quincy, California)**

Installed wetland to treat contaminated water containing 1% copper in an EPA Superfund site. Revegetated 10 acres of acidic and metal laden sand dunes resulting from hydraulic mining. Installed and monitored piezometers in wetland estimating metal loading.

**Client: Adams Egg Farm (St. Kitts, West Indies)**

Designed, constructed, and maintained 3 anaerobic digesters at Springfield Egg Farm, St. Kitts. Digesters treated chicken excrement before effluent discharged into sea. Chicken waste was converted into methane cooking gas.

**Client: BLM (Kremmling, Colorado)**

Collected water samples for monitoring program along upper stretch of the Colorado River. Rafted along river and protected water quality by digging and repairing latrines.

## **Soil Science and Restoration Projects**

**Client: Hefner, Stark & Marois, LLP (Sacramento, California)**

Facilitated in assisting Hefner, Stark & Marois, LLP in working with the Regional Water Quality board to determine how to utilize Calcium Particulate as a by-product of processing sugar beets.

**Client: Kinder Morgan (San Diego County, California)**

Designed and monitored the restoration of a 110-acre project on Camp Pendleton along a 26-mile pipeline. Managed crew of 20, planting coastal sage, riparian, wetland, native grassland, and marsh ecosystems. Negotiated with the CDFW concerning species planting list and success standards.

**Client: NAVY BRAC (Orote Landfill, Guam)**

Designed and monitored pilot landfill cap mimicking limestone forest. Measured different species' root-penetration into landfill cap. Plants were used to evapotranspire water, reducing water leaching through soil profile.

**Client: LA Sanitation District Puente Hills Landfill (Whittier, California)**

Monitored success of upland and wetland mitigation at Puente Hills Landfill operated by Sanitation Districts of Los Angeles. Negotiated with the Army Corps of Engineers and CDFG to obtain an early sign-off.

**Client: City of Escondido (Escondido, California)**

Designed, managed, installed, and monitored a 20-acre coastal sage scrub restoration project at Kit Carson Park, Escondido, California.

**Client: Home Depot (Encinitas, California)**

Designed, managed, installed and monitored a 15-acre coastal sage scrub and wetland restoration project at Home Depot in Encinitas, California.

**Client: Alvarado Water Filtration Plant (San Diego, California)**

Planned, installed and monitored 2-acre riparian and coastal sage scrub mitigation in San Diego California.

**Client: Monsanto and James River Corporation (Clatskanie, Oregon)**

Served as a soil scientist on a 50,000-acre hybrid poplar farm. Worked on genetically engineering study of Poplar trees to see if glyphosate resistant poplar clones were economically viable.

**Client: World Wildlife Fund (St. Kitts, West Indies)**

Managed 2-year biodiversity study, quantifying and qualifying the various flora and fauna in St. Kitts' expanding volcanic rainforest. Collaborated with skilled botanists, ornithologists and herpetologists.

## **Publications**

Chen, J. A., Zapata, A R., Sutherland, A. J., Molmen, D. R., Chow, B. S., Wu, L. E., **Rosenfeld, P. E.**, Hesse, R. C., (2012) Sulfur Dioxide and Volatile Organic Compound Exposure To A Community In Texas City Texas Evaluated Using AERMOD and Empirical Data. American Journal of Environmental Science, 2012, 8 (6), 622-632

Rosenfeld, P.E. & Feng, L. (2011). *The Risks of Hazardous Waste*, Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & Rosenfeld, P.E. (2011). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Agrochemical Industry*, Amsterdam: Elsevier Publishing.

Gonzalez, J., Feng, L., Sutherland, A., Waller, C., Sok, H., Hesse, R., Rosenfeld, P. (2011). PCBs and Dioxins/Furans in Attic Dust Collected Near Former PCB Production and Secondary Copper Facilities in Sauget, IL. *Procedia Environmental Sciences* 4(2011):113-125.

Feng, L., Wu, C., Tam, L., Sutherland, A.J., Clark, J.J., Rosenfeld, P.E., (2010). Dioxin and Furan Blood Lipid and Attic Dust Concentrations in Populations Living Near Four Wood Treatment Facilities in the United States. *Journal of Environmental Health* 73(6):34-46.

Cheremisinoff, N.P., & Rosenfeld, P.E. (2010). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Wood and Paper Industries*, Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & Rosenfeld, P.E. (2009). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Petroleum Industry*, Amsterdam: Elsevier Publishing.

Wu, C., Tam, L., Clark, J., Rosenfeld, P. (2009). 'Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States', in Brebbia, C.A. and Popov, V., eds., *Air Pollution XVII: Proceedings of the Seventeenth International Conference on Modelling, Monitoring and Management of Air Pollution*, Tallinn, Estonia. 20-22 July, 2009, Southampton, Boston. WIT Press.

Tam L. K., Wu C. D., Clark J. J. and Rosenfeld, P.E. (2008) A Statistical Analysis Of Attic Dust And Blood Lipid Concentrations Of Tetrachloro-p-Dibenzodioxin (TCDD) Toxicity Equivalency Quotients (TEQ) In Two Populations Near Wood Treatment Facilities. *Organohalogen Compounds*, Volume 70 (2008) page 002254.

Tam L. K., Wu C. D., Clark J. J. and Rosenfeld, P.E. (2008) Methods For Collect Samples For Assessing Dioxins And Other Environmental Contaminants In Attic Dust: A Review. *Organohalogen Compounds*, Volume 70 (2008) page 000527.

Hensley, A.R. A. Scott, J. J. J. Clark, P. E. Rosenfeld (2007) "Attic Dust and Human Blood Samples Collected near a Former Wood Treatment Facility" *Environmental Research*. 105, pp 194-197.

Rosenfeld, P.E., J. J. J. Clark, A. R. Hensley, M. Suffet. (2007) "The Use of an Odor Wheel Classification for Evaluation of Human Health Risk Criteria for Compost Facilities" –*Water Science & Technology* 55(5): 345-357.

Rosenfeld, P. E., M. Suffet. (2007) "The Anatomy Of Odour Wheels For Odours Of Drinking Water, Wastewater, Compost And The Urban Environment " *Water Science & Technology* 55(5): 335-344.

Sullivan, P. J. Clark, J.J.J., Agardy, F. J., Rosenfeld, P.E., (2007) "Toxic Legacy, Synthetic Toxins in the Food, Water, and Air in American Cities," Elsevier Publishing, Boston Massachusetts.

Rosenfeld P.E., and Suffet, I.H. (Mel) (2007) "Anatomy Of An Odor Wheel" *Water Science and Technology*, In Press.

Rosenfeld, P.E., Clark, J.J.J., Hensley A.R., Suffet, I.H. (Mel) (2007) "The use of an odor wheel classification for evaluation of human health risk criteria for compost facilities." *Water Science And Technology*, In Press.

Hensley A.R., Scott, A., Rosenfeld P.E., Clark, J.J.J. (2006) "Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility." *The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006*, August 21 – 25, 2006. Radisson SAS Scandinavia Hotel in Oslo Norway.

**Rosenfeld, P.E.,** and Suffet I.H. (2004) "Control of Compost Odor Using High Carbon Wood Ash", Water Science and Technology, Vol. 49, No. 9. pp. 171-178.

**Rosenfeld, P.E.,** Clark J. J. and Suffet, I.H. (2004) "Value of and Urban Odor Wheel." (2004). WEFTEC 2004. New Orleans, October 2 - 6, 2004.

**Rosenfeld, P.E.,** and Suffet, I.H. (2004) "Understanding Odorants Associated With Compost, Biomass Facilities, and the Land Application of Biosolids" Water Science and Technology. Vol. 49, No. 9. pp 193-199.

**Rosenfeld, P.E.,** and Suffet I.H. (2004) "Control of Compost Odor Using High Carbon Wood Ash", Water Science and Technology, Vol. 49, No. 9. pp. 171-178.

**Rosenfeld, P. E.,** Grey, M. A., Sellew, P. (2004) Measurement of Biosolids Odor and Odorant Emissions from Windrows, Static Pile and Biofilter. Water Environment Research. 76 (4): 310-315 JUL-AUG 2004.

**Rosenfeld, P. E.,** Grey, M., (2003) Two stage biofilter for biosolids composting odor control. Seventh International In Situ And On Site Bioremediation Symposium. Batelle Conference Orlando Florida. June 2 and June 6, 2003.

**Rosenfeld, P.E.,** Grey, M and Suffet, M. 2002. "Controlling Odors Using High Carbon Wood Ash." Biocycle, March 2002, Page 42.

**Rosenfeld, P.E.,** Grey, M and Suffet, M. (2002). "Compost Demonstration Project, Sacramento, California Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility Integrated Waste Management Board Public Affairs Office, Publications Clearinghouse (MS-6), Sacramento, CA Publication #442-02-008. April 2002.

**Rosenfeld, P.E.,** and C.L. Henry. 2001. Characterization of odor emissions from three different biosolids. Water Soil and Air pollution. Vol. 127 Nos. 1-4, pp. 173-191.

**Rosenfeld, P.E.,** and Henry C. L., 2000. Wood ash control of odor emissions from biosolids application. Journal of Environmental Quality. 29:1662-1668.

**Rosenfeld, P.E.,** C.L. Henry and D. Bennett. 2001. Wastewater dewatering polymer affect on biosolids odor emissions and microbial activity. Water Environment Research. 73: 363-367.

**Rosenfeld, P.E.,** and C.L. Henry. 2001. Activated Carbon and Wood Ash Sorption of Wastewater, Compost, and Biosolids Odorants Water Environment Research, 73: 388-392.

**Rosenfeld, P.E.,** and Henry C. L., 2001. High carbon wood ash effect on biosolids microbial activity and odor. Water Environment Research. Volume 131 No. 1-4, pp. 247-262.

**Rosenfeld, P.E,** C.L. Henry, R. Harrison. 1998. Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Bellevue Washington.

Chollack, T. and **P. Rosenfeld.** 1998. Compost Amendment Handbook For Landscaping. Prepared for and distributed by the City of Redmond, Washington State.

**P. Rosenfeld.** 1992. The Mount Liamuiga Crater Trail. Heritage Magazine of St. Kitts, Vol. 3 No. 2.

**P. Rosenfeld.** 1993. High School Biogas Project to Prevent Deforestation On St. Kitts. Biomass Users Network, Vol. 7, No. 1, 1993.

**P. Rosenfeld.** 1992. British West Indies, St. Kitts. Surf Report, April issue.

**P. Rosenfeld.** 1998. Characterization, Quantification, and Control of Odor Emissions From Biosolids Application To Forest Soil. Doctoral Thesis. University of Washington College of Forest Resources.

**P. Rosenfeld.** 1994. Potential Utilization of Small Diameter Trees On Sierra County Public Land. Masters thesis reprinted by the Sierra County Economic Council. Sierra County, California.

**P. Rosenfeld.** 1991. How to Build a Small Rural Anaerobic Digester & Uses Of Biogas In The First And Third World. Bachelors Thesis. University of California.

England Environmental Agency, 2002. Landfill Gas Control Technologies. Publishing Organization Environment Agency, Rio House, Waterside Drive, Aztec West, Almondsbury BRISTOL, BS32 4UD.

## **Presentations**

Sok, H.L.; Waller, C.C.; Feng, L.; Gonzalez, J.; Sutherland, A.J.; Wisdom-Stack, T.; Sahai, R.K.; Hesse, R.C.; **Rosenfeld, P.E.** "Atrazine: A Persistent Pesticide in Urban Drinking Water." Urban Environmental Pollution, Boston, MA, June 20-23, 2010.

Feng, L.; Gonzalez, J.; Sok, H.L.; Sutherland, A.J.; Waller, C.C.; Wisdom-Stack, T.; Sahai, R.K.; La, M.; Hesse, R.C.; **Rosenfeld, P.E.** "Bringing Environmental Justice to East St. Louis, Illinois." Urban Environmental Pollution, Boston, MA, June 20-23, 2010.

**Rosenfeld, P.E.** (2009) "Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States" Presentation at the 2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting, April 19-23, 2009. Tuscon, AZ.

**Rosenfeld, P.E.** (2009) "Cost to Filter Atrazine Contamination from Drinking Water in the United States" Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States" Presentation at the 2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting, April 19-23, 2009. Tuscon, AZ.

**Rosenfeld, P. E.** (2007) "Moss Point Community Exposure To Contaminants From A Releasing Facility" Platform Presentation at the 23<sup>rd</sup> Annual International Conferences on Soils Sediment and Water, October 15-18, 2007. University of Massachusetts, Amherst MA.

**Rosenfeld, P. E.** (2007) "The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant" Platform Presentation at the 23<sup>rd</sup> Annual International Conferences on Soils Sediment and Water, October 15-18, 2007. University of Massachusetts, Amherst MA.

**Rosenfeld, P. E.** (2007) "Somerville Community Exposure To Contaminants From Wood Treatment Facility Emissions" Poster Presentation at the 23<sup>rd</sup> Annual International Conferences on Soils Sediment and Water, October 15-18, 2007. University of Massachusetts, Amherst MA.

**Rosenfeld P. E.** "Production, Chemical Properties, Toxicology, & Treatment Case Studies of 1,2,3-Trichloropropane (TCP)" – Platform Presentation at the Association for Environmental Health and Sciences (AEHS) Annual Meeting, San Diego, CA, 3/2007.

**Rosenfeld P. E.** "Blood and Attic Sampling for Dioxin/Furan, PAH, and Metal Exposure in Florala, Alabama" – Platform Presentation at the AEHS Annual Meeting, San Diego, CA, 3/2007.

Hensley A.R., Scott, A., **Rosenfeld P.E.**, Clark, J.J.J. (2006) "Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility." APHA 134 Annual Meeting & Exposition, Boston Massachusetts. November 4 to 8<sup>th</sup>, 2006.



**Paul Rosenfeld Ph.D.** "Fate, Transport and Persistence of PFOA and Related Chemicals." Mealey's C8/PFOA Science, Risk & Litigation Conference" October 24, 25. The Rittenhouse Hotel, Philadelphia.

**Paul Rosenfeld Ph.D.** "Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation PEMA Emerging Contaminant Conference. September 19. Hilton Hotel, Irvine California.

**Paul Rosenfeld Ph.D.** "Fate, Transport, Toxicity, And Persistence of 1,2,3-TCP." PEMA Emerging Contaminant Conference. September 19. Hilton Hotel in Irvine, California.

**Paul Rosenfeld Ph.D.** "Fate, Transport and Persistence of PDBEs." Mealey's Groundwater Conference. September 26, 27. Ritz Carlton Hotel, Marina Del Ray, California.

**Paul Rosenfeld Ph.D.** "Fate, Transport and Persistence of PFOA and Related Chemicals." International Society of Environmental Forensics: Focus On Emerging Contaminants. June 7,8. Sheraton Oceanfront Hotel, Virginia Beach, Virginia.

**Paul Rosenfeld Ph.D.** "Rate Transport, Persistence and Toxicology of PFOA and Related Perfluorochemicals". 2005 National Groundwater Association Ground Water And Environmental Law Conference. July 21-22, 2005. Wyndham Baltimore Inner Harbor, Baltimore Maryland.

**Paul Rosenfeld Ph.D.** "Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation." 2005 National Groundwater Association Ground Water And Environmental Law Conference. July 21-22, 2005. Wyndham Baltimore Inner Harbor, Baltimore Maryland.

**Paul Rosenfeld, Ph.D.** and James Clark Ph.D. and Rob Hesse R.G. Tert-butyl Alcohol Liability and Toxicology, A National Problem and Unquantified Liability. National Groundwater Association. Environmental Law Conference. May 5-6, 2004. Congress Plaza Hotel, Chicago Illinois.

**Paul Rosenfeld, Ph.D.**, 2004. Perchlorate Toxicology. Presentation to a meeting of the American Groundwater Trust. March 7<sup>th</sup>, 2004. Pheonix Arizona.

Hagemann, M.F., **Paul Rosenfeld, Ph.D.** and Rob Hesse, 2004. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal representatives, Parker, AZ.

**Paul Rosenfeld, Ph.D.** A National Damage Assessment Model For PCE and Dry Cleaners. Drycleaner Symposium. California Ground Water Association. Radison Hotel, Sacramento, California. April 7, 2004.

**Paul Rosenfeld, Ph.D.** and James Clark Ph.D. Understanding Historical Use, Chemical Properties, Toxicity and Regulatory Guidance of 1,4 Dioxane. National Groundwater Association. Southwest Focus Conference. Water Supply and Emerging Contaminants. February 20-21, 2003. Hyatt Regency Phoenix Arizona.

**Paul Rosenfeld, Ph.D.** Underground Storage Tank Litigation and Remediation. California CUPA Forum. Marriott Hotel. Anaheim California. February 6-7, 2003.

**Paul Rosenfeld, Ph.D.** Underground Storage Tank Litigation and Remediation. EPA Underground Storage Tank Roundtable. Sacramento California. October 23, 2002.

**Rosenfeld, P.E.** and Suffet, M. 2002. Understanding Odor from Compost, Wastewater and Industrial Processes. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association. Barcelona Spain. October 7- 10.

**Rosenfeld, P.E.** and Suffet, M. 2002. Using High Carbon Wood Ash to Control Compost Odor. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association. Barcelona Spain. October 7- 10.

**Rosenfeld, P.E. and Grey, M. A. 2002.** Biocycle Composting For Coastal Sage Restoration. Northwest Biosolids Management Association. Vancouver Washington. September 22-24.

**Rosenfeld, P.E. and Grey, M. A. 2002.** Soil Science Society Annual Conference. Indianapolis, Maryland. November 11-14.

**Rosenfeld, P.E. 2000.** Two stage biofilter for biosolids composting odor control. Water Environment Federation. Anaheim California. September 16, 2000.

**Rosenfeld, P. E. 2000.** Wood ash and biofilter control of compost odor. Biofest. October 16, 2000. Ocean Shores, California.

**Rosenfeld, P. E. 2000.** Bioremediation Using Organic Soil Amendments. California Resource Recovery Association. Sacramento California.

**Rosenfeld, P.E., C.L. Henry, R. Harrison. 1998.** Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Bellevue Washington.

**Rosenfeld, P.E., and C.L. Henry. 1999.** An evaluation of ash incorporation with biosolids for odor reduction. Soil Science Society of America. Salt Lake City Utah.

**Rosenfeld, P.E., C.L. Henry, R. Harrison. 1998.** Comparison of Microbial Activity and Odor Emissions from Three Different Biosolids Applied to Forest Soil. Brown and Caldwell, Seattle Washington.

**Rosenfeld, P.E., C.L. Henry. 1998.** Characterization, Quantification, and Control of Odor Emissions from Biosolids Application To Forest Soil. Biofest Lake Chelan, Washington.

**Rosenfeld, P.E., C.L. Henry, R. B. Harrison, and R. Dills. 1997.** Comparison of Odor Emissions From Three Different Biosolids Applied to Forest Soil. Soil Science Society of America, Anaheim California.

## **Professional History**

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Founding And Managing Partner  
UCLA School of Public Health; 2007 to 2010; Lecturer (Asst Res)  
UCLA School of Public Health; 2003 to 2006; Adjunct Professor  
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator  
UCLA Institute of the Environment, 2001-2002; Research Associate  
Komex H<sub>2</sub>O Science, 2001 to 2003; Senior Remediation Scientist  
National Groundwater Association, 2002-2004; Lecturer  
San Diego State University, 1999-2001; Adjunct Professor  
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager  
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager  
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor  
King County, Seattle, 1996 – 1999; Scientist  
James River Corp., Washington, 1995-96; Scientist  
Big Creek Lumber, Davenport, California, 1995; Scientist  
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist  
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist  
Bureau of Land Management, Kremmling Colorado 1990; Scientist

## **Teaching Experience**

**UCLA Department of Environmental Health (Summer 2003 through 2010)** Taught Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focuses on the health effects of environmental contaminants.

**National Ground Water Association, Successful Remediation Technologies.** Custom Course In Sante Fe, New Mexico. May 21, 2002. Focused on fate and transport of fuel contaminants associated with underground storage tanks.

**National Ground Water Association; Successful Remediation Technologies** Course in Chicago Illinois. April 1, 2002. Focused on fate and transport of contaminants associated with Superfund and RCRA sites.

**California Integrated Waste Management Board,** April and May, 2001. Alternative Landfill Caps Seminar in San Diego, Ventura, and San Francisco. Focused on both prescriptive and innovative landfill cover design.

**UCLA Department of Environmental Engineering,** February 5 2002 Seminar on Successful Remediation Technologies focusing on Groundwater Remediation.

**University Of Washington, Soil Science Program,** Teaching Assistant for several courses including: Soil Chemistry, Organic Soil Amendments, and Soil Stability.

**U.C. Berkeley, Environmental Science Program** Teaching Assistant for Environmental Science 10.

## **Academic Grants Awarded**

**California Integrated Waste Management Board.** \$41,000 grant awarded to UCLA Institute of the Environment. Goal: To investigate effect of high carbon wood ash on volatile organic emissions from compost. 2001.

**Synagro Technologies, Corona California:** \$10,000 grant awarded to San Diego State University. Goal: investigate effect of biosolids for restoration and remediation of degraded coastal sage soils. 2000.

**King County, Department of Research and Technology, Washington State.** \$100,000 grant awarded to University of Washington: Goal: To investigate odor emissions from biosolids application and the effect of polymers and ash on VOC emissions. 1998.

**Northwest Biosolids Management Association, Washington State.** \$20,000 grant awarded to investigate effect of polymers and ash on VOC emissions from biosolids. 1997.

**James River Corporation, Oregon:** \$10,000 grant was awarded to investigate the success of genetically engineered Poplar trees with resistance to round-up. 1996.

**United State Forest Service, Tahoe National Forest:** \$15,000 grant was awarded to investigating fire ecology of the Tahoe National Forest. 1995.

**Kellogg Foundation, Washington D.C.** \$500 grant was awarded to construct a large anaerobic digester on St. Kitts in West Indies. 1993.

## **Cases that Dr. Rosenfeld Provided Deposition or Trial Testimony**

- In the Court of Common Pleas of Tuscarawas County Ohio  
John Michael Abicht, et al., *Plaintiffs*, vs. Republic Services, Inc., et al., *Defendants*  
Case Number: 2008 CT 10 0741 (Cons. w/ 2009 CV 10 0987)
- In the Court of Common Pleas for the Second Judicial Circuit, State of South Carolina, County of Aiken  
David Anderson, et al., *Plaintiffs*, vs. Norfolk Southern Corporation, et al., *Defendants*.  
Case Number: 2007-CP-02-1584
- In the Circuit Court of Jefferson County Alabama  
Jaeanette Moss Anthony, et al., *Plaintiffs*, vs. Drummond Company Inc., et al., *Defendants*  
Civil action No. CV 2008-2076
- In the Ninth Judicial District Court, Parish of Rapides, State of Louisiana  
Roger Price, et al., *Plaintiffs*, vs. Roy O. Martin, L.P., et al., *Defendants*.  
Civil Suit Number 224,041 Division G
- In the United States District Court, Western District Lafayette Division  
Ackle et al., *Plaintiffs*, vs. Citgo Petroleum Corporation, et al., *Defendants*.  
Case Number 2:07CV1052
- In the United States District Court for the Southern District of Ohio  
Carolyn Baker, et al., *Plaintiffs*, vs. Chevron Oil Company, et al., *Defendants*.  
Case Number 1:05 CV 227
- In the Fourth Judicial District Court, Parish of Calcasieu, State of Louisiana  
Craig Steven Arabie, et al., *Plaintiffs*, vs. Citgo Petroleum Corporation, et al., *Defendants*.  
Case Number 07-2738 G
- In the Fourteenth Judicial District Court, Parish of Calcasieu, State of Louisiana  
Leon B. Brydels, *Plaintiffs*, vs. Conoco, Inc., et al., *Defendants*.  
Case Number 2004-6941 Division A
- In the District Court of Tarrant County, Texas, 153<sup>rd</sup> Judicial District  
Linda Faust, *Plaintiff*, vs. Burlington Northern Santa Fe Rail Way Company, Witco Chemical Corporation  
A/K/A Witco Corporation, Solvents and Chemicals, Inc. and Koppers Industries, Inc., *Defendants*.  
Case Number 153-212928-05
- In the Superior Court of the State of California in and for the County of San Bernardino  
Leroy Allen, et al., *Plaintiffs*, vs. Nutro Products, Inc., a California Corporation and DOES 1 to 100,  
inclusive, *Defendants*.  
John Loney, Plaintiff, vs. James H. Didion, Sr.; Nutro Products, Inc.; DOES 1 through 20, inclusive,  
*Defendants*.  
Case Number VCVVS044671
- In the United States District Court for the Middle District of Alabama, Northern Division  
James K. Benefield, et al., *Plaintiffs*, vs. International Paper Company, *Defendant*.  
Civil Action Number 2:09-cv-232-WHA-TFM
- In the Superior Court of the State of California in and for the County of Los Angeles  
Leslie Hensley and Rick Hensley, *Plaintiffs*, vs. Peter T. Hoss, as trustee on behalf of the Cone Fee Trust;  
Plains Exploration & Production Company, a Delaware corporation; Rayne Water Conditioning, Inc., a  
California corporation; and DOES 1 through 100, *Defendants*.  
Case Number SC094173

In the Superior Court of the State of California in and for the County of Santa Barbara, Santa Maria Branch  
Clifford and Shirley Adelhelm, et al., all individually, *Plaintiffs*, vs. Unocal Corporation, a Delaware  
Corporation; Union Oil Company of California, a California corporation; Chevron Corporation, a  
California corporation; ConocoPhillips, a Texas corporation; Kerr-McGee Corporation, an Oklahoma  
corporation; and DOES 1 through 100, *Defendants*.

Case Number 1229251 (Consolidated with case number 1231299)

In the United States District Court for Eastern District of Arkansas, Eastern District of Arkansas  
Harry Stephens Farms, Inc, and Harry Stephens, individual and as managing partner of Stephens  
Partnership, *Plaintiffs*, vs. Helena Chemical Company, and Exxon Mobil Corp., successor to Mobil  
Chemical Co., *Defendants*.

Case Number 2:06-CV-00166 JMM (Consolidated with case number 4:07CV00278 JMM)

In the United States District Court for the Western District of Arkansas, Texarkana Division  
Rhonda Brasel, et al., *Plaintiffs*, vs. Weyerhaeuser Company and DOES 1 through 100, *Defendants*.  
Civil Action Number 07-4037

In The Superior Court of the State of California County of Santa Cruz  
Constance Acevedo, et al. *Plaintiffs* Vs. California Spray Company, et al. *Defendants*  
Case No CV 146344

In the District Court of Texas 21<sup>st</sup> Judicial District of Burleson County  
Dennis Davis, *Plaintiff*, vs. Burlington Northern Santa Fe Rail Way Company, *Defendant*.  
Case Number 25,151

In the United States District Court of Southern District of Texas Galveston Division  
Kyle Cannon, Eugene Donovan, Genaro Ramirez, Carol Sassler, and Harvey Walton, each Individually and  
on behalf of those similarly situated, *Plaintiffs*, vs. BP Products North America, Inc., *Defendant*.  
Case 3:10-cv-00622



Technical Consultation, Data Analysis and  
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**Matthew F. Hagemann, P.G., C.Hg., QSD, QSP**

Geologic and Hydrogeologic Characterization  
Industrial Stormwater Compliance  
Investigation and Remediation Strategies  
Litigation Support and Testifying Expert  
CEQA Review

**Education:**

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.

B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

**Professional Certifications:**

California Professional Geologist

California Certified Hydrogeologist

Qualified SWPPP Developer and Practitioner

**Professional Experience:**

Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2014;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

**Senior Regulatory and Litigation Support Analyst:**

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of over 100 environmental impact reports since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, Valley Fever, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at industrial facilities.
- Manager of a project to provide technical assistance to a community adjacent to a former Naval shipyard under a grant from the U.S. EPA.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.



- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

#### **Executive Director:**

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

#### **Hydrogeology:**

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

#### Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, *Oxygenates in Water: Critical Information and Research Needs*.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.