

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

DOCKET	
08-AFC-2	
DATE	MAR 09 2010
RECD.	MAR 09 2010

In the Matter of:

Beacon Solar, LLC's)
Application for Certification of the) Docket No. 08-AFC-2
Beacon Solar Energy Project)
_____)

BEACON SOLAR, LLC'S REBUTTAL TESTIMONY

March 9, 2010

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**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION
OF THE STATE OF CALIFORNIA**

**APPLICATION FOR CERTIFICATION FOR
THE BEACON SOLAR ENERGY PROJECT**

DOCKET NO. 08-AFC-2

AMENDED APPLICANT'S EXHIBIT LIST - BY TOPIC AREA

MARCH 9, 2010

Ex. No.	Date	Title	Subject	Sponsor
Executive Summary				
1	3/13/2008	AFC Section 1.0: Executive Summary	ES	Kenny Stein
58	6/11/2008	Slide Presentation From Informational Hearing	ES	Scott Busa
77	9/19/2008	Responses to Questions From Rancho Seco Residents, Set One	ES	Meg Russell
93	12/5/2008	Responses to Questions From Rancho Seco Residents, Set Two	ES	Meg Russell
124	5/1/2009	PSA Comments, Introduction	ES	Kenny Stein
125	5/1/2009	PSA Comments, Executive Summary	ES	Scott Busa
279		Declaration of Kenneth Stein: Executive Summary	ES	Kenny Stein
289		Declaration of Meg Russell: Executive Summary	ES	Meg Russell
309		Declaration of Scott Busa: Executive Summary	ES	Scott Busa
322	3/9/2010	Rebuttal Testimony of Kenneth Stein on Overriding Considerations	ES	Kenneth Stein
Project Description				
2	3/13/2008	AFC Section 2.0: Project Description	PD	Duane McCloud
3	3/13/2008	AFC Section 3.0: Closure	PD	Duane McCloud
5	3/13/2008	AFC Section 5.1: General Environmental Information	PD	Kenny Stein
23	3/13/2008	AFC Appendix A: Surrounding Properties Assessor's Parcel Nos./Property Owners	PD	Kenny Stein
45	3/13/2008	AFC Appendix K.3: Southern California Gas Company Correspondence	PD	Scott Busa
103	1/20/2009	Confidential - Beacon Solar Energy Project Revenue Data	PD	Scott Busa
126	5/1/2009	PSA Comments, Project Description	PD	Scott Busa
246		Declaration of Duane McCloud: Project Description	PD	Duane McCloud

Ex. No.	Date	Title	Subject	Sponsor
280		Declaration of Kenneth Stein: Project Description	PD	Kenny Stein
310		Declaration of Scott Busa: Project Description	PD	Scott Busa
Air Quality				
6	3/13/2008	AFC Section 5.2: Air Quality	AIR	Sara Head
33	3/13/2008	AFC Appendix E: Air Quality Supporting Documentation	AIR	Sara Head
34	3/13/2008	AFC Appendix E.4 Air Quality Modeling Files CD	AIR	Sara Head
50	3/13/2008	Application For FDOC	AIR	Sara Head/Russ Kingsley
51	4/8/2008	Data Adequacy Supplement, Air Quality	AIR	Sara Head
60	7/16/2008	Responses to CEC Data Requests 1-3 & 7-12	AIR	Sara Head
61	7/16/2008	Responses to CEC Data Requests, Attachment DR-10	AIR	Sara Head
72	8/18/2008	Supplemental Responses to CEC Data Requests 4, 5, 6, & 12, & Attachment DR-5	AIR	Sara Head
96	12/12/2008	Email from Sara to Will Walters on Waste Loadout	AIR	Sara Head
99	1/6/2009	Construction Greenhouse Gas Emissions Calculations	AIR	Sara Head / Howard Balentine
113	4/8/2009	PPSA Comments, Section IIA: Air Quality	AIR	Sara Head
128	5/1/2009	PSA Comments, Air Quality	AIR	Sara Head
163	6/19/2009	PDR Section 2.1.9: Solar Field Maintenance Vehicles	AIR	Duane McCloud
170	6/19/2009	PDR Section 4.1.1: Air Quality	AIR	Sara Head
176	6/19/2009	PDR Section 4.2.1: Air Quality and Public Health Impacts	AIR	Sara Head
204	6/19/2009	PDR Attachment 7a: Construction Emissions Related to Emergency Access Road	AIR	Sara Head
205	6/19/2009	PDR Attachment 7b: Operational Emissions Related to Propane Deliveries and Use	AIR	Sara Head
206	6/19/2009	PDR Attachment 7c: Boiler Manufacturer's Specifications	AIR	Sara Head
207	6/19/2009	PDR Attachment 7d: Additional Air Quality Impact Analyses	AIR	Sara Head
209	6/22/2009	Air Modeling Files Related to Project Design Refinements	AIR	Sara Head
211	7/2/2009	Revised Application for FDOC	AIR	Sara Head/Russ Kingsley
212	7/16/2009	Email from K. Stein Regarding Maintenance Vehicle Comparisons	AIR	Kenny Stein/Glen King

Ex. No.	Date	Title	Subject	Sponsor
214	7/20/2009	Response to Air Quality Questions From Workshop	AIR	Sara Head
232	8/1/2009	KCAPCD Revised FDOC	AIR	Sara Head/Russ Kingsley
247		Declaration of Duane McCloud: Air Quality	AIR	Duane McCloud
259		Declaration of Glen King: Air Quality	AIR	Glen King
261		Declaration of Howard Balentine: Air Quality	AIR	Howard Balentine
281		Declaration of Kenneth Stein: Air Quality	AIR	Kenny Stein
301		Declaration of Russ Kingsley: Air Quality (1)	AIR	Russ Kingsley
302		Declaration of Russ Kingsley: Air Quality (2)	AIR	Russ Kingsley
305		Declaration of Sara Head: Air Quality (1)	AIR	Sara Head
306		Declaration of Sara Head: Air Quality (2)	AIR	Sara Head
Biological Resources				
7	3/13/2008	AFC Section 5.3: Biological Resources	BIO	Lyndon Quon
35	3/13/2008	AFC Appendix F: Biological Resources Supporting Documentation	BIO	Lyndon Quon
36	3/13/2008	AFC Appendix F: Biological Resources Supporting Documentation, Attachment E, Mojave Desert Tortoise and Mohave Ground Squirrel Habitat Assessment Reports	BIO	Alice Karl/Philip Leitner
52	4/8/2008	Data Adequacy Supplement, Biological Resources	BIO	Jennifer Guigliano
59	7/2/2008	Summary of Pre-Application Field Meeting for Streambed Alteration Agreement	BIO	Kenny Stein/Jim Prine
62	7/16/2008	Responses to CEC Data Requests 13-16 & 18-25	BIO	Jennifer Guigliano
71	7/19/2008	Streambed Alteration Agreement	BIO	Jennifer Guigliano/Jim Prine
73	8/18/2008	Supplemental Responses to CEC Data Requests 17, 18 & 20, with Attachment DR-17	BIO	Jennifer Guigliano
78	10/13/2008	Revised Response to Data Request 14	BIO	Jennifer Guigliano
79	10/13/2008	Responses to CEC Data Requests 71-78	BIO	Jennifer Guigliano
87	10/29/2008	Botanical and Wildlife Special Status Species Spring Survey Report	BIO	Jennifer Guigliano
88	10/29/2008	Response to CDFG letter on BSEP Streambed Alteration Notification	BIO	Jennifer Guigliano
90	11/26/2008	Supplemental Workshop Responses to Data Requests 14, 17 & 20	BIO	Jennifer Guigliano
92	12/1/2008	Application for Incidental Take of Threatened or Endangered Species, Section 2081 of CESA	BIO	Jennifer Guigliano

Ex. No.	Date	Title	Subject	Sponsor
110		Application for Low Effects HCP	BIO	Jennifer Guigliano
114	4/8/2009	PPSA Comments, Section IIB: Biological Resources	BIO	Jennifer Guigliano
129	5/1/2009	PSA Comments, Biological Resources	BIO	Jennifer Guigliano
130	5/1/2009	PSA Comments, Attachment BIO-1: Desert Tortoise Removal Plan, April 2009	BIO	Alice Karl
131	5/1/2009	PSA Comments, Attachment BIO-2: Burrowing Owl Relocation Area Management Plan	BIO	Jennifer Guigliano
151	6/1/2009	Common Raven Monitoring, Management & Control Plan	BIO	Jennifer Guigliano
171	6/19/2009	PDR Section 4.1.2: Biological Resources	BIO	Jennifer Guigliano
178	6/19/2009	PDR Section 4.2.2: Biological Resources	BIO	Jennifer Guigliano
195	6/19/2009	PDR Attachment 1b: ReRouted Wash Mitigation Plan	BIO	Jennifer Guigliano
198	6/19/2009	PDR Attachment 4a: Burrowing Owl Survey Report for Emergency Access Road	BIO	Jennifer Guigliano
199	6/19/2009	PDR Attachment 4b: Desert Tortoise Survey Report for Emergency Access Road	BIO	Jennifer Guigliano
219	8/1/2009	Email Regarding Red Rock Poppy	BIO	Kenny Stein
220	8/1/2009	Habitat Conservation Plan	BIO	Jennifer Guigliano
235		Declaration of Alice Karl: Biological Resources	BIO	Alice Karl
272		Declaration of Jennifer Guigliano: Biological Resources	BIO	Jennifer Guigliano
277		Declaration of Jim Prine: Biological Resources	BIO	Jim Prine
282		Declaration of Kenneth Stein: Biological Resources	BIO	Kenny Stein
288		Declaration of Lyndon Quon: Biological Resources	BIO	Lyndon Quon
299		Declaration of Philip Leitner: Biological Resources	BIO	Phil Leitner
325	3/9/2010	Rebuttal Testimony of Jennifer Guigliano on Biological Resources	BIO	Jennifer Guigliano
326	3/9/2010	Rebuttal Testimony of Alice Karl on Biological Resources	BIO	Alice Karl
327	3/9/2010	Rebuttal Testimony of Philip Leitner on Biological Resources	BIO	Philip Leitner
328	3/9/2010	Rebuttal Testimony of Kenneth Stein on Biological Resources	BIO	Kenneth Stein

Ex. No.	Date	Title	Subject	Sponsor
Cultural Resources				
8	3/13/2008	AFC Section 5.4: Cultural Resources	CUL	Rebecca Apple
37	3/13/2008	AFC Appendix G.1: Archaeological Report	CUL	Rebecca Apple
38	3/13/2008	AFC Appendix G.2: Built Structures Report	CUL	Rebecca Apple
53	4/8/2008	Data Adequacy Supplement, Cultural Resources	CUL	Rebecca Apple
64	7/16/2008	Responses to CEC Data Requests 26-35, with attachments	CUL	Rebecca Apple
74	8/18/2008	Supplemental Response to Data Requests 30, 32, 34 & 35, with Attachment DR-34 and DR-35	CUL	Rebecca Apple
80	10/13/2008	Responses to CEC Data Requests 79-80	CUL	Rebecca Apple
85	10/23/2008	Supplemental Response to Data Requests 30, 32 & 34, with Attachment DR-32: Evaluation of Cultural Resources	CUL	Rebecca Apple
91	11/26/2008	Confidential Supplemental Workshop Response to Data Request 34: Geomorph Maps and Cover Memorandum	CUL	Rebecca Apple
104	1/21/2009	Geoarchaeological Trenching Plan	CUL	Craig Young, Far Western
107	2/6/2009	Preliminary Results Beacon Solar Project Geoarchaeology (Supplemental Response to Data Request 34)	CUL	Craig Young, Far Western
112	3/26/2009	Email Response to Request for Clarification on Resource Evaluations From M. McGuirt	CUL	Rebecca Apple
115	4/8/2009	PPSA Comments, Section IIC: Cultural Resources	CUL	Rebecca Apple
123	5/1/2009	Landform Structure and Archaeological Sensitivity in the Beacon Solar Energy Project Area	CUL	Craig Young, Far Western
132	5/1/2009	PSA Comments, Cultural Resources	CUL	Rebecca Apple
133	5/1/2009	PSA Comments, Attachment CUL-1: Comments and Amendments to Cultural Resources Conclusions	CUL	Rebecca Apple
134	5/1/2009	PSA Comments, Attachment CUL-2: Proposed Cultural Resources Mitigation	CUL	Rebecca Apple
200	6/19/2009	PDR Attachment 4c: Cultural Resources Survey Report for Emergency Access Road	CUL	Rebecca Apple
215	7/20/2009	Response to Request Regarding BSEP Subsurface Investigations	CUL	Rebecca Apple
242		Declaration of D. Craig Young: Cultural Resources	CUL	Craig Young, Far Western
300		Declaration of Rebecca Apple: Cultural Resources	CUL	Rebecca Apple

Ex. No.	Date	Title	Subject	Sponsor
329	3/9/2010	Rebuttal Testimony of Rebecca Apple on Cultural Resources	CUL	Rebecca Apple
330	3/9/2010	Rebuttal Testimony of Kenneth Stein on Cultural Resources	CUL	Kenneth Stein
331	3/9/2010	Rebuttal Testimony of Duane McCloud on Cultural Resources	CUL	Duane McCloud
Geology				
9	3/13/2008	AFC Section 5.5: Geologic Hazards and Resources	GEO	Mike Flack
24	3/13/2008	AFC Appendix B.1: Preliminary Geotechnical Constraints Evaluation	GEO	Bob Anders
25	3/13/2008	AFC Appendix B.2: Preliminary Geotechnical Investigation Report	GEO	Bob Anders
54	4/8/2008	Data Adequacy Supplement, Geological Hazards	GEO	Mike Flack
236		Declaration of Bob Anders: Geoarchaeology	GEO	Bob Anders
293		Declaration of Mike Flack: Geology	GEO	Mike Flack
Hazardous Materials				
10	3/13/2008	AFC Section 5.6: Hazardous Materials Handling	HAZMAT	Russ Kingsley
116	4/8/2009	PPSA Comments, Section IID: Hazardous Materials Management	HAZMAT	Russ Kingsley
135	5/1/2009	PSA Comments, Hazardous Materials Management	HAZMAT	Duane McCloud
172	6/19/2009	PDR Section 4.1.4: Hazardous Materials Management	HAZMAT	Russ Kingsley
179	6/19/2009	PDR Section 4.2.3: Hazardous Materials Management	HAZMAT	Jared Foster / Howard Balentine
248		Declaration of Duane McCloud: Hazardous Materials	HAZMAT	Duane McCloud
262		Declaration of Howard Balentine: Hazardous Materials	HAZMAT	Howard Balentine
266		Declaration of Jared Foster: Hazardous Materials	HAZMAT	Jared Foster
303		Declaration of Russ Kingsley: Hazardous Materials	HAZMAT	Russ Kingsley
Hydrology & Hydraulics				
63	7/16/2008	Responses to CEC Data Requests 17 & 43-44	H&H	Jennifer Guigliano/Bob Anders
75	8/18/2008	Supplemental Responses to CEC Data Requests 44 & 45, with Attachments DR-44 and DR-45	H&H	Jennifer Guigliano / Bob Anders
82	10/13/2008	Responses to CEC Data Requests 93-95	H&H	Bob Anders

Ex. No.	Date	Title	Subject	Sponsor
150	5/13/2009	Materials from CLOMR Meeting	H&H	Jennifer Guigliano
152	6/1/2009	Rerouted Wash Electronic Support Files	H&H	Jennifer Guigliano/Gerard Dalziel/Serkan Mahmutoglu
156	6/19/2009	PDR Section 2.1.1: Diversion Channel Redesign	H&H	Jennifer Guigliano/Serkan Mahmutoglu
194	6/19/2009	PDR Attach. 1a, Draft Memorandum for Hydrologic & Hydraulic Analysis of Rerouted Channel for Beacon Solar Energy, June 2009	H&H	Gerard Dalziel
210	6/29/2009	Email from J. Guigliano re rerouted wash electronic support files (MIKE21?)	H&H	Jennifer Guigliano
217	7/20/2009	Response to Rerouted Wash Information Request	H&H	Jennifer Guigliano
218	7/26/2009	Emails from Jenn re FLO2D Models, Models on CD	H&H	Jennifer Guigliano/Serkan Mahmutoglu
237		Declaration of Bob Anders: Hydrology & Hydraulics	H&H	Bob Anders
257		Declaration of Gerard Dalziel: Hydrology & Hydraulics	H&H	Gerard Dalziel
273		Declaration of Jennifer Guigliano: Hydrology & Hydraulics	H&H	Jennifer Guigliano
318		Declaration of Serkan Mahmutoglu: Hydrology & Hydraulics	H&H	Serkan Mahmutoglu
321	11/09	60% Hydrologic and Hydraulic Analysis of Rerouted Channel	H&H	Jennifer Guigliano/Gerard Dalziel/Serkan Mahmutoglu
Land Use				
11	3/13/2008	AFC Section 5.7: Land Use	LU	Jerry McLees
46	3/13/2008	AFC Appendix K.4: Kern County Agencies Correspondence	LU	Jerry McLees
47	3/13/2008	AFC Appendix K.5: Department of Defense Correspondence	LU	Kenny Stein
55	4/8/2008	Data Adequacy Supplement, Land Use	LU	Jerry McLees
57	5/1/2008	Correspondence with Kern County Planning Department	LU	Kenny Stein/Jerry McLees
111	3/4/2009	Boundary Survey Sheets	LU	Jerry McLees
122	4/21/2009	Kern County resolutions approving LU applications	LU	Jerry McLees
136	5/1/2009	PSA Comments, Land Use	LU	Duane McCloud

Ex. No.	Date	Title	Subject	Sponsor
213	7/17/2009	Application for Lot Line Adjustment	LU	Jerry McLees
223	8/24/2009	Response to Letter From John Musick	LU	Scott Busa
249		Declaration of Duane McCloud: Land Use	LU	Duane McCloud
275		Declaration of Jerry McLees: Land Use	LU	Jerry McLees
283		Declaration of Kenneth Stein: Land Use	LU	Kenny Stein
312		Declaration of Scott Busa: Land Use	LU	Scott Busa
Noise				
12	3/13/2008	AFC Section 5.8: Noise	NOISE	Duane McCloud
117	4/8/2009	PPSA Comments, Section IIE: Noise and Vibration	NOISE	Duane McCloud
137	5/1/2009	PSA Comments, Noise	NOISE	Duane McCloud
250		Declaration of Duane McCloud: Noise	NOISE	Duane McCloud
Paleontology				
13	3/13/2008	AFC Section 5.9: Paleontological Resources	PALEO	Cara Corsetti, SWCA
39	3/13/2008	AFC Appendix H: Paleontological Resources Technical Report	PALEO	Cara Corsetti, SWCA
148	5/1/2009	PSA Comments, Geology and Paleontology	PALEO	Kenny Stein
201	6/19/2009	PDR Attachment 4d: Paleontological Resources Survey Report for Emergency Access Road	PALEO	Cara Corsetti, SWCA
241		Declaration of Cara Corsetti: Paleo	PALEO	Cara Corsetti, SWCA
284		Declaration of Kenneth Stein: Paleontology	PALEO	Kenny Stein
Public Health				
14	3/13/2008	AFC Section 5.10: Public Health	PH	Greg Wolffe
138	5/1/2009	PSA Comments, Public Health	PH	Sara Head
139	5/1/2009	PSA Comments, Attachment Public Health-1: Health Risk Assessment	PH	Sara Head
177	6/19/2009	PDR Section 4.2.1.2: Public Health Analysis for Propane	PH	Sara Head
260		Declaration of Greg Wolffe: Public Health	PH	Greg Wolffe
307		Declaration of Sara Head: Public Health	PH	Sara Head
Socioeconomics				
15	3/13/2008	AFC Section 5.11: Socioeconomics	SOCIO	Addie Olazabal
56	4/8/2008	Data Adequacy Supplement, Socioeconomics	SOCIO	Addie Olazabal
65	7/16/2008	Responses to CEC Data Requests 36-42	SOCIO	Addie Olazabal
81	10/13/2008	Responses to CEC Data Requests 81-92	SOCIO	Addie Olazabal
234		Declaration of Addie Olazabal: Socioeconomics	SOCIO	Addie Olazabal
Soils				
16	3/13/2008	AFC Section 5.12: Soils	SOILS	Mike Flack
49	3/13/2008	AFC Appendix L: Drainage Plans	SOILS	Bob Anders
66	7/16/2008	Responses to CEC Data Requests 45-49, with Attachment DR-47	SOILS	Duane McCloud

Ex. No.	Date	Title	Subject	Sponsor
238		Declaration of Bob Anders: Soils	SOILS	Bob Anders
251		Declaration of Duane McCloud: Soils	SOILS	Duane McCloud
294		Declaration of Mike Flack: Soils	SOILS	Mike Flack
Traffic & Transportation				
17	3/13/2008	AFC Section 5.13: Traffic and Transportation	TRAFF	John Wilson, Wilson Eng.
118	4/8/2009	PPSA Comments, Section IIF: Traffic and Transportation	TRAFF	Duane McCloud
143	5/1/2009	PSA Comments, Traffic and Transportation	TRAFF	Duane McCloud
173	6/19/2009	PDR Section 4.1.6: Traffic and Transportation	TRAFF	Duane McCloud
180	6/19/2009	PDR Section 4.2.4: Traffic and Transportation	TRAFF	Jared Foster
252		Declaration of Duane McCloud: Traffic & Transportation	TRAFF	Duane McCloud
267		Declaration of Jared Foster: Traffic & Transportation	TRAFF	Jared Foster
278		Declaration of John Wilson: Traffic & Transportation	TRAFF	John Wilson, Wilson Eng.
Transmission Line Safety & Engineering				
18	3/13/2008	AFC Section 5.14: Transmission Line Safety & Nuisance	T-LINE	Duane McCloud/Steve Richards
44	3/13/2008	AFC Appendix K.2: Los Angeles Department of Water & Power Correspondence	T-LINE	Scott Busa
67	7/16/2008	Responses to CEC Data Requests 50-53	T-LINE	Duane McCloud/Steve Richards
76	9/2/2008	Supplemental Responses to CEC Data Requests 50-53, with Attachment DR-50 (SIS)	T-LINE	Duane McCloud/Steve Richards
192	6/19/2009	PDR Figure 6: Revised Key One Line Diagram	T-LINE	Duane McCloud/Steve Richards
255		Declaration of Duane McCloud: Transmission Line	T-LINE	Duane McCloud
313		Declaration of Scott Busa: Transmission Line	T-LINE	Scott Busa
320		Declaration of Steve Richards: Transmission Line	T-LINE	Steve Richards
334	3/9/2009	Rebuttal Testimony of Duane McCloud on Transmission System Engineering	T-LINE	Duane McCloud
Visual Resources				
19	3/13/2008	AFC Section 5.15: Visual Resources	VIS	Merlyn Paulson / Brian Stormwind
105	1/23/2009	Email Correspondence Regarding Visible Plumes	VIS	Brian Stormwind

Ex. No.	Date	Title	Subject	Sponsor
119	4/8/2009	PPSA Comments, Section IIG: Visual Resources	VIS	Merlyn Paulson
144	5/1/2009	PSA Comments, Visual Resources	VIS	Merlyn Paulson
164	6/19/2009	PDR Section 2.1.10: Visual Impacts Reduction	VIS	Merlyn Paulson
174	6/19/2009	PDR Section 4.1.7: Visual Resources	VIS	Merlyn Paulson
181	6/19/2009	PDR Section 4.2.5: Visual Resources	VIS	Merlyn Paulson
233	9/4/2009	Email From BLM Regarding Visual Impacts	VIS	Kenny Stein
240		Declaration of Brian Stormwind: Visual	VIS	Brian Stormwind
285		Declaration of Kenneth Stein: Visual Resources	VIS	Kenny Stein
290		Declaration of Merlyn Paulson: Visual Resources	VIS	Merlyn Paulson
323	3/9/2010	Declaration of Jody Salamacha-Hollier: Visual Resources	VIS	Jody Salamacha-Hollier
324	3/9/2010	Rebuttal Testimony of Merlyn Paulson on Visual Resources	VIS	Merlyn Paulson
Waste Management				
20	3/13/2008	AFC Section 5.16: Waste Management	WASTE	Mike Arvidson
32	3/13/2008	AFC Appendix D: Therminol VP1 Heat Transfer Fluid MSDS	WASTE	Jared Foster
40	3/13/2008	AFC Appendix I: Phase I Site Assessments	WASTE	Jim Fickerson
48	3/13/2008	AFC Appendix K.6: Department of Toxic Substances Control Correspondence	WASTE	Mike Arvidson
68	7/16/2008	Responses to CEC Data Requests 54-57, with Attachment DR-56 Phase I ESA for Natural Gas Pipeline Route	WASTE	Jim Fickerson
97	12/15/2008	Beacon Waste Stream Quantities - Revised Table 5.16-6	WASTE	Janine Forrest
145	5/1/2009	PSA Comments, Waste Management	WASTE	Duane McCloud
175	6/19/2009	PDR Section 4.1.8: Waste Management	WASTE	Jared Foster/Janine Forrest
182	6/19/2009	PDR Section 4.2.6.1: Waste from Additional HTF Expansion Tanks	WASTE	Russ Kingsley
208	6/19/2009	PDR Attachment 8: Phase I Environmental Site Assessment for Additional Transmission Line Parcel	WASTE	Jim Fickerson
253		Declaration of Duane McCloud: Waste Management	WASTE	Duane McCloud
263		Declaration of Janine Forest: Waste Management	WASTE	Janine Forrest
268		Declaration of Jared Foster: Waste Management	WASTE	Jared Foster
276		Declaration of Jim Fickerson: Waste Management	WASTE	Jim Fickerson

Ex. No.	Date	Title	Subject	Sponsor
291		Declaration of Mike Arvidson: Waste Management	WASTE	Mike Arvidson
304		Declaration of Russ Kingsley: Waste Management	WASTE	Russ Kingsley
332	3/9/2010	Rebuttal Testimony of Duane McCloud on Waste Management	WASTE	Duane McCloud
333	3/9/2010	Rebuttal Testimony of Michael Flack on Waste Management	WASTE	Mike Flack
Water				
21	3/13/2008	AFC Section 5.17: Water Resources	WATER	Mike Flack
41	3/13/2008	AFC Appendix J: Water Resources Supporting Documentation	WATER	Mike Flack
42	3/13/2008	AFC Appendix J.3.d: Raw Data and Aquifer Test Analysis (CD only)	WATER	Mike Flack
69	7/16/2008	Responses to CEC Data Requests 58-70	WATER	Mike Flack
70	7/16/2008	Responses to CEC Data Requests, Attachment DR-63	WATER	Mike Flack
83	10/13/2008	Responses to CEC Data Requests 96-127, with Figures and Tables	WATER	Mike Flack
84	10/13/2008	Data Requests 113, Attachment DR-113, MODFLOW files	WATER	Mike Flack
86	10/23/2008	Supplemental Responses to CEC Data Requests 101-103, 106-109, 112, 114-115, 117-123, with Tables and Figures	WATER	Mike Flack
94	12/9/2008	Supplemental Workshop Responses to CEC Data Requests 96, 101, 112, 114, 118, & 121, with attachments	WATER	Mike Flack
102	1/16/2009	Email Response to CEC Request Regarding High TDS Water	WATER	Mike Flack
106	1/31/2009	Summary of Conference Call With Lahontan	WATER	Mike Flack
108	2/10/2009	Response to RWQCB Comments on draft ROWD Application	WATER	Mike Flack
109	2/23/2009	Email Response to E. Solorio Regarding Sources of Groundwater Data, With Updated J.4 database	WATER	Mike Flack
120	4/8/2009	PPSA Comments, Section IIIA: Soil and Water Resources	WATER	Mike Flack / Jennifer Guigliano
140	5/1/2009	PSA Comments, Soil and Water	WATER	Mike Flack
141	5/1/2009	PSA Comments, Attachment Soil and Water-1: Draft Water Mitigation and Offset Plan	WATER	Mike Flack/Jennifer Guigliano
142	5/1/2009	PSA Comments, Attachment Soil and Water-2: Revised Table 112W	WATER	Mike Flack

Ex. No.	Date	Title	Subject	Sponsor
188	6/19/2009	PDR Figure 1: Water Balance With On-Site Groundwater	WATER	Scott Stern/Dan Sampson
202	6/19/2009	PDR Attachment 5: Groundwater Mitigation Plan	WATER	Mike Flack
203	6/19/2009	PDR Attachment 6: Amendment to Report of Waste Discharge	WATER	Mike Flack
216	7/20/2009	Response to Request for Predictive Sensitivity Groundwater Analysis	WATER	Mike Flack
225	9/11/2009	Email Regarding Updated Construction Water Impacts Assessment	WATER	Mike Flack
226	12/2/1997	LADWP's Draft Initial Study/Proposed Negative Declaration SAMDA Water Exploration, Fremont Valley Ranch Water Management Project	WATER	Mike Flack
227	4/1/2009	Stetson Groundwater Report (CA City)	WATER	Mike Flack
231	7/2/2009	DWR Well Data	WATER	Mike Flack
243		Declaration of Dan Sampson: Water	WATER	Dan Sampson
274		Declaration of Jennifer Guigliano: Water	WATER	Jennifer Guigliano
295		Declaration of Mike Flack: Water (1)	WATER	Mike Flack
296		Declaration of Mike Flack: Water (2)	WATER	Mike Flack
315		Declaration of Scott Stern: Water	WATER	Scott Stern
335	3/9/2010	Rebuttal Testimony of Michael Flack on Water Resources	WATER	Mike Flack
336	3/9/2010	Rebuttal Testimony of Scott Busa on Water Resources	WATER	Scott Busa
Worker Safety				
22	3/13/2008	AFC Section 5.18: Worker Safety	WS	Mike Arvidson
146	5/1/2009	PSA Comments, Worker Safety and Fire Protection	WS	Duane McCloud
183	6/19/2009	PDR Section 4.2.7: Other Environmental Topic Areas	WS	Mike Arvidson
228	5/1/2009	PSA Comments, Attachment Worker Safety-1: Letter From Kern County Fire Dept.	WS	Jared Foster
254		Declaration of Duane McCloud: Worker Safety	WS	Duane McCloud
269		Declaration of Jared Foster: Worker Safety	WS	Jared Foster
292		Declaration of Mike Arvidson: Worker Safety	WS	Mike Arvidson
Facility Design and Engineering				
26	3/13/2008	AFC Appendix C.1: Civil Engineering Design Criteria	FD	Bob Anders
27	3/13/2008	AFC Appendix C.2: Mechanical Engineering Design Criteria	FD	Jared Foster
28	3/13/2008	AFC Appendix C.3: Control Engineering Design Criteria	FD	Jared Foster

Ex. No.	Date	Title	Subject	Sponsor
29	3/13/2008	AFC Appendix C.4: Geologic and Foundation Design Criteria	FD	Bob Anders
30	3/13/2008	AFC Appendix C.5: Structural Engineering Design Criteria	FD	Bob Anders
31	3/13/2008	AFC Appendix C.6: Electrical Engineering Design Criteria	FD	Steve Richards
95	12/12/2008	Email from Kenny to Eric on Auxiliary Loads	FD	Kenny Stein
98	12/22/2008	Email from K. Stein Regarding Cut/Fill For Evaporation Ponds	FD	Kenny Stein
101	1/13/2009	Email from K. Stein Regarding Control Temperature for HTF Freeze Pro	FD	Kenny Stein
147	5/1/2009	PSA Comments, Engineering Assessment	FD	Duane McCloud
149	5/1/2009	PSA Comments, General Conditions	FD	Duane McCloud
154	6/19/2009	PDR, Section 1.0: Intro & Section 5.0: Conclusions	FD	Kenny Stein
155	6/19/2009	PDR, Section 2.1: Staff Suggested Changes	FD	Kenny Stein
157	6/19/2009	PDR Section 2.1.2: Water Treatment & Discharge Facilities	FD	Scott Stern/Dan Sampson
158	6/19/2009	PDR Section 2.1.3: Stormwater Retention and Erosion Control	FD	Bob Anders
159	6/19/2009	PDR Section 2.1.5: SCE Distribution Lines	FD	Scott Busa
160	6/19/2009	PDR Section 2.1.6: Land Treatment Unit	FD	Janine Forrest
161	6/19/2009	PDR Section 2.1.7: Site Layout Adjustments	FD	Jared Foster
162	6/19/2009	PDR Section 2.1.8: Telecommunications System	FD	Scott Busa
165	6/19/2009	PDR Section 2.2: Beacon Proposed Project Refinements	FD	Duane McCloud
190	6/19/2009	PDR Figure 3: Revised Site Layout	FD	Jared Foster
191	6/19/2009	PDR Figure 5: Revised Power Block Equipment Layout (with Propane)	FD	Jared Foster
196	6/19/2009	PDR Attachment 2: Evaporation Pond Calculations	FD	Jared Foster/Janine Forrest
197	6/19/2009	PDR Attachment 3: Storm Water Management-Conceptual Retention and Grading Study	FD	Bob Anders
239		Declaration of Bob Anders: Facility Design	FD	Bob Anders
244		Declaration of Dan Sampson: Facility Design	FD	Dan Sampson
256		Declaration of Duane McCloud: Facility Design	FD	Duane McCloud
264		Declaration of Janine Forest: Facility Design	FD	Janine Forrest
270		Declaration of Jared Foster: Facility Design	FD	Jared Foster
286		Declaration of Kenneth Stein: Facility Design	FD	Kenny Stein
311		Declaration of Scott Busa: Facility Design	FD	Scott Busa
316		Declaration of Scott Stern: Facility Design	FD	Scott Stern

Ex. No.	Date	Title	Subject	Sponsor
319		Declaration of Steve Richards: Facility Design	FD	Steve Richards
Alternatives				
4	3/13/2008	AFC Section 4.0: Alternatives	ALTS	Kenny Stein
43	3/13/2008	AFC Appendix K.1: Water Agencies Correspondence	ALTS	Jared Foster
89	11/24/2008	Email from Kenny to Eric on Alternative Layouts	ALTS	Kenny Stein
100	1/13/2009	Beacon Dry Cooling Evaluation	ALTS	Jared Foster/Gary Pratt
121	4/8/2009	PPSA Comments, Section IIIB: Alternatives	ALTS	Kenny Stein
127	5/1/2009	PSA Comments, Alternatives	ALTS	Kenny Stein
153	6/3/2009	Comments on CEC Groundwater Sampling Program	ALTS	Mike Flack
166	6/19/2009	PDR Section 3.1: Koehn Lake Alternative	ALTS	Mike Flack
167	6/19/2009	PDR Section 3.1.1: Water Treatment Facilities for Configuration 2	ALTS	Scott Stern/Dan Sampson
168	6/19/2009	PDR Section 3.1.2: Evaporation Pond Size for Configuration 2	ALTS	Janine Forrest
169	6/19/2009	PDR Section 3.2: Rosamond Waste Water Alternative	ALTS	Scott Busa
184	6/19/2009	PDR Section 4.3.1: Air Quality	ALTS	Sara Head
185	6/19/2009	PDR Section 4.3.5: Soil and Water Resources	ALTS	Mike Flack
186	6/19/2009	PDR Section 4.3.6: Traffic and Transportation	ALTS	Jared Foster
187	6/19/2009	PDR Section 4.3.7: Waste Management	ALTS	Jared Foster/Janine Forrest
189	6/19/2009	PDR Figure 2: Water Balance With High TDS Water	ALTS	Scott Stern/Dan Sampson
193	6/19/2009	PDR Figure 7: Water Supply Wells Located in the Koehn Sub-Basin	ALTS	Mike Flack
221	8/11/2009	Email to CEC Regarding Results of Offsite Well Sampling	ALTS	Mike Flack
222	8/18/2009	Email to CEC With Resubmittal of Revised Metals Results for Offsite Sampling	ALTS	Mike Flack
224	8/30/2009	Arciero Well Data (from J. Musick)	ALTS	Mike Flack
229	6/21/2009	CEC Well Canvas	ALTS	Mike Flack
230	7/1/2009	CEC Well Canvas Photos	ALTS	Mike Flack
245		Declaration of Dan Sampson: Alternatives	ALTS	Dan Sampson
258		Declaration of Gary Pratt: Alternatives	ALTS	Gary Pratt
265		Declaration of Janine Forest: Alternatives	ALTS	Janine Forrest
271		Declaration of Jared Foster: Alternatives	ALTS	Jared Foster
287		Declaration of Kenneth Stein: Alternatives	ALTS	Kenny Stein
297		Declaration of Mike Flack: Alternatives (1)	ALTS	Mike Flack
298		Declaration of Mike Flack: Alternatives (2)	ALTS	Mike Flack

Ex. No.	Date	Title	Subject	Sponsor
308		Declaration of Sara Head: Alternatives	ALTS	Sara Head
314		Declaration of Scott Busa: Alternatives	ALTS	Scott Busa
317		Declaration of Scott Stern: Alternatives	ALTS	Scott Stern

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

In the Matter of:

Beacon Solar, LLC's)
Application for Certification of the)
Beacon Solar Energy Project)
_____)

Docket No. 08-AFC-2

**BEACON SOLAR, LLC'S TESTIMONY ON OVERRIDING CONSIDERATIONS –
RESPONSE TO CALIFORNIA ENERGY COMMISSION STAFF'S CONCLUSION
BEACON SOLAR ENERGY PROJECT CREATES A SIGNIFICANT ADVERSE
VISUAL IMPACT**

March 9, 2010

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BEACON SOLAR ENERGY PROJECT

OVERRIDING CONSIDERATIONS TESTIMONY

BEACON SOLAR, LLC'S TESTIMONY ON OVERRIDING CONSIDERATIONS – RESPONSE TO CALIFORNIA ENERGY COMMISSION STAFF'S CONCLUSION BEACON SOLAR ENERGY PROJECT CREATES A SIGNIFICANT ADVERSE VISUAL IMPACT

Q1. Please state your name and title for the record.

A1. My name is Kenny Stein and I am an Environmental/Permitting Manager for NextEra Energy Resources, LLC.

Q2. Is your resume attached to your declaration marked as Exhibit 279 your declaration in the area of executive summary in this proceeding?

A2. Yes it is.

Q3. Please provide a summary of your qualifications highlighting those areas that apply to the testimony you provide below.

A3. In my position I am responsible for all environmental aspects of siting, permitting and construction compliance for several solar generating facilities. These facilities are located in California, Arizona and Spain. I have also held the same position for wind and gas generation facilities. I have been working in the energy field in this capacity since 1999. Both my undergraduate and graduate degrees are in environmental fields of study.

Q4. Are you aware of the finding of a significant adverse visual impact in the visual resources section of the Final Staff Assessment (FSA) for the Beacon Solar Energy Project (“Project”)?

A4. Yes. I am.

Q5. Is there a way to screen the Project from either of the locations where FSA finds a significant visual impact either from KOP-2, the United States Bureau of Land Management’s Jawbone Canyon Off Highway Vehicle Open Area Ridgecrest Office or KOP-6, the public hiking trails?

A5. No. The facility is too large to screen.

Q6. Are you aware of the testimony of Merlyn Paulson, wherein he disagrees with Staff’s findings of significance of the visual impacts?

A6. Yes I am.

Q7. In the event the Commission agrees with Staff’s recommended findings and does not accept Mr. Paulson's expert opinion, could you please describe the benefits of the Project?

BEACON SOLAR ENERGY PROJECT

OVERRIDING CONSIDERATIONS TESTIMONY

A7. Sure. This Project provides much needed renewable generation to California and will provide all of the following benefits:

- It will support the efforts of retail service providers to obtain 20% of their energy from renewable resources. (See Senate Bill 1078 as amended by Senate Bill 107.) The Project would also contribute to meeting the goals set by Executive Order S-14-08.
- It will provide very low carbon energy. The carbon emissions from the boilers needed to keep the heat transfer fluid from freezing will be very minor in comparison to the amount of energy this Project can produce. The FSA calculates a greenhouse gas performance level for the Project at 0.008 metric tons of CO₂e per megawatt-hour of energy produced. (FSA at 4.1-76.) Thus, the Project will contribute to meeting the California's greenhouse gas reduction requirements set in Assembly Bill 32.
- It will produce solar energy with an efficient land use footprint. We note the FSA calculated a land use efficiency of 5.3 acres per installed megawatts of generation. (FSA at 5.3-7.) This Project is noted as one of the most efficient solar technologies from a land use perspective. (See FSA at 5.3-8 to 9.)
- It will generate both short term construction and long term operation employment as well as local expenditures. These benefits are summarized in the FSA in Socioeconomics Table 5. (FSA at 4.8-13.)
- It is located on biologically less desirable heavily disturbed land. The mitigation requirements reflected in the FSA and developed in consultation with the United States Fish and Wildlife Service and California Department of Fish and Game demonstrate the inherent value of selecting this site for development. The site does not contain pristine habitat for any endangered species and none will be threatened by the development of this Project.

Q8. On balance, do you believe the benefits of this Project outweigh the FSA's finding of a significant adverse visual impact?

A8. Yes. The benefits of this Project far outweigh the adverse environmental impacts from this project.

Q9. Where your testimony contains professional opinion does it present your best professional judgment?

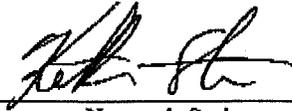
A9. Yes it does.

Q10. Is your testimony true and correct to the best of your knowledge?

A10. Yes it is.

**BEACON SOLAR ENERGY PROJECT
OVERRIDING CONSIDERATIONS TESTIMONY**

Executed at Ft. Lauderdale, Florida on March 9, 2010.



Kenneth Stein

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Docket No. 08-AFC-2

Beacon Solar Energy Project

**Declaration of
Jody Salamacha-Hollier**

I, Jody Salamacha-Hollier, declare as follows:

1. I am a professional photographer based in Kern County, California, and the owner of Looking Glass Imaging. I graduated in 2001 from the University of Louisiana at Lafayette with a Bachelors of Fine Arts.
2. On November 16, 2009, I took the photographs that form the basis for the **Visual Resources Photo-documentation Testimony of Merlyn, Paulson, MLA (Exhibit 324)** near the proposed Beacon Solar Energy Project site outside of California City, California.
3. The photographs were taken with a digital Nikon D300 camera affixed with a 18-55 mm lens for wide shots and a 55-200 mm lens for zoom shots. The digital files were then sharpened slightly for clarity purposes and the exposure was adjusted slightly to compensate for harsh lighting conditions using Adobe Lightroom. No other edits or alterations were made.
4. To the best of my knowledge, all of the photographic representations contained in this testimony (with the exception of slides 1 and 21-24, which were taken from the Application for Certification) are true and unaltered reproductions of the final photographs I provided to NextEra.
5. I am personally familiar with the photographs contained in that testimony (with the exception of slides 1 and 21-24, which were taken from the Application for Certification) and if called as a witness could testify as to their accuracy and the time, place, and manner in which they were taken. I make these statements, and render these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Bakersfield, California on March 8, 2010.



Jody Salamacha-Hollier

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

In the Matter of:

Beacon Solar, LLC's)	
Application for Certification of the)	Docket No. 08-AFC-2
Beacon Solar Energy Project)	
_____)	

**BEACON SOLAR, LLC'S VISUAL RESOURCES REBUTTAL TESTIMONY OF
MERLYN PAULSON**

March 9, 2010

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EXHIBIT 324

BEACON SOLAR ENERGY PROJECT

VISUAL RESOURCES REBUTTAL TESTIMONY

**VISUAL RESOURCES REBUTTAL TESTIMONY OF MERLYN PAULSON ON
BEHALF OF BEACON SOLAR, LLC IN RESPONSE TO THE CONCLUSIONS OF
THE VISUAL RESOURCES SECTION OF THE FINAL STAFF ASSESSMENT**

Q1. Please state your name and title for the record.

A1. My name is Merlyn Paulson and I am the senior visual resources analyst at AECOM, Incorporated.

Q2. Is your resume attached to Exhibit 290, your declaration filed in this proceeding?

A2. Yes it is.

Q3. Please provide a summary of your qualifications highlighting those areas that apply to the testimony you provide below.

A3. MLA, Harvard University; BLA, Utah State University; 37 years experience in visual resources assessments for large scale energy and resource development projects. Some examples include: Black Rock 1, 2 and 3 Geothermal Power Project; Blythe Solar Power Project; Palen Solar Power Project; Palmdale Hybrid Power Project; Ridgecrest Solar Power Project; and Victorville 2 Hybrid Power Project. In addition to these, I have been involved with several large scale electrical generation and transmission and mining projects in the western states.

Q4. Have you reviewed the Final Staff Assessment in the area of visual resources?

A4. Yes.

Q5. Do you agree with the conclusions reached by California Energy Commission Staff (“Commission Staff”) that the construction and operation of the Beacon Solar Energy Project would result in a significant adverse environmental impact?

A5. No. I do not.

Q6. You reached a different conclusion in your analysis in the Application for Certification for the Beacon Solar Energy Project, correct?

A6. Yes. I evaluated the visual impacts of the facility using the California Environmental Quality Act Guidelines, Environmental Checklist for the evaluation of environmental impacts for aesthetics. I evaluated (1) whether the project would have a substantial adverse effect on a scenic vista, (2) whether the project would substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway, (3) whether the project would substantially degrade the existing visual character or quality of the site and its surroundings, and finally (4) whether the project would create a new source of substantial light and glare that would adversely affect day or nighttime views in the area.

BEACON SOLAR ENERGY PROJECT

VISUAL RESOURCES REBUTTAL TESTIMONY

In conducting this analysis I worked with Commission Staff to identify and locate key observation points (KOPs) from which to evaluate the visual impacts of the project. I then evaluated the project from each of these locations taking into account the quality of the existing setting, the visual integrity of the natural and human based environment, the visibility of the project including the distance from the KOP to the project, and the type of viewer and viewing experience at each location.

Q7. Could you describe your evaluation process and conclusions regarding the visual impacts of the Beacon Solar Energy Project?

A7. Yes, evaluations of visual resources existing conditions and impacts from the Project are based on field observations, area maps, 2-dimensional (2D) and 3D engineering drawings, photographs of the Project area, and computer-aided photographic simulations from key observation points. In consultation with CEC Staff and representatives of Red Rock Canyon State Park, eight KOPs were selected to evaluate the Project's existing conditions and potential visual impacts. Computer modeling and rendering techniques were used to produce the simulated images of the views of the Project as they would appear from each KOP after the completion of Project construction. The assessment of the Project's impacts is based on an evaluation of the changes to the existing visual environment that would result from Project construction and operation.

In determining the extent and implications of the visual changes, a number of factors were considered:

- The specific changes in the affected environment's composition, character, and any outstanding valued qualities;
- The context of the affected visual environment;
- The extent to which the affected environment contains places or features that have been designated in plans and policies for protection or special consideration; and
- The numbers of viewers, their activities, and the extent to which these activities are related to the visual qualities affected by proposed changes.

From elevated locations, because of the movement of the sun and the changing orientation of the mirrors to track the sun's movement, the color of the mirrors would change over time. In afternoon hours on a sunny day, when viewed from elevated locations to the west, the solar array would create a visual impression that closely resembles a body of water rather than a power plant or other industrial facility because the array would be reflecting the blue sky. On a cloudier day, the visual impression would appear as gray. In the morning hours viewed from the same elevated locations to the west, viewers would have the non-reflective backs of the mirrors toward them, in which case the visual contrast with the surrounding environment would be considerably less due to the tan color of the arrays. While the Project itself would create a substantial visual contrast for a portion of the day from certain elevated KOPs, the overall impact on visual resources would be less than significant when the Project is considered in the context of its surroundings.

Q8. What is your general impression of the existing conditions of the project site and immediate vicinity?

BEACON SOLAR ENERGY PROJECT

VISUAL RESOURCES REBUTTAL TESTIMONY

A8. It is important to consider that the existing project site and immediate vicinity, to the east, north, and west is not native desert and has been substantially disturbed by failed agricultural cropping practices, water and electrical distribution structures, ranch buildings, residential buildings, the railroad track and grade, and the Honda Proving Center facility. A large portion of the project site is barren, denuded landscape, where the vegetation has been cleared. This is especially obvious from any elevated terrain in the vicinity of the site, such as at KOP-2 and KOP-6 where one can easily pick out the existing project site from the undisturbed areas to the south of the project site.

Q9. From a visual resources perspective, how does the proposed project change the view of the proposed site?

A9. The power block with the tallest structures at 55 feet is located in the center of the site and is therefore, only moderately visible in the distance, depending on lighting conditions. The distance between the viewer and these structures greatly reduces their impact. The view of the mirrors will change over the course of the day and range between a reflection of the blue sky to grey clouds or the non-reflective backs of the mirrors that have the tan color of the surrounding landscape. The overall shape of the mirror field is similar to the existing conditions of the site in that the site is distinguishable by its contrasting rectangular shape, as compared to the organic shapes in the desert to the south of the project site. In addition, a visually strong preexisting modification of the natural, ranching, and residential landscape is the Honda Proving Center test track, which presents a strong oval shape of reshaped landform and planted pine trees, visible from as much as 8 to 10 miles away. These existing landforms minimize the overall impact of the project when compared to the baseline or existing conditions.

Q10. Commission Staff found significant adverse visual impacts from two KOPs, correct?

A10. Yes, from KOP-2, the United States Bureau of Land Management's Jawbone Canyon Off Highway Vehicle Open Area Ridgecrest Office, and KOP-6, one of several public hiking trails in the eastern foothills of the Piute Mountain Range. KOP-6 is located approximately 2 miles east of Chuckwalla Mountain.

Q11. Do you agree with these conclusions?

A11. No, none of the State CEQA guidelines for significant impact was met.

Q12. Please provide a description of the existing conditions at KOP-2.

A12. The immediate site surrounding KOP-2 consists of a paved parking lot, one-storey building and entry road. The view of the existing project site and surrounding landscape in the foreground is disturbed by past agricultural cropping practices, water and electrical distribution structures, ranch buildings, residential buildings, the railroad track and its embankments, SR-14 freeway, and the Honda Proving Center facility.

Q13. Why do you disagree with Commission Staff's conclusion on KOP 2?

BEACON SOLAR ENERGY PROJECT

VISUAL RESOURCES REBUTTAL TESTIMONY

A13. In my opinion, none of the State CEQA criteria for significant impact was met and the impact from KOP-2 is less than significant. I came to this conclusion based upon a comparison of the existing condition surrounding this KOP, which consists of multiple disturbances (as mentioned previously in A12), with the form, meaning, and context of the Beacon Project as an appealing renewable energy resource. The overall shape of the project will not be unlike predominant elements of the existing project site and surrounding disturbed landscape. The Beacon Project will be low in profile in the landscape as compared to conventional energy generation and transmission structures. Initially, viewers will see the facility as a unique, renewable energy resource that replaces and contrasts with deteriorated ranch land and buildings. Over time, viewers at KOP-2 will see the facility as a landmark and their expectations will be met by the form, meaning, and context of a sensitively designed solar field in an overall disturbed and deteriorating landscape, rather than in an otherwise natural scene. The scene surrounding KOP-2 has not been natural for many decades. The nearest natural desert landscape is further south, beyond the project site. The Jawbone Canyon landscape has also been highly disturbed for several years by off-highway vehicles, as well as by historical mining activities and the aqueduct pipeline.

Q14. You also disagree with Commission Staff's conclusion on KOP-6, correct?

A14. Yes.

Q15. Why do you disagree with Commission staff's conclusion on KOP-6?

A15. In my opinion, none of the State CEQA criteria for significant impact was met and the impact from KOP-6 is less than significant. I came to this conclusion based upon a comparison of the existing condition surrounding this KOP, which consists of multiple disturbances (as mentioned previously in A12), with the form, meaning, and context of the Beacon Project as an appealing renewable energy resource. The overall shape of the project will not be unlike predominant elements of the existing project site and surrounding disturbed landscape. The Beacon Project will be low in profile in the landscape as compared to past, conventional energy generation and transmission structures. Initially, viewers will see the facility as a unique, renewable energy resource that replaces and contrasts with deteriorated ranch land and buildings. Over time, viewers at KOP-6 will see the facility as a landmark and their expectations will be met by the form, meaning, and context of a sensitively designed solar field in an overall disturbed landscape, rather than in an otherwise natural scene. The majority of the scene from KOP-6 has not been natural for many decades. The nearest natural desert landscape is further south, to the right of the project site. While this elevated view emphasizes the characteristics of the Project, it also emphasizes the level of disturbance and deterioration of the surrounding landscape.

In order to understand my conclusion for KOP-6, I have prepared a series of photographs representative of typical viewer experiences while hiking the trail to KOP-6, as well as when visiting KOP-2, The Jawbone Canyon Visitor Center.

Q16. And what do those photos generally show?

BEACON SOLAR ENERGY PROJECT

VISUAL RESOURCES REBUTTAL TESTIMONY

A16. The immediate site surrounding KOP-6 consists of undisturbed mountain landforms and vegetation. The view of the existing project site and surrounding properties is disturbed by past agricultural cropping practices, water and electrical distribution structures, ranch buildings, residential buildings, the railroad track and its embankments, SR-14 freeway, and the Honda Proving Center facility. The area to the south of the project site consists of undisturbed desert landscape.

Q17. You have personally been to KOP-6, correct?

A17. Yes, I have.

Q18. Have you reviewed the Visual Resources section of the Final Staff Assessment for this project?

A18. I have.

Q19. What is your opinion regarding the reliability of the discussion of KOP-6 in that document?

A19. Much of the descriptive information about the location of KOP-6 is incorrect. Chuckwalla Mountain is actually more than two miles to the northwest of KOP-6. The pictures provided in the Final Staff Assessment in Visual Resources Figure 23 were not taken from KOP-6, and appear to be credited to the Sierra Club, whereas the Figures 22 and 24 are applicant-generated photographs and simulations that were provided in the Application for Certification. Although I conferred with Commission Staff when the KOPs were selected, I'd say it is very possible that Commission Staff never visited KOP-6 at all.

Q20. Where your statements above contain opinion, do they express your best professional judgment?

A20. Yes.

Q21. Where your statements contain facts, are they true and correct to the best of your knowledge?

A21. Yes.

Executed at Fort Collins, Colorado on March 7, 2010.



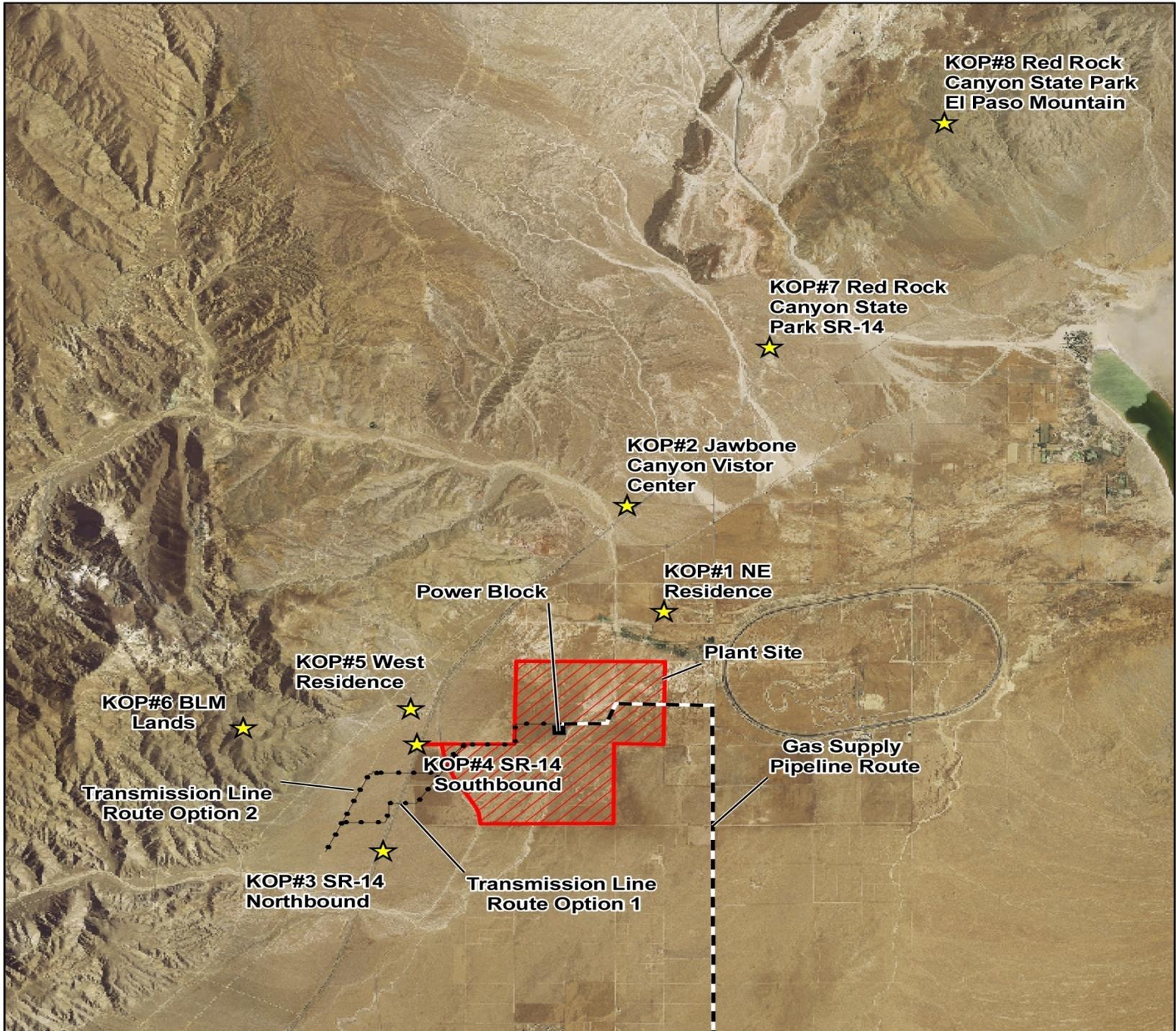
Merlyn Paulson

Beacon Solar Energy Project



Visual Resources Photo-documentation

Testimony of Merlyn Paulson, MLA



project\MXD\ATC_2007_12\Figure_5-15-3_KOPs.mxd



Transfer Station from Pine Tree Canyon Rd.



Aqueduct Pipeline from Pine Tree Canyon Rd



Aqueduct Pipeline from Pine Tree Canyon Rd.



Transfer Station from Pine Tree Canyon Rd.



Trailhead Blight



Trailhead Blight



Trailhead Blight



Trailhead Blight



View of Valley Floor from Trail



View of Honda Track from Trail



View to South from Trail; Aqueduct Pipeline & OHV Trails

View to South from Trail; OHV Trail User & Debris



View to South from Trail; OHV Trail Users





**View to the Southeast from Trail;
Transfer Station**

View of Project Site from Trail; Existing Conditions (Nov. 2009)





Roadside Blight from SR-14



Jawbone Canyon Store from SR-14

KOP-2: View of Project Site; Existing Conditions (Nov. 2009)



KOP-2: Existing Condition Photo from AFC (AFC Figure 5.15-5a)



KOP-2: Simulated Condition Photo from AFC (AFC Figure 5.15-5b)





**KOP-6: Existing Condition Photo from AFC
(AFC Figure 5.15-9a)**



**KOP-6: Simulated Condition Photo from AFC
(AFC Figure 5.15-9b)**

Summary

- Existing views in the general area already have many geometric features and industrial facilities such as the highway, railroad, storage buildings, transmission lines, aqueduct and Honda test track.
- The trails to nearby mountains are mostly used by off-road vehicles and very few hikers.
- The FSA's analysis of existing conditions include visual quality, viewer concern, visibility, number of viewers, and duration of view. Except for visibility, the remaining factors are in the low range from KOP-2 and KOP-6.
- The FSA's analysis of the project involves visual contrast, dominance, view blockage, and visual change. All of these factors are in the low range from KOP-2 and KOP-6.
- In conclusion, the Beacon Solar Energy Project should not be considered to have a significant impact to visual resources based upon the criteria presented in the FSA.

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

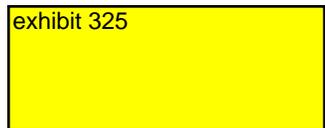
In the Matter of:

Beacon Solar, LLC's)	
Application for Certification of the)	Docket No. 08-AFC-2
Beacon Solar Energy Project)	
_____)	

**BEACON SOLAR, LLC'S BIOLOGICAL RESOURCES REBUTTAL TESTIMONY OF
JENNIFER GUIGLIANO**

March 9, 2010

Jane E. Luckhardt
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FAX: (916) 444-2100



BEACON SOLAR ENERGY PROJECT

BIOLOGICAL RESOURCES REBUTTAL TESTIMONY

**BIOLOGICAL RESOURCES REBUTTAL TESTIMONY OF JENNIFER GUIGLIANO
ON BEHALF OF BEACON SOLAR, LLC IN RESPONSE TO BIOLOGICAL
RESOURCES CONDITIONS OF CERTIFICATION BIO-9, 11, 14, 17, and 18**

Q1. Please state your name and title for the record.

A1. My name is Jennifer Guigliano and I am a Project Director with AECOM.

Q2. Is your resume attached to your declaration marked as Exhibit 272 in this proceeding?

A2. Yes it is.

Q3. Please provide a summary of your qualifications highlighting those areas that apply to the testimony you provide below.

A3. I am a Project Director with a masters in Environmental Engineering and training in natural resources, in addition to biological resources, water resources and storm water management, and environmental compliance and permitting. I have over 12 years of experience in the natural resources management field, including biological resources assessments and management of integrated groups of specialists (biologists, ecologists, scientists, and engineers) working to evaluate the presence of biological resources, environmental impacts of projects, and avoidance, minimization, and mitigation measures for impacts to natural resources, including biological resources. I have worked on multiple projects involving desert tortoise, western burrowing owl, and jurisdictional waters, including field surveying, monitoring, impact assessment, mitigation, and compliance.

Q4. Have you reviewed the Final Staff Assessment (FSA) section addressing Beacon Solar Energy Project (“Project”) impacts to biological resources?

A4. Yes. I have.

Q5. Have you reviewed the revised Condition of Certification (COC) in BIO-9 circulated by California Energy Commission (CEC) Staff on February 9, 2010?

A5. Yes. I have.

Q6. Do you believe the fencing installation requirements in BIO-9 are appropriate?

A6. No. I do not.

Q7. Why not?

A7. The fencing installation survey requirements in Point No. 1 require 15-foot transect spacing per current United States Fish and Wildlife Service (USFWS) guidelines as opposed to the previous 30-foot transect spacing in the COC. BIO-9 was modified to reflect this; however,

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the buffer was not revised and over a 90-foot buffer, that equates to 6 transects around the site to survey for desert tortoise (DT) prior to fence installation as opposed to the prior 3 transects. This is excessive for a low-risk construction activity in a low-risk area where a biologist must also be present during construction activities.

Q8. What is a reasonable buffer area?

A8. Given the reduction in transect spacing, a reduction in the buffer area to 60-feet would be biologically reasonable and results in a survey effort more commensurate with the construction activity and required onsite biological monitoring.

Q9. Do you have other concerns with BIO-9?

A9. Yes. I do.

Q10. What other concerns do you have?

A10. The requirement in Point No. 7 to have a Designated Biologist, or Biological Monitor supervised by a Designated Biologist onsite.

Q11. What is the concern with the requirement to have a biologist onsite?

A11. The requirement to have a Designated Biologist onsite applies to the Plant Site after desert tortoise clearance removal. The intent of installation of the fencing and clearance surveys is to find and relocate any desert tortoise outside of harm's way (outside the fencing) as an impact avoidance/minimization measure. Once the clearance surveys are complete the potential to encounter and harm a desert tortoise is low, particularly on a site where no desert tortoises have been observed.

Q12. What would be a more appropriate condition?

A12. The requirement should be to have a Designated Biologist on call during construction activities within the desert tortoise exclusionary fencing. If a desert tortoise is observed, the Designated Biologist would be contacted and work would be halted until the biologist is able to get to the site to relocate the tortoise out of harm's way.

Q13. Do you have other concerns with BIO-9?

A13. No. I do not.

Q14. Have you reviewed revised Condition of Certification BIO-11 circulated by California Energy Commission Staff on February 9, 2010?

A14. Yes. I have.

Q15. Do you have concerns with the enhancement and/or endowment requirements?

A15. Yes. I do.

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Q16. What concerns do you have?

A16. The enhancement and endowment funds, Points 6 and 7 respectively, require that funds be held in the special deposit fund pursuant to California Government Code section 16370. We had requested that Point 6 be modified to be consistent with Point 7 and that was completed; however, this condition is restrictive of the use of funds for enhancement and/or endowment purposes.

Q17. How is the condition restrictive?

A17. The condition as written would prohibit the use of funds for in-lieu fee programs that may be established for compensatory mitigation purposes.

Q18. How would you modify the condition?

A18. The condition would achieve the same purpose for compensatory mitigation with more flexibility of method by modifying the text to state that the enhancement/endowment will be held in a fund “established for the purpose of enhancing the compensation lands” as opposed to established pursuant to the specific regulation.

Q19. Do you have other concerns with BIO-11?

A19. No. I do not.

Q20. Have you reviewed revised Condition of Certification BIO-12 circulated by California Energy Commission Staff on February 9, 2010?

A20. Yes. I have.

Q21. Do you believe the monitoring requirements in BIO-12 are appropriate?

A21. No. I do not.

Q22. Why not?

A22. As in BIO-9, the expectation to have a Designated Biologist onsite at all time during construction within the DT exclusionary fence is overly burdensome for the construction period and does not acknowledge the purpose of installation of the fencing and subsequent clearance surveys.

Q23. What would be a more appropriate condition?

A23. The requirement in Point No. 2 should be modified to require a biologist only to be onsite in areas outside of desert tortoise exclusionary fencing. For areas within desert tortoise exclusionary fencing, the Applicant should only be required to have a Designated Biologist on call during construction activities. If a desert tortoise is observed, the Designated Biologist would be contacted and work would be halted until the biologist is able to get to the site to relocate the tortoise out of harm’s way.

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Q24. Do you have other concerns with BIO-12?

A24. No. I do not.

Q25. Have you reviewed revised Condition of Certification BIO-14 circulated by California Energy Commission Staff on February 9, 2010?

A25. Yes. I have.

Q26. Do you believe the pond monitoring requirements in BIO-14 are appropriate?

A26. No. I do not.

Q27. Why not?

A27. The pond monitoring requirements in BIO-14, as currently written, could require that a Designated Biologist perform monitoring for the life of the project. Our suggested changes are intended to simply allow for transition of these relatively simple monitoring responsibilities to the Project's Environmental Compliance Manager (ECM) after a reasonable period of time. We believe that since the primary purpose of the monitoring is to identify and report any birds that might become entangled in the netting, this can be effectively implemented by the ECM. We are very open to any other language that might achieve the same objective.

Q28. Do you have other concerns with BIO-14?

A28. No. I do not.

Q29. Have you reviewed revised Condition of Certification BIO-17 circulated by California Energy Commission Staff on February 9, 2010?

A29. Yes. I have.

Q30. Do you believe the requirements for the relocation area monitoring are appropriate?

A30. No. I do not.

Q31. Why not?

A31. The relocation area has been established in addition to offsite mitigation lands. The relocation area does not count toward the compensatory mitigation obligation. It is therefore inappropriate to require remedial actions associated with the relocation area with the exception of reasonable burrow maintenance and invasive plant control. The relocation area does not reflect the success of compensatory mitigation requirements.

Q32. Is the relocation area being established to support the successful passive relocation of burrowing owls?

A32. Yes it is.

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Q33. Is the nesting of owls within the relocation area a necessary measure of the successful passive relocation of burrowing owls?

A33. No it is not.

Q34. Why not?

A34. Passive relocation involves the use of one-way trap doors to exclude burrowing owls from a burrow, followed by verification of exclusion and collapsing of the burrow to prevent reoccupation. Owls are not actively trapped and moved to a specific burrow or relocation area. Therefore, burrowing owls may be selectively using other burrows within their home range. In addition, burrowing owls may use the artificial burrows as waypoints or wintering burrows but not nesting, and this measure fails to consider that use. Therefore, the use of burrows in the relocation area – whether artificial or natural – is not a biologically appropriate measure of relocation success.

Q35. Do you have other concerns with BIO-17?

A35. Yes. I do.

Q36. What other concerns with BIO-17 do you have?

A36. Point No. 4 does not identify the period of maintenance for artificial burrows.

Q37. What is an appropriate maintenance period for functionality?

A37. Maintenance of artificial burrows should not be required beyond the 5-year monitoring period. The relocation site is not part of the compensatory mitigation obligation, but is in addition to the 20 acres of mitigation land that will be acquired for potential impacts to 2 pairs of burrowing owls.

Q38. Do you have other concerns with BIO-17?

A38. Yes. I do.

Q39. What other concerns with BIO-17 do you have?

A39. The compensation lands criteria in Point No. 5a.

Q40. What concerns do you have with the compensation lands criteria in 5a?

A40. This condition requires that the acquisition lands be either capable of currently supporting burrowing owls or be no farther than 5 miles from an active burrowing owl nesting territory. This restricts compensatory land options and may eliminate lands that have potential benefit to the species. There may be lands that have great burrowing owl habitat but for some other reason do not have owls currently onsite.

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Q41. What modification would offer the flexibility needed but still maintain the mitigation goals?

A41. Mitigation lands should be capable of supporting burrowing owl, but not require that they be currently supporting the species.

Q42. Do you have other concerns with BIO-17?

A42. No. I do not.

Q43. Have you reviewed revised Condition of Certification BIO-18 circulated by California Energy Commission Staff on February 9, 2010?

A43. Yes. I have.

Q44. Do you believe the mitigation security requirements area appropriate?

A44. No. I do not.

Q45. Why not?

A45. The compensation as written requires a security that includes separate funding for the offsite mitigation and the onsite revegetation for the rerouted wash. This requirement is excessive and does not reflect the actual method of security holding and expenditure. The security that is held is not used for the actual implementation of the onsite restoration (revegetation) and therefore should the onsite restoration not meet the established success criteria, the security would still be accessible to cover costs of offsite mitigation lands. The security is merely held as “collateral” for the project obligations. There are only two conditions under which the security would be used:

1. The project applicant is not able to complete the project (i.e., goes bankrupt) and the revegetation/onsite mitigation is not complete. In this case, the security may be used to complete the revegetation/restoration effort.
2. If the onsite mitigation is completed but is unsuccessful and offsite mitigation is required subsequently.

Q46. Do you have recommended revisions to the Conditions of Certification you discuss above?

A46. Yes. My recommended revisions to the Conditions of Certification are included in my testimony at Attachment 1.

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**REBUTTAL TO TESTIMONY OF SCOTT CASHEN ON BEHALF OF CALIFORNIA
UNIONS FOR RELIABLE ENERGY**

Q47. Have you reviewed the Testimony of Scott Cashen on Behalf of the California Unions for Reliable Energy on Biological Resources of the Beacon Solar Energy Project, dated November 12, 2009 (“Cashen Testimony”)?

A47. Yes. I have.

Q48. Mr. Cashen asserts that the Applicant did not follow protocol while conducting burrowing owl surveys and that the FSA does not accurately report the data. Mr. Cashen specifically contends that

- 1) The FSA states that in 2007 a total of 27 burrows with burrowing owl sign were identified within the survey area 1-mile buffer. It is not clear whether the burrows were detected inside or outside the Project site. More than half of the burrows occurred on the Project site or along the transmission line corridor.
- 2) The FSA states that two burrowing owls were detected within the Project site boundary in 2007, in association with four active burrowing owl burrows. The Applicant concludes there were two pairs of owls. However, the FSA does not mention a third owl that was detected on-site, and that active burrows were observed near each owl. This results in at least three owl pairs.

The FSA states two burrowing owls were observed outside the Project site during 2008, one within the 1000-ft buffer at the southwest end of the natural gas pipeline corridor next to a burrow. The FSA also states that although one active owl burrow was documented within the 80-acre addition to the Project site, the majority of the other 7 active and 13 potential burrowing owl burrows were located within the 1000-ft buffer associated with the natural gas pipeline corridor. The FSA fails to report that the two burrowing owls were flying when observed so their burrow occupancy status could not be determined. The FSA also fails to explain how a burrow could be active or potentially active, yet not contain an owl. Do you agree with these assertions?

A48. No. Western Burrowing Owl (WBO) surveys were performed according to the protocols outlined in two guidance documents:

1. Burrowing Owl Survey and Mitigation Guidelines, prepared by the California Burrowing Owl Consortium, April 1993 (CBOC Guidelines), a copy of which is attached as Exhibit 6 to the Cashen Testimony.
2. Staff Report on Burrowing Owl Mitigation, California Department of Fish and Game, October 17, 1995 (CDFG Staff Report), a copy of which is attached as Exhibit 7 to the Cashen Testimony.

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This protocol consists of four phases. Phase I protocol stipulates that surveyors “assess the presence of burrowing owl habitat on the project site including a 150-meter (approx. 500 ft.) buffer zone around the project boundary. In addition to the 500-foot buffer surrounding the survey area required by the CBOC Guidelines, as noted earlier, the CEC requires a habitat evaluation within a one-mile buffer surrounding the survey area. Phase II stipulates that “a survey for burrows and owls should be conducted by walking through suitable habitat over the entire project site and in areas within 150 meters (approx 500 ft.) of the project impact zone.” Phase III stipulates that “If the project site contains burrows that could be used by burrowing owls, then survey efforts should be directed towards determining owl presence on the site. Surveys in the breeding season are required to describe if, when, and how the site is used by burrowing owls. If no owls are observed using the site during the breeding season, a winter survey is required.” Phase IV stipulates that a “report should be prepared for CDFG that gives the results of each Phase of the survey protocol.”

In 2007, Phase I, II, and III surveys were conducted for the then-current project area and one-mile buffer of this area and a Phase IV-compliant written report was prepared. On May 8, 2007, an assessment for the presence of burrowing owl habitat on the project site and buffer, stipulated by the protocol and CEC, was conducted, satisfying Phase I of the CBOC Guidelines. Between May 8 and 21, 2007, a survey for burrows and owls was conducted by walking through suitable habitat over the entire project site and buffer stipulated by the protocol and CEC, satisfying Phase II of the CBOC Guidelines. Between May 9 and August 3, 2007, surveys in the breeding season were conducted to describe if, when, and how the site is used by burrowing owls, satisfying Phase III of the CBOC Guidelines. Burrowing owls were observed during the breeding season, eliminating the need for winter surveys.

During these surveys, 27 burrows were detected within the survey area. Of these, 14 burrows were detected within the Project Area, including five burrows with recent WBO sign. Thirteen burrows with sign were detected within the one-mile buffer, including five burrows with recent WBO sign. Only 2 WBO were observed, assumed to be pairs, within the Plant Site. This information was also presented in the BTR and the 2081 application, satisfying Phase IV of the CBOC Guidelines.

No WBO were observed during the groundwater pump test.

In 2008, new locations were added in the Project Area. Phase I, II, and III surveys for western burrowing owl were conducted on the additional locations (i.e., Supplemental Survey Areas for the Plant Site and pipeline route) and a Phase IV-compliant written report was prepared. These locations included an 80-acre area in the north-central portion of the Plant Site, a 14-acre area in the western portion of the Plant Site (north of the dirt access road), and along the pipeline route (with associated buffer out to 1,000 feet per CEC Draft Guidelines).

Between March 28 and 30, 2008, an assessment for the presence of burrowing owl habitat on the project site and buffer stipulated by the protocol and CEC was conducted, satisfying Phase I of the CBOC Guidelines. Between May 28 and 30, 2008, a survey for burrows and owls was conducted by walking through suitable habitat over the additional areas and buffer, stipulated by the protocol and CEC, satisfying Phase II of the CBOC Guidelines. Between May 27 and June

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12, 2008, surveys in the breeding season were conducted to describe if, when, and how the site is used by burrowing owls, satisfying Phase III of the CBOC Guidelines. Burrowing owls were observed during the breeding season, eliminating the need for winter surveys. During these surveys, GIS GPS survey data were referenced to assist with clarifying the results of the 2008 burrowing owl surveys which are presented below:

Plant Site (within 80-acre Supplemental Survey Area) = one active burrow with owl sign.

Plant Site (in buffer of 14-acre Supplemental Survey Area) = one inactive owl burrow with owl sign.

Plant Site Buffer area = one owl individual; two inactive owl burrows, one of which had owl sign.

Natural Gas Pipeline CEC 1,000-ft Buffer = one individual owl in flight; one active burrow with owl present; five inactive burrows with sign; two inactive owl burrows without sign; and nine owl sign observations.

In summary, the 2008 burrowing owl surveys detected three individual owl observations, one of which was associated with an owl burrow; two active burrows, one with sign only and one with owl present; seven inactive burrows with sign; three inactive burrows without sign; and nine observations of owl sign. This information was also presented in the Beacon Solar Energy Project Botanical And Wildlife Special Status Species 2008 Spring Survey Report, satisfying Phase IV of the CBOC Guidelines.

In 2009, a new linear route was added in the Project Area. Phase I, II, and III surveys for western burrowing owl were conducted on this additional route. This route includes an Emergency Access Route at the northeast corner of the Plant Site adjacent to Neuralia Road. Between March 28 and 30, 2008, the assessment for the presence of burrowing owl habitat on the project site and buffer, conducted for the 2008 additional areas, stipulated by the protocol and CEC, was conducted, satisfying Phase I of the CBOC Guidelines. On May 26, 2009, a survey for burrows and owls was conducted by walking through suitable habitat over the additional area and buffer stipulated by the protocol and CEC, satisfying Phase II of the CBOC Guidelines. Between June 1 and 4, 2009, surveys in the breeding season were conducted to describe if, when, and how the site is used by burrowing owls, satisfying Phase III of the CBOC Guidelines. During these surveys, GIS GPS survey data were referenced to assist with clarifying the results of the 2009 breeding season burrowing owl surveys which are presented below:

Emergency Access Route CEC 1,000-ft Buffer = zero WBO present; zero inactive burrows; and no whitewash, bone fragments, pellets, feathers, etc. at any of the burrow locations identified in Phase II.

Burrowing owls were not observed during the breeding season, triggering winter surveys stipulated in the CBOC Guidelines. Although presence of western burrowing owls is already assumed based on earlier surveys and mitigation will occur in accordance with the Conditions of Certification, surveys in the winter season were conducted in January 2010 and a report was submitted to the CEC in March 2010, describing if, when, and how the site is used by burrowing owls, satisfying Phase III of the CBOC Guidelines. No WBO or active sign was observed during the winter surveys.

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Q49. Mr. Cashen contends that 2007 surveys were conducted on the Project site and along several Zone of Influence transects and in 2008 surveys were conducted on the 80-acre and 14-acre parcels, the two transmission line routes, the gas pipeline route, and along associated Zone of Influence transects. He asserts that the surveys were conducted in different areas; the owls and burrows detected in 2007 were not the same as those detected in 2008, and that the observations also should have been independent. Do you agree with these assertions?

A49. No. The results from 2007 and 2008 were determined by following standard protocol guidelines for WBO surveys and present a summary of anticipated WBO presence. No conclusions were made indicating whether the observations were related or independent between years; however, it is not appropriate to make the assumption that they are independent. More than two WBO were not observed in either year within the Plant Site; therefore, impacts are assumed to occur to two pairs. The final number that may be present will be determined when the site is cleared during WBO pre-construction surveys, WBO are passively relocated, and burrows collapsed prior to ground disturbance.

Q50. Mr. Cashen contends that there is no basis for the FSA conclusion that the Project will result in the loss of foraging and breeding habitat for only two burrowing owl pairs, and no explanation why each owl detected would be associated with two active burrows. Mr. Cashen asserts that burrowing owls reuse burrows from one year to the next and cites Green (1983) and Trulio (1994) for the proposition that 76% and 73% (respectively) of owl burrows were reoccupied the following year. Mr. Cashen concludes that Staff's analysis should assume all or most active burrows were, and are, occupied by owls. Do you agree with these assertions?

A50. No. See Answers 48 and 49 above. It is not appropriate to assume that all burrows that had sign are occupied by owls. That conclusion does not follow the CBOC Guidelines or the CDFG Staff Report guidance for WBO and the determination of WBO numbers on a site.

Q51. Mr. Cashen contends that the FSA states that the Project will directly impact nesting burrows and would permanently eliminate a large expanse of habitat. The FSA concludes the habitat loss (2,018 acres) would be off-set through acquisition of 26 acres of suitable habitat. There is no scientific basis to determine if this impact will be reduced to less-than-significant. The FSA requires project owner to acquire and provide funding for 20 acres of land suitable to support a population of burrowing owls. There is no ecological basis to conclude these 20 acres will offset impacts to 2,018 acres of foraging and breeding habitat. Please comment on Mr. Cashen's assertion.

A51. The CEC is incorrect in stating that there are 2,018-acres of habitat loss that would be considered significant. Habitat on the Plant Site is highly degraded and does not present optimal WBO habitat. Mitigation for WBO, per the CBOC Guidelines and CDFG Staff Report guidance, is based upon the number of owls and/or WBO pairs that would be impacted, not on acreage. The CBOC and CDFG mitigation guidelines recommend a ratio of 6.5 to 19.5 acres per pair of WBO (or single individual) impacted, depending on whether the replacement habitat is occupied and/or contiguous with the occupied area to be impacted. The mitigation proposed by the Project is based on those mitigation guidelines.

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Q52. Mr. Cashen states the Designated Biologist is required to conduct pre-construction surveys for burrowing owls in accordance with CDFG guidelines, which are different than those issued by CBOC. The FSA needs to specify whether the Designated Biologist is required to conduct pre-construction surveys that adhere to CBOC (or CDFG) survey guidelines, or conduct pre-construction surveys. Please comment on Mr. Cashen's assertion.

A52. As discussed in Answer 48 above, there are two guidance documents regarding surveying and mitigating for burrowing owl: the CBOC Guidelines and the CDFG Staff Report. The CDFG Staff Report is consistent with and references the guidelines of the CBOC Guidelines. Neither document details the protocol for preconstruction surveys, although they include some criteria (i.e., must be conducted within 30 days of disturbance). Typical preconstruction surveys therefore follow the basic CBOC Guidelines (Phase II/III, as applicable).

The pre-construction surveys are intended to locate and passively relocate any WBO that are occupying the construction zone and to collapse burrows to avoid future impacts to WBO that may reinhabit them. The Designated Biologist will conduct pre-construction surveys in accordance with the CDFG Staff Report guidelines. Pre-construction surveys of suitable habitat in the Project Area will be conducted within 30 days prior to construction to ensure no additional WBO have established territories since the initial surveys. If ground disturbing activities are delayed or suspended for more than 30 days after the pre-construction survey, the site will be resurveyed.

Q53. The FSA states that burrowing owl surveys will be conducted concurrent with desert tortoise clearance surveys. Mr. Cashen claims that this does not seem to be an effective survey approach. Average burrowing owl flushing distance is reported to be 102 ft. from observers on foot. If observers are scanning the ground for desert tortoises and burrows, it seems unlikely that they will be able to detect owls 100 feet away. During the 2007 and 2008 surveys, only one out of nine burrowing owls was detected during desert tortoise surveys. Are surveys for these species conducted concurrently?

A53. It is reasonable and common to do surveys concurrently during preconstruction surveys as those surveys will provide adequate coverage of the area for both DT and WBO.

Preconstruction surveys for WBO that conform to the CBOC Guidelines and CDFG Staff Report are conducted just as Phase II and III WBO surveys are conducted. Specifically, Phase II stipulates that "a survey for burrows and owls should be conducted by walking through suitable habitat over the entire project site and in areas within 150 meters (approx 500 ft.) of the project impact zone." Phase III stipulates that "If the project site contains burrows that could be used by burrowing owls, then survey efforts should be directed towards determining owl presence on the site." In practice, this means that all burrows with WBO present or recent WBO sign redetected during preconstruction surveys conducted concurrent with DT will be subject to additional targeted surveys. Targeted focused surveys of these locations will be conducted to confirm all WBO occurrences and identify locations for passive relocation efforts. These focused surveys are conducted with spotting scopes and binoculars that allow biologists to monitor WBO well in excess of the 102 foot threshold identified by CURE.

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Q54. Mr. Cashen states the FSA requires a Burrowing Owl Mitigation and Monitoring Plan if owls are detected within the impact area or within 500 feet of proposed construction activity. Owls were detected in these areas in 2007 and 2008. CBOC guidelines indicate a site is assumed occupied if at least one burrowing owl has been seen occupying a burrow within the past three years. A Burrowing Owl Mitigation and Monitoring Plan is required to adhere to CBOC guidelines. The approval of the Project without a Burrowing Owl Mitigation and Monitoring Plan is not sufficient to conclude the impacts to burrowing owls will be mitigated. The plan must be subject to public review prior to approval. Please respond to Mr. Cashen's statements.

A54. The Project owner will conduct preconstruction surveys to identify the presence or absence of WBO within 30 days of ground disturbance. If preconstruction surveys do not identify the presence of WBO, a plan that addresses passive relocation and monitoring would not be relevant; however, mitigation would still occur.

The Applicant has presented a proposal for mitigation of loss of WBO habitat to the CEC as part of the Project. A Burrowing Owl Mitigation and Monitoring Plan will be prepared and submitted to CEC and CDFG in accordance with CEQA, the CBOC Guidelines and the CDFG Staff Report, which require approval of the Plan prior to ground disturbance. It is at the discretion of the CEC to require an earlier timeline for approval of this potentially unnecessary Plan.

Q55. The FSA requires the project owner to install no less than four artificial burrows. Mr. Cashen claims this does not meet CDFG's guidelines, which require installation of at least two burrows for each occupied burrow that is destroyed. The FSA indicates that in 2007 alone there were four active burrows. Therefore, at least eight artificial burrows are required to meet CDFG guidelines. Do you agree with Mr. Cashen's claims?

A55. No. Active burrows and occupied burrows are not equivalent. There was no evidence that there were additional pairs beyond the two observed within the Plant Site that would be impacted by the Project. The condition accurately reflects, and is consistent with the CBOC Guidelines that two burrows will be created for each occupied burrow that is detected with WBO pairs during the pre-construction survey.

Q56. The FSA requires the project owner to protect 6 acres for burrowing owl habitat. Mr. Cashen claims this is not in accordance with CDFG mitigation guidelines which require a minimum of 6.5 acres for each pair or unpaired resident owl to be protected. The FSA must be revised to require at least 6.5 acres be protected. CDFG guidelines state the project sponsor should provide funding for long-term management and monitoring of the protected lands. The FSA does not provide this provision, and therefore does not provide assurance that the impacts will be mitigated. Do you agree with Mr. Cashen's claims?

A56. No. The 6-acres is not the only mitigation identified for WBO. The 6-acre conservation area is to support passive relocation and is in addition to the 20-acres of offsite compensation land proposed for impacts to the anticipated two pairs of WBO. Providing 20 acres of offsite mitigation on lands that are assumed to be occupied conforms with the CBOC Guidelines and

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CDFG Staff Report. The 20 acres are assumed to be achievable within the 115 acres of mitigation lands and the required long-term funding associated with those lands. This is stated within the FSA (BIO-17, Point No. 5).

Q57. Mr. Cashen states the FSA states artificial burrows should be at least 150 feet from the impact zone. CDFG guidelines indicate 164 feet. The proposed 6-acre Relocation Area is bisected by roads, 110 feet from the railroad, within 500 feet of several structures, and appears to have vehicle disturbance. These features may prevent the area from serving as mitigation, and may contribute to additional mortality to owls. Please comment on Mr. Cashen's statements.

A57. See response to Question No. 56.

The 6-acre passive relocation area is not bisected by a road. It is located north of the access road. Burrows were already identified in this area with the railroad as a current feature. The burrows will be constructed at least 50-meters (160 feet) from Project disturbance, consistent with the CBOC Guidelines and the CDFG Staff Report.

Q58. Mr. Cashen claims the staff's conditions of certification do not require passive relocation as a measure to minimize Project impacts. CBOC and CDFG mitigation guidelines specify that any passive relocation efforts be conducted outside of the breeding season and the project area should be monitored daily for one week to confirm use of alternate burrows. The FSA does not indicate requirements for passive relocation of burrowing owls, and therefore does not ensure the potential take of owls will be minimized. Will the relocation of WBO be addressed in the relocation plan?

A58. Yes. CEC condition BIO-17 requires preparation of a Burrowing Owl Relocation Area Management Plan for review and approval by the CPM in consultation with CDFG. This document is required to identify the monitoring and management actions and would detail the requirements for passive relocation. The Applicant has already presented a preliminary Burrowing Owl Passive Relocation Area Management Plan to the agencies as part of the comments on the PSA (May 1, 2009). As would be addressed in the Burrowing Owl Mitigation and Monitoring Plan, also required by CEC condition BIO-17, WBO would be mitigated and monitored in accordance with the CBOC Guidelines, which define passive relocation requirements. Alternatively, both plans may be more efficiently combined into a single plan that incorporates the intent of each.

Q59. Mr. Cashen states the FSA does not establish any success criteria for mitigation measures, but rather indicates goals of the 6-acre relocation area: 1) Maintain functionality of at least four artificial or natural burrows; and 2) Minimize the occurrence of weeds at less than 10% cover. These goals are vague and have little relation to the impacts. The FSA needs to establish success criteria and triggers for remediation that relate to Project's impacts. Please discuss the goals for the relocation area.

A59. See response to Question No. 56.

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The goals for the 6-acre passive relocation area are appropriate for conservation of those lands. The offsite compensation lands have independent selection and management criteria for achieving mitigation requirements (BIO-17).

Q60. Mr. Cashen contends that the Applicant's conclusion that impacts will be offset by the acquisition of a small amount of habitat is incorrect because desert habitat enhancement costs can be expensive costing much more than the proposed \$250/acre enhancement fee. Mr. Cashen further asserts that the calculations used to derive compensation were based on increases in carrying capacity resulting from habitat enhancement and are incorrect. Do you agree?

A60. No. The Applicant has presented proposed costs for mitigation, including enhancement and endowment fees to the agencies, including the USFWS, CDFG, and CEC. These costs have been discussed and are in line with previous projects mitigation costs. However, the final security is subject to approval by the resource agencies to ensure adequate mitigation for project impacts. Also, the enhancement fee amount should have no bearing on whether or not the mitigation acreage required to offset impacts is adequate. The enhancement fee is based on the quality and condition of lands acquired for compensatory mitigation and the actions necessary to facilitate initial enhancement of those lands for management and recovery of the species.

Q61. Has AECOM recently completed a winter survey for burrowing owls along the emergency access route?

A61. Yes. The report is attached to my testimony as Attachment 2.

Q62. Is the testimony you have just provided your best professional judgment?

A62. Yes it is.

Q63. Is the testimony you have just provided true and correct to the best of your knowledge?

A63. Yes, it is.

Executed at Falls County, Texas on March 8, 2010.



Jennifer Guigliano

ATTACHMENT 1

BIOLOGICAL RESOURCES

DESERT TORTOISE RELOCATION PLAN, CLEARANCE SURVEYS AND EXCLUSION FENCING

BIO-9

The project owner shall undertake appropriate measures to manage construction at the plant site and linear facilities in a manner to avoid or minimize impacts to desert tortoise. Methods for clearance surveys, fence specifications and installation, tortoise handling, artificial burrow construction, egg handling and other procedures shall be consistent with those described in the current USFWS guidelines, the Desert Tortoise Field Manual (USFWS 2009) (http://www.fws.gov/ventura/speciesinfo/protocols_guidelines) or more current guidance provided by CDFG and USFWS. The project owner shall also implement terms and conditions developed as part of the Habitat Conservation Plan process with USFWS. These measures include, but are not limited to, the following:

1. Fence Installation. Prior to construction-related ground disturbance activities, the entire plant site shall be fenced with permanent desert tortoise-exclusion fence. To avoid impacts to desert tortoise during fence construction, the proposed fence alignment shall be flagged and the alignment surveyed within 24 hours prior to fence construction. Surveys shall be conducted by the Designated Biologist using techniques approved by the USFWS and CDFG. Biological Monitors may assist the Designated Biologist under his or her supervision. These surveys shall provide 100 percent coverage of all areas to be disturbed during fence construction and an additional transect along both sides of the proposed fence line. This fence line transect shall cover an area approximately ~~6090~~ feet wide centered on the fence alignment. Transects shall be no greater than 15 feet apart. All desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, shall be examined to assess occupancy of each burrow by desert tortoises and handled in accordance with USFWS-approved protocol.
 - a. Timing, Supervision of Fence Installation. The exclusion fencing shall be installed prior to the onset of site clearing and grubbing. The fence installation shall be supervised by the Designated Biologist and monitored by the Biological Monitors to ensure the safety of any tortoise present.
 - b. Fence Material and Installation. Tortoise exclusionary fencing shall be installed per USFWS specifications (USFWS 2009).
 - c. Security Gates. Security gates shall be designed with minimal ground clearance to deter ingress by tortoises, including gates that would exclude public access to the transmission line maintenance road at SR 14. The gates shall remain closed except during vehicle passage and may be electronically activated to open and close immediately after vehicle(s) have entered or exited to prevent extended periods with open gates, which might lead to a tortoise entering. Cattle grating designed to safely exclude desert tortoise shall be installed at the gated entries to discourage tortoises from gaining entry.
 - d. Utility Corridor Fencing. Utility corridors and tower locations shall be temporarily fenced with tortoise exclusion fencing to prevent desert tortoise entry during construction. Alternatively, site mobilization activities, construction-related ground disturbance, grading, boring or trenching activities may occur at unfenced utility corridors and tower locations if the Designated Biologist is present at all times in the immediate vicinity of such activities.
 - e. Fence Inspections. Following installation of the desert tortoise exclusion fencing and any temporary fencing in the utility corridors, the fencing shall be regularly inspected. Permanent fencing shall be inspected monthly and during/following all major rainfall

events. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises out of the site, and permanently repaired within two days of observing damage. Inspections of permanent site fencing shall occur for the life of the project. Temporary fencing must be inspected weekly and, where drainages intersect the fencing, during and immediately following major rainfall events. All temporary fencing shall be repaired immediately upon discovery and, if the fence may have permitted tortoise entry while damaged, the Designated Biologist shall inspect the utility corridor or tower site for tortoise.

2. Desert Tortoise Clearance Surveys. Following construction of the tortoise exclusionary fencing around the Plant Site, all fenced areas shall be cleared of tortoises by the Designated Biologist, who may be assisted by Biological Monitors under the supervision of the Designated Biologist. Clearance surveys shall adhere to the current USFWS clearance survey protocols described in the Desert Tortoise Field Manual (USFWS 2009).
3. Relocation for Desert Tortoise West of SR 14. If desert tortoises are detected during clearance surveys within the project impact area west of SR 14, the Designated Biologist shall move the tortoise the shortest possible distance, keeping it out of harm's way but still within its home range. Desert tortoise encountered during construction of any of the utility corridors shall be similarly treated in accordance with the Relocation Plan. Any relocation efforts shall be in accordance with techniques described in the *Guidelines for Handling Desert Tortoise during Construction Projects* (Desert Tortoise Council 1999) or more current guidance on the USFWS website.
4. Relocation/Translocation for Desert Tortoise East of SR-14. To address desert tortoise encountered during clearance surveys within the project impact area east of SR 14, the project owner shall develop and implement a desert tortoise Relocation/Translocation Plan. The Relocation/Translocation Plan shall be consistent with current USFWS approved guidelines (USFWS 2009), and shall be approved by Energy Commission staff in consultation with the USFWS and CDFG. The Relocation/Translocation Plan shall designate a relocation/translocation site as close as possible to the project impact area east of SR 14 that provides suitable conditions for long-term survival of the relocated/translocated desert tortoise.
5. Burrow Inspection. All potential desert tortoise burrows, including rodent burrows that may host juvenile tortoises, within the fenced area shall be searched for presence. In some cases, a fiber optic scope may be needed to determine presence or absence within a deep burrow. To prevent reentry by a tortoise or other wildlife, all burrows shall be collapsed once absence has been determined. Tortoises excavated from burrows shall be relocated/translocated to unoccupied natural or artificial burrows in accordance with procedures outlined in the Relocation/Translocation Plan and consistent with the most current USFWS guidelines (USFWS 2009).
6. Burrow Excavation. Burrows inhabited by tortoises shall be excavated by the Designated Biologist using hand tools, and then collapsed or blocked to prevent re-occupation. If excavated during May through July, the Designated Biologist shall search for desert tortoise nests/eggs. All desert tortoise handling and removal, and burrow excavations, including nests, shall be conducted by the Designated Biologist in accordance with the USFWS-approved protocol (Desert Tortoise Council 1999) or more current guidance on the USFWS website.
7. Monitoring Following Clearing. Following desert tortoise clearance removal from the plant site, and relocation/translocation to a new site, heavy equipment shall be allowed to enter the project site to perform earth work such as clearing, grubbing, leveling, and trenching. A Designated Biologist, or Biological Monitor supervised by the Designated Biologist shall

be ~~on call onsite~~ during initial clearing and grading activities. Should a tortoise be discovered, it shall be relocated/translocated as described above in accordance with the Relocation Plan.

8. Reporting. The Designated Biologist shall record the following information for any desert tortoises handled: a) the locations (narrative and maps) and dates of observation; b) general condition and health, including injuries, state of healing and whether desert tortoise voided their bladders; c) location moved from and location moved to (using GPS technology); d) gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes); e) ambient temperature when handled and released; and f) digital photograph of each handled desert tortoise as described in the paragraph below. Desert tortoise moved from within project areas shall be marked for future identification as described in *current USFWS guidelines, the Desert Tortoise Field Manual (USFWS 2009)* (http://www.fws.gov/ventura/speciesinfo/protocols_guidelines) or more current guidance on the USFWS website. Digital photographs of the carapace, plastron, and fourth costal scute shall be taken. Scutes shall not be notched for identification.

Verification: Within 90 days prior to start of any pre-construction site mobilization activities, the project owner shall submit to Energy Commission Staff, USFWS and CDFG a draft Desert Tortoise Relocation/Translocation Plan. At least 60 days prior to start of any construction-related ground disturbance activities, the project owner shall provide the CPM with the final version of a Relocation/Translocation Plan that has been approved by Energy Commission staff in consultation with USFWS and CDFG. The CPM will determine the plan's acceptability within 15 days of receipt of the final plan. All modifications to the approved Desert Tortoise Relocation/Translocation Plan must be made only after approval by the Energy Commission staff in consultation with USFWS and CDFG. The project owner shall notify the CPM no fewer than 5 working days before implementing any CPM-approved modifications to the Relocation/Translocation Plan.

Within 30 days after initiation of relocation/translocation activities, the Designated Biologist shall provide to the CPM for review and approval, a written report identifying which items of the Relocation /Translocation Plan have been completed, and a summary of all modifications to measures made during implementation.

Within 30 days of completion of desert tortoise clearance surveys the Designated Biologist shall submit a report to the CPM, USFWS, and CDFG describing how each of the mitigation measures described above has been satisfied. The report shall include the desert tortoise survey results, capture and release locations of any relocated desert tortoises, and any other information needed to demonstrate compliance with the measures described above.

RATIONALE

Point No. 1 – The new USFWS requirement for 15-foot transects makes a survey area of 90 feet, centered on the fence alignment, burdensome without substantial benefit. A 60-foot survey area is adequate to detect the presence of species. In addition, a biologist must be onsite to monitor fence construction and subsequently for clearance surveys.

Point No. 7 – The requirement to have a designated biologist onsite at all times during construction within the DT exclusionary fence is overly burdensome for the construction period and does not acknowledge the purpose for installing the fencing and conducting clearance surveys for DT, MGS, and WBO, including collapsing of any burrows found onsite. Having a Designated Biologist on-call after fencing is a standard practice.

DESERT TORTOISE AND MOHAVE GROUND SQUIRREL COMPENSATORY MITIGATION

BIO-11 To fully mitigate for habitat loss and potential take of desert tortoise and Mohave ground squirrel, the project owner shall acquire, in fee or in easement, no less than 115 acres of land

suitable for these species and shall provide funding for the enhancement and long-term management of these compensation lands. The responsibilities for acquisition and management of the compensation lands may be delegated by written agreement to CDFG or to a third party, such as a non-governmental organization dedicated to Mojave Desert habitat conservation, subject to approval by the CPM, in consultation with CDFG and USFWS prior to land acquisition or management activities. If habitat disturbance exceeds that described in this analysis, the project owner shall be responsible for acquisition and management of additional compensation lands or additional funds required to compensate for any additional habitat disturbances. Additional funds shall be based on the adjusted market value of compensation lands at the time of construction to acquire and manage habitat. The acquisition and management of compensation lands shall include the following elements:

1. Selection Criteria for Compensation Lands. The compensation lands selected for acquisition shall:
 - a. be in the western Mojave Desert;
 - b. provide moderate to good quality habitat for Mohave ground squirrel and desert tortoise with capacity to improve in quality and value for these species;
 - c. be a contiguous block of land (preferably) or located so they result in a contiguous block of protected habitat;
 - d. be adjacent to, or in close proximity to, larger blocks of lands that are already protected such that there is connectivity between the acquired lands and the protected lands;
 - e. be connected to, or in close proximity to, lands for which there is reasonable evidence (for example, recent (<15 years) CNDDDB occurrences on or immediately adjacent to the proposed lands) suggesting current occupation by desert tortoise and Mohave ground squirrel, ideally with populations that are stable, recovering, or likely to recover;
 - f. not have a history of intensive recreational use, grazing, or other disturbance that might make habitat recovery and restoration infeasible;
 - g. not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration; and
 - h. not be encumbered by easements, subsurface rights, or uses that would preclude fencing of the site or preclude or unacceptably constrain management of the site for the primary benefit of the species and their habitat for which compensation lands were secured.
2. Review and Approval of Compensation Lands Prior to Acquisition. A minimum of three months prior to acquisition of the property, the project owner, or a third-party approved by the CPM, in consultation with CDFG and USFWS, shall submit a formal acquisition proposal to the CPM, CDFG, and USFWS describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for desert tortoise and Mohave ground squirrel in relation to the criteria listed above. Approval from the CPM, in consultation with USFWS and CDFG,

shall be required for acquisition of all parcels comprising the 115.0 acres in advance of purchase.

3. Mitigation Security for Compensation Lands and Avoidance/Minimization Measures. The project owner or an approved third party shall complete acquisition of the proposed compensation lands prior to initiating construction-related ground disturbance project activities. If Security is provided, the project owner, or an approved third party, shall complete the proposed compensation lands acquisition within 12 months of the start of construction-related ground disturbance activities. The project owner shall also provide financial assurances to the CPM, with copies of the document(s) to CDFG and USFWS, to guarantee that an adequate level of funding is available to implement all impact avoidance, minimization, and compensation measures described in Conditions of Certification BIO-9 through BIO-12. Financial assurance shall be provided to the CPM in the form of an irrevocable letter of credit or another form of security ("Security") approved by the CPM, prior to initiating construction-related ground disturbance activities. If necessary to draw on these funds, such funds shall be used solely for implementation of the measures associated with the project.

Prior to initiation of ground disturbance, the Security shall be provided by the project owner and approved by the CPM, in consultation with CDFG, to ensure funding in the amount of \$529,000.00. These Security amounts were calculated as follows and may be revised upon completion of a Property Analysis Record (PAR) or PAR-like analysis of the proposed compensation lands:

- a. land acquisition costs for compensation lands, calculated at \$3,000/acre for 115 acres: \$345,000.00;
 - b. costs of enhancing compensation lands, calculated at \$250/acre for 115 acres: \$28,750; and
 - c. costs of establishing an endowment for long-term management of compensation lands, calculated at \$1,350/acre for 115 acres: \$155,250.
4. Compensation Lands Acquisition Conditions. The project owner shall comply with the following conditions relating to acquisition of compensation lands after the CPM, in consultation with CDFG and USFWS, has approved the proposed compensation lands and received Security, if any, as described above.
 - a. Preliminary Report: The project owner, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary documents for the proposed 115 acres. All documents conveying or conserving compensation lands and all conditions of title/easement are subject to a field review and approval by the CPM, in consultation with CDFG and USFWS, California Department of General Services and, if applicable, the Fish and Game Commission and/or the Wildlife Conservation Board.
 - b. Title/Conveyance: The project owner shall transfer fee title or a conservation easement to the 115 acres of compensation lands to CDFG under terms approved by CDFG. Alternatively, a non-profit organization qualified to manage compensation lands (pursuant to California Government Code section 65965) and approved by CDFG and the CPM may hold fee title or a conservation easement over the compensation lands. If the approved non-profit organization holds title, a conservation easement shall be recorded in favor of CDFG in a form approved by CDFG. If the approved non-profit holds a conservation easement, CDFG shall be named a third party beneficiary. If a Security is provided, the project owner or an

approved third party shall complete the proposed compensation lands acquisition within 12 months of the start of construction-related ground disturbance activities.

- c. Enhancement Fund. The project owner shall fund the initial protection and enhancement of the 115 acres by providing the enhancement funds to the CDFG. Alternatively, a non-profit organization may hold the enhancement funds if they are qualified to manage the compensation lands (pursuant to California Government Code section 65965) and if they meet the approval of CDFG and the CPM. If CDFG takes fee title to the compensation lands, the enhancement fund must go to CDFG where it will be held in the special deposit fund established for the purpose of enhancing the compensation lands, pursuant to California Government Code section 16370.
- d. Endowment Fund. Prior to construction-related ground disturbance activities, the project owner shall provide to CDFG a capital endowment in the amount determined through the Property Analysis Record (PAR) or PAR-like analysis that will be conducted for the 115 acres of compensation lands. Alternatively, a non-profit organization may hold the endowment fees if they are qualified to manage the compensation lands (pursuant to California Government Code section 65965) and if they meet the approval of CDFG and the CPM. If CDFG takes fee title to the compensation lands, the endowment must go to CDFG, where it will be held in the special deposit fund established for the purpose of managing the compensation lands, pursuant to California Government Code section 16370. If the special deposit fund is not used to manage the endowment, the California Wildlife Foundation shall manage the endowment for CDFG and with CDFG guidance.
 - a. The project owner and the CPM shall ensure that an agreement is in place with the endowment holder/manager to ensure the following conditions:
 - Interest. Interest generated from the initial capital endowment shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action designed to protect or improve the habitat values of the compensation lands.
 - Withdrawal of Principal. The endowment principal shall not be drawn upon unless such withdrawal is deemed necessary by the CDFG or the approved third-party endowment manager to ensure the continued viability of the species on the 115 acres. If CDFG takes fee title to the compensation lands, monies received by CDFG pursuant to this provision shall be deposited in a special deposit fund established pursuant to Government Code section 16370. If the special deposit fund is not used to manage the endowment, the California Wildlife Foundation will manage the endowment for CDFG with CDFG guidance.
 - Pooling Endowment Funds. CDFG, or a CPM- and CDFG-approved non-profit organization qualified to hold endowments pursuant to California Government Code section 65965, may pool the endowment with other endowments for the operation, management, and protection of the 115 acres for local populations of desert tortoise and Mohave ground squirrel. However, for reporting purposes, the endowment fund must be tracked and reported individually.

- e. Reimbursement Fund: The project owner shall provide reimbursement to the CDFG or approved third party for reasonable expenses incurred during title, easement, and documentation review; expenses incurred from other state agency reviews; and overhead related to providing compensation lands.

The project owner is responsible for all compensation lands acquisition/easement costs, including but not limited to, title and document review costs, as well as expenses incurred from other state agency reviews and overhead related to providing compensation lands to CDFG or an approved third party; escrow fees or costs; environmental contaminants clearance; and other site clean up measures.

Verification: No less than 90 days prior to acquisition of the property, the project owner, or a third-party approved by the CPM, in consultation with CDFG and USFWS, shall submit a formal acquisition proposal to the CPM, CDFG, and USFWS describing the parcel(s) intended for purchase.

Draft agreements to delegate compensation lands acquisition to CDFG or an approved third party and agreements to manage compensation lands shall be submitted to Energy Commission staff for review and approval (in consultation with CDFG) prior to compensation lands acquisition. Such agreements shall be mutually approved and executed at least 60 days prior to start of any construction related ground disturbance activities. The project owner shall provide written verification to the CPM that the compensation lands and/or conservation easements have been acquired and recorded in favor of the approved recipient(s). Alternatively, before beginning project ground-disturbing activities, the project owner shall provide Security in accordance with this condition. Within 90 days after the compensation lands purchase, as determined by the date on the title, the project owner shall provide the CPM with a management plan for review and approval, in consultation with CDFG, for the compensation lands and associated funds.

Within 90 days after completion of project construction, the project owner shall provide to the CPM verification that disturbance to Mojave creosote scrub habitat west of State Route 14 did not exceed 5.0 acres, and that construction activities at the plant site and along the gas pipeline alignment did not result in impacts to Mojave creosote scrub habitat adjacent to work areas.

RATIONALE

Point No. C and D – The language was modified to allow CDFG flexibility to apply funds to a fee program, if established, for the purposes of enhancement and/or endowment. The revised language still requires the funding be applied to enhancement and endowment of the compensation lands.

DESERT TORTOISE AND MOHAVE GROUND SQUIRREL COMPLIANCE VERIFICATION

BIO-12 The project owner shall provide staff, CDFG, and USFWS with reasonable access to the project site and compensation lands under the control of the project owner and shall otherwise fully cooperate with the Energy Commission's efforts to verify the project owner's compliance with, or the effectiveness of, mitigation measures set forth in the conditions of certification. The project owner shall hold harmless the Designated Biologist, the Energy Commission and staff, and any other agencies with regulatory requirements addressed by the Energy Commission's sole permitting authority for any costs the project owner incurs in complying with the management measures, including stop work orders issued by the CPM or the Designated Biologist. The Designated Biologist shall do or supervise all of the following:

1. Notification. Notify the CPM, CDFG, and USFWS at least 14 calendar days before initiating construction-related ground disturbance activities. Immediately notify the CPM, CDFG, and USFWS in writing if the project owner is not in compliance with any conditions of certification, including but not limited to any actual or anticipated failure to implement mitigation measures within the time periods specified in the conditions of certification. CDFG shall be notified at their Central Region Headquarters Office, 1234 E.

Shaw Avenue, Fresno, CA 93710; (559) 243-4005. USFWS shall be notified at their Ventura office at 2493 Portola Road, Suite B, Ventura, CA 93003; (805) 644-1766

2. Monitoring During Grading. Remain on site daily while grubbing and grading are taking place outside of the desert tortoise exclusionary fenced areas to avoid or minimize take of listed species, to check for compliance with all impact avoidance and minimization measures, and to check all exclusion zones to ensure that signs, stakes, and fencing are intact and that human activities are restricted in these protected zones.
3. Fence Monitoring. During construction maintain and check desert tortoise exclusion fences on a daily basis to ensure the integrity of the fence is maintained. The Designated Biologist shall be present on site to monitor construction and determine fence placement during fence installation. During operation of the project fence inspections shall occur at least once per month throughout the life of the project, and more frequently after storms or other events that might affect the integrity and function of desert tortoise exclusion fences. Fence repairs shall occur within two days (48 hours) of detecting problems that affect the functioning of the desert tortoise exclusion fencing.
4. Monthly Compliance Inspections. Conduct compliance inspections at a minimum of once per month after clearing, grubbing, and grading are completed and submit a monthly compliance report to the CPM, USFWS and CDFG during construction, as required under COMPLIANCE-6. All observations of listed species and their sign shall be reported to the Designated Biologist for inclusion in the monthly compliance report as required under COMPLIANCE-6.
6. Final Listed Species Mitigation Report. No later than 45 days after initiation of project operation provide the CPM a Final Listed Species Mitigation Report that shall include, at a minimum: 1) a copy of the table in the BRMIMP with notes showing when each of the mitigation measures was implemented; 2) all available information about project-related incidental take of listed species; 3) information about other project impacts on the listed species; 4) construction dates; 5) an assessment of the effectiveness of conditions of certification in minimizing and compensating for project impacts; 6) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future projects on the listed species; and 7) any other pertinent information, including the level of take of the listed species associated with the project.
7. Notification of Injured, Dead, or Relocated Listed Species. In the event of a sighting in an active construction area (e.g., with equipment, vehicles, or workers), injury, kill, or relocation of any listed species, the CPM, CDFG, and USFWS shall be notified immediately by phone. Notification shall occur no later than noon on the business day following the event if it occurs outside normal business hours so that the agencies can determine if further actions are required to protect listed species. Written follow-up notification via FAX or electronic communication shall be submitted to these agencies within two calendar days of the incident and include the following information as relevant:
 - a. Injured Desert Tortoise. If a desert tortoise is injured as a result of project-related activities during construction, the Designated Biologist shall immediately take it to a CDFG-approved wildlife rehabilitation and/or veterinarian clinic. Any veterinarian bills for such injured animals shall be paid by the project owner. Following phone notification as required above, the CPM, CDFG, and USFWS shall determine the final disposition of the injured animal, if it recovers. Written notification shall include, at a minimum, the date, time, location, circumstances of the incident, and the name of the facility where the animal was taken.
 - b. Desert Tortoise/Mohave Ground Squirrel Fatality. If a desert tortoise or Mohave ground squirrel is killed by project-related activities during construction or operation,

or if a desert tortoise or Mohave ground squirrel is otherwise found dead, submit a written report with the same information as an injury report. These desert tortoises shall be salvaged according to guidelines described in *Salvaging Injured, Recently Dead, Ill, and Dying Wild, Free-Roaming Desert Tortoise* (Berry 2001). The project owner shall pay to have the desert tortoises transported and necropsied. The report shall include the date and time of the finding or incident.

8. **Stop Work Order.** The CPM may issue the project owner a written stop work order to suspend any activity related to the construction or operation of the project to prevent or remedy a violation of one or more conditions of certification (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or candidate species. The project owner shall comply with the stop work order immediately upon receipt thereof.

Verification: No later than two calendar days following the above-required notification of a sighting, kill, injury, or relocation of a listed species, the project owner shall deliver to the CPM, CDFG, and USFWS via FAX or electronic communication the written report from the Designated Biologist describing all reported incidents of the sighting, injury, kill, or relocation of a listed species, identifying who was notified and explaining when the incidents occurred. In the case of a sighting in an active construction area, the project owner shall, at the same time, submit a map (e.g., using Geographic Information Systems) depicting both the limits of construction and sighting location to the CPM, CDFG, and USFWS.

No later than January 31st of every year the BSEP facility is under construction or remains in operation the Designated Biologist shall provide the CPM, CDFG and USFWS an annual Listed Species Status Report, and a summary of desert tortoise exclusion fence inspections and repairs conducted in the course of the year. The Listed Species Status Report shall include, at a minimum: 1) a general description of the status of the project site and construction/operation activities, including actual or projected completion dates, if known; 2) a copy of the table in the BRMIMP with notes showing the current implementation status of each mitigation measure; 3) an assessment of the effectiveness of each completed or partially completed mitigation measure in minimizing and compensating for project impacts, and 4) recommendations on how effectiveness of mitigation measures might be improved. The annual Listed Species Status Report shall be **[INCOMPLETE SENTENCE]**

RATIONALE

Same issue as for BIO-9, No. 7. The requirement to have a designated biologist onsite at all times during construction within the DT exclusionary fence is overly burdensome for the construction period and does not acknowledge the purpose for installing the fencing and conducting clearance surveys for DT, MGS, and WBO, including collapsing of any burrows found onsite. Having a Designated Biologist on-call after fencing is a standard practice.

EVAPORATION POND NETTING AND MONITORING

BIO-14 The project owner shall cover the evaporation ponds prior to any discharge with 1.5-inch mesh netting designed to exclude birds and other wildlife from drinking or landing on the water of the ponds. Netting with mesh sizes other than 1.5-inches may be installed if approved by the CPM in consultation with CDFG and USFWS. The netted ponds shall be monitored regularly to verify that the netting remains intact, is fulfilling its function in excluding birds and other wildlife from the ponds, and does not pose an entanglement threat to birds and other wildlife. The ponds shall include a visual deterrent in addition to the netting, and the pond shall be designed such that the netting will never contact the water. Monitoring of the evaporation ponds shall include the following:

- The Designated Biologist or Biological Monitor shall regularly survey the ponds at least once per month starting with the first month of operation of the evaporation ponds. The

purpose of the surveys shall be to determine if the netted ponds are effective in excluding birds, if the nets pose an entrapment hazard to birds and wildlife, and to assess the structural integrity of the nets. Surveys shall be of sufficient duration and intensity to provide an accurate assessment of bird and wildlife use of the ponds during all seasons. Surveyors shall be experienced with bird identification and survey techniques. Operations staff at the BSEP site shall also report finding any dead birds or other wildlife at the evaporation ponds to the Designated Biologist within one day of the detection of the carcass. The Designated Biologists shall report any bird or other wildlife deaths or entanglements within two days of the discovery to the CPM, CDFG, and USFWS.

- If dead or entangled birds are detected, the Designated Biologist shall take immediate action to correct the source of mortality or entanglement. The Designated Biologist shall make immediate efforts to contact and consult the CPM, CDFG, and USFWS by phone and electronic communications prior to taking remedial action upon detection of the problem, but the inability to reach these parties shall not delay taking action that would, in the judgment of the Designated Biologist, prevent further mortality of birds or other wildlife at the evaporation ponds.
- If after 12 ~~consecutive~~ monthly site visits no significant bird or wildlife deaths or entanglements are detected by or reported to the Designated Biologist, monitoring can be reduced to quarterly visits, and with approval from the CPM, USFWS and CDFG, future surveys can be conducted by the Environmental Compliance Manager.
- If after 12 ~~consecutive~~ quarterly site visits no significant bird or wildlife deaths or entanglements are detected by or reported to the Designated Biologist, ~~and with approval from the CPM, USFWS and CDFG, future surveys can be conducted by the Environmental Compliance Manager and~~ the site visits can be reduced to two surveys per years, during spring and fall migration.

Verification: No less than 30 days prior to operation of the evaporation ponds the project owner shall provide to the CPM as-built drawings and photographs of the ponds indicating that the bird exclusion netting has been installed. For the first year of operation the Designated Biologist shall submit quarterly reports to the CPM, CDFG, and USFWS describing the dates, durations and results of site visits conducted at the evaporation ponds. Thereafter the Designated Biologist shall submit annual monitoring reports with this information. The quarterly and annual reports shall fully describe any bird or wildlife death or entanglements detected during the site visits or at any other time, and shall describe actions taken to remedy these problems. The annual report shall be submitted to the CPM, CDFG, and USFWS no later than January 31st of every year for the life of the project.

RATIONALE

Bullets 3 and 4 –With the netting installed, the DB should not be required to do surveys for the life of the project. That is overly burdensome without substantial benefit. The ECM should be able to identify if birds are trapped within the netting. If birds are trapped, information can be collected for identification.

BURROWING OWL IMPACT AVOIDANCE, MINIMIZATION, AND COMPENSATION MEASURES

BIO-17 The project owner shall implement the following measures to avoid and offset impacts to burrowing owls:

1. Pre-Construction Surveys. The Designated Biologist shall conduct pre-construction surveys for burrowing owls within the project site and along all linear facilities in accordance with CDFG guidelines (CDFG 1995). If burrowing owls are detected within the impact area or within 500 feet of any proposed construction activities, the Designated Biologist shall prepare a Burrowing Owl Monitoring and Mitigation Plan in consultation with CDFG, USFWS, and Energy Commission staff. This plan shall include detailed

measures to avoid and minimize impacts to burrowing owls in and near the construction areas and shall be consistent with CDFG guidance (CDFG 1995).

2. Artificial Burrow Installation. Prior to any ground-disturbing activities, the project owner shall install no less than four artificial burrows, or at least two burrows for each owl displaced by the project, in the proposed relocation area immediately north of the project site, a 6-acre area within the 14.39-acre parcel owned by Beacon Solar, LLC, (APN 469-14-011). Design of the artificial burrows shall be consistent with CDFG guidelines (CDFG 1995). The Designated Biologist shall survey the site selected for artificial burrow construction to verify that such construction will not affect desert tortoise or Mohave ground squirrel. The design of the burrows shall be approved by the CPM in consultation with CDFG and USFWS.
3. Surveys of Relocation Area. The Designated Biologist shall survey the relocation area during the nesting season to assess use of the artificial burrows by owls using methods consistent with Phase II and Phase III Burrowing Owl Consortium Guideline protocols (CBOC 1993). Surveys shall start upon completion of artificial burrow construction and shall continue for a period of five years. ~~If survey results indicate burrowing owls are not nesting on the relocation area, remedial actions shall be developed and implemented in consultation with the CPM, CDFG and USFWS to correct conditions at the site that might be preventing owls from nesting there.~~
4. Protect and Manage 6-Acre Relocation Area. The project owner shall provide a mechanism to protect 6 acres of the 14.39-acre relocation area in perpetuity as habitat for burrowing owls, either in fee title, or as a permanent deed restriction. The project owners shall prepare a draft Burrowing Owl Relocation Area Management Plan for review and approval by the CPM in consultation with CDFG. The overall objective of the plan shall be to manage the 6-acre relocation parcel for the benefit of burrowing owls, with the specific goals of:
 - a. Maintaining the functionality of at least four artificial or natural burrows for the 5-year monitoring period; and
 - b. Minimizing the occurrence of weeds (species considered “moderate” or “high” threat to California wildlands as defined by CAL-IPC [2006] and noxious weeds rated “A” or “B” by the California Department of Food and Agriculture and any federal-rated pest plants [CDFA 2009]) at less than 10 percent cover of the shrub and herb layers.

The Burrowing Owl Relocation Area Management Plan shall include monitoring and maintenance requirements, details on methods for measuring compliance goals and remedial actions to be taken if management goals are not met.

5. Acquire 20 Acres of Burrowing Owl Habitat. In addition to protecting the 6 acre relocation area north of the project site, the project owner shall acquire, in fee or in easement, 20 acres of land suitable to support a resident population of burrowing owls and shall provide funding for the enhancement and long-term management of these compensation lands. The responsibilities for acquisition and management of the compensation lands may be delegated by written agreement to CDFG or to a third party, such as a non-governmental organization dedicated to Mojave Desert habitat conservation, subject to approval by the CPM, in consultation with CDFG and USFWS prior to land acquisition or management activities. Additional funds shall be based on the adjusted market value of compensation lands at the time of construction to acquire and manage habitat. Agreements to delegate land acquisition to CDFG or an approved third party and to manage compensation lands shall be implemented within 12 months of the Energy Commission’s License Decision.

- a. Burrowing Owl Compensation Lands Criteria. The terms and conditions of this acquisition or easement shall be as described in BIO-11, with the additional criteria to include: 1) the 20 acres of mitigation land must provide suitable habitat for burrowing owls, and 2) the acquisition lands must be either capable of currently supporting burrowing owls or be no farther than 5 miles from an active burrowing owl nesting territory. The 20 acres of burrowing owl compensation lands may be included with the 115 acres of desert tortoise and Mohave ground squirrel compensation lands ONLY if these two burrowing owl criteria are met.
- b. Security. If the 20 acres of burrowing owl compensation land is separate from the 115 acres required for desert tortoise and Mohave ground squirrel compensation lands the project owner or an approved third party shall complete acquisition of the proposed compensation lands prior to initiating construction-related ground disturbance activities. Alternatively, financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") prior to initiating construction-related ground disturbance activities. Prior to submittal to the CPM, the Security shall be approved by the CPM, in consultation with CDFG, to ensure funding in an amount determined by a Property Analysis Record (PAR) or PAR-like analysis of the proposed compensation lands.

Verification: Within 60 days prior to start of any construction -related ground disturbance activities, the project owner shall submit to the CPM, CDFG and USFWS a draft Burrowing Owl Relocation Area Management Plan. Within 30 days prior to any construction-related ground disturbance activities on the project site the project owner shall submit to the CPM a final Burrowing Owl Relocation Area Management Plan that reflects review and approval by Energy Commission staff in consultation with CDFG and USFWS.

If pre-construction surveys detect burrowing owls within 500 feet of proposed construction activities, the Designated Biologist shall provide to CDFG, USFWS, and the CPM a Burrowing Owl Monitoring and Mitigation Plan at least 30 days prior to the start of any project-related site disturbance activities. The project owner shall report monthly to CDFG, USFWS, and the CPM for the duration of construction on the implementation of burrowing owl avoidance and minimization measures described in the Burrowing Owl Monitoring and Mitigation Plan. Within 30 days after completion of construction the project owner shall provide to the CDFG and CPM a written construction termination report identifying how mitigation measures described in the plan have been completed.

No less than 90 days prior to acquisition of compensation lands, the project owner, or a third-party approved by the CPM, in consultation with CDFG and USFWS, shall submit a formal acquisition proposal to the CPM, and CDFG, and USFWS describing the 20-acre parcel intended for purchase. Prior to start of any construction-related ground disturbance activities the project owner shall provide written verification to the CPM that the 20 acres of compensation lands and/or conservation easements have been acquired and recorded in favor of the approved easement holder(s). Alternatively, before beginning construction-related ground disturbance activities, the project owner shall provide Security to the CPM in accordance with this condition. Within 90 days of the compensation land or easement purchase, as determined by the date on the title, the project owner shall provide the CPM with a management plan for review and approval, in consultation with CDFG, for the compensation lands and associated funds.

If the 20 acres of burrowing owl compensation land is separate from the 115 acres required for desert tortoise and Mohave ground squirrel compensation lands, the project owner shall fulfill the requirements described in BIO-11, including submittal of a formal acquisition proposal no less than 90 days prior to acquisition, and a management plan within 30 days after the compensation land purchase.

No later than January 31st of each year, commencing with the first year of construction and ending at the fifth year following initiation of construction, the Designated Biologist shall submit a report to the CPM, CDFG and USFWS describing survey results and remedial actions taken at the 6-acre burrowing owl relocation area. Thereafter no later than January 31st of each year the project is in operation the Designated Biologist shall provide to the CPM, CDFG and USFWS a report describing the results of monitoring and management of the 6-acre burrowing owl relocation area.

RATIONALE

Point No. 3 – The statement regarding success of the relocation area being based upon successful nesting in the burrows establishes an unreasonable criteria for success because WBO may be using other burrows within their home range, and they may use burrows for wintering but not nesting. The WBO population in the area also is not dense, which provides WBOs in the area with more opportunity to pick and choose amongst available burrows. Therefore the use of burrows in the relocation area – whether artificial or natural – is not a biologically appropriate measure of relocation success. Furthermore, the 6-acre conservation area is being provided for relocation and not for compensatory mitigation. An additional 20 acres of compensation lands are being acquired to fully mitigate impacts to WBO. In accordance with the 1993 CBOC Guidelines and CDFG 1995 Staff Report, WBO impacts are mitigated by the acquisition of offsite acreage at a rate commensurate with the number of pairs/individuals impacted and the quality of habitat acquired. The Project is proposing to acquire occupied habitat offsite to compensate for impacts to 2 pairs of WBO (based on survey data), based on 6.5 acres per pair, which is equivalent to a 13-acre compensatory mitigation requirement. The project is acquiring 20 acres for WBO, more than the amount required under the CBOC Guidelines and CDFG Staff Report.

STREAMBED IMPACT MINIMIZATION AND COMPENSATION MEASURES

BIO-18 The project owner shall compensate for permanent impacts to waters of the state by constructing a new channel that replicates the hydrological and biological functions of the impacted drainages, and shall establish a channel maintenance program. The channel created by the applicant shall: be designed to be geomorphologically equivalent to a typical desert wash system; maintain existing hydrological connections and levels of sediment transport; provide conditions that would support recruitment and maintenance of native vegetation, provide wildlife habitat, and maintain the biological functions and values of a natural desert wash ecosystem; be designed, constructed and maintained such that it would not create a movement barrier or hazard for desert tortoise or other wildlife, or be a source of invasive weeds. The project owner shall also implement Best Management Practices and other measures described below to protect jurisdictional waters of the State occurring along linear alignments. The project owner shall implement the following measures to compensate for impacts to waters of the state:

1. Submit Channel Design for Review: No later than 60 days prior to start of site mobilization, the project owner shall submit channel design and construction drawings for review and approval by the CPM in consultation with CDFG, as described in Soil&Water-5. The channel shall be designed such that it would remain accessible to desert tortoise and other wildlife at all times (i.e., all side slopes 3:1 or more gradual, with textured soil cement that would enhance traction for tortoise), and would promote a slightly aggradational (depositional) pattern of sediment deposition to allow for natural geomorphic processes;
2. Prepare a Desert Wash Revegetation Plan that follows the outline provided for rehabilitation plans described in Newton and Claassen (2003), *Appendix C: Sample*

Outline for a Rehabilitation Plan. The Desert Wash Revegetation Plan shall meet the following criteria at the end of the 10-year revegetation period¹:

- a. Establishment of at least 15 percent native desert wash shrub cover within the channel bottom (6.2 acres total within the 41.5-acre channel bottom, and under no circumstances less than 4.8 acres);
 - b. Establishment of at least 7 percent native desert wash shrub cover on each of the 11 channel reaches between drop structures;
 - c. Maintain percent cover of noxious weeds (defined as non-native species that pose a “moderate” or “high” threat to California wildlands as defined by CAL-IPC (2006) within the channel) below 2 percent within the channel bottom (less than 0.8 total within the 41.5-acre channel bottom);
3. Acquire Off-Site Desert Wash: If at the end of the 10-year revegetation period the success criteria defined in the Desert Wash Revegetation Plan have not been achieved, the project owner shall acquire, in fee or in easement, land that includes at least 16 acres of desert wash state jurisdictional waters and their immediate watershed. Prior to acquisition the applicant shall prepare an acquisition proposal for review and approval by Energy Commission staff and CDFG describing the 16 acres of state waters and the surrounding watershed, and shall ensure that the acquired parcel(s) include sufficient area to manage the lands. The responsibilities for acquisition and management of the compensation lands may be delegated by written agreement to CDFG or to a third party, such as a non-profit organization dedicated to Mojave Desert habitat conservation, subject to approval by the CPM, in consultation with CDFG and RWQCB prior to land acquisition or management activities. Additional funds shall be based on the adjusted market value of compensation lands at the time of construction to acquire and manage habitat. The terms and conditions of this acquisition or easement shall be as described in **BIO-11**, with the additional criteria that the desert wash mitigation lands: 1) include at least 16 acres of state jurisdictional waters; 2) be characterized by similar soil permeability and hydrological and biological functions as the impacted wash; and 3) be within the same watershed as the impacted wash.
4. Review and Approval of Compensation Lands Prior to Acquisition. A minimum of three months prior to acquisition of the compensation lands, the project owner, or a third-party approved by the CPM, in consultation with CDFG, shall submit a formal acquisition proposal to the CPM and CDFG describing the parcel(s) intended for purchase. This acquisition proposal shall include a description and delineation of waters of the state within the parcel(s); shall describe the immediate watershed in the vicinity of the drainage; and shall identify the area of lands surrounding the drainage needed to adequately manage the waters of the state to protect and enhance their biological functions and values. Approval from the CPM, in consultation with CDFG, shall be required for acquisition of all parcels comprising the compensation lands in advance of purchase.
5. Security for Implementation of Mitigation: A security in the form of an irrevocable letter of credit, pledged savings account, or certificate of deposit for the amount of all mitigation measures pursuant to this condition of certification shall be submitted to, and approved by, the CPM, in consultation with CDFG, prior to commencing project activities within waters of the state. The security shall be approved by the CPM, in consultation with CDFG’s legal advisors, prior to its execution, and shall allow the CPM at its discretion to recover funds immediately if the CPM, in consultation with CDFG, determines there has been a default. Security shall include an amount

¹ The 10-year revegetation period begins upon completion of construction of the new channel.

equal to the final cost estimate for implementation of the Desert Wash Revegetation Plan, as described above in item 2. In addition, security shall include the costs of purchasing sufficient land to ensure acquisition of a minimum of 16 acres of desert wash state jurisdictional waters.

Prior to initiation of ground disturbance, the security shall be approved by the CPM, in consultation with CDFG, to ensure funding for the required mitigation (onsite restoration or offsite acquisition). The amount of the security shall be based on the amount of the final estimated cost of implementing the Desert Wash Revegetation Plan over a 10 year period. The security deposit shall be no less than \$230,000, as estimated for the cost of sufficient acreage to ensure acquisition of 16 acres of desert wash state jurisdictional waters, should onsite mitigation not succeed. ~~in the amount of \$230,000 plus the final estimated cost of implementing the Desert Wash Revegetation Plan over a ten-year period. The security amounts shall include the costs of implementing the Desert Wash Revegetation Plan over a ten-year period, and the costs of acquisition of 50 acres that includes at least sufficient acreage to ensure acquisition and management of 16 acres of desert wash plus the immediate watershed and floodplain state jurisdictional waters. The required acreage may be less than 50 acres, and will depend on the area of adjacent watershed and floodplain needed to adequately protect and manage the 16 acres of waters of the state.~~ The minimum security amount is based on 50 acres, an estimated amount of acreage needed for acquisition of 16 acres of state jurisdictional waters. Security costs for land acquisition were calculated as follows and may be revised upon completion of a Property Analysis Record (PAR) or PAR-like analysis of the proposed compensation lands:

- land acquisition costs for compensation lands, calculated at \$3,000/acre for 50 acres: \$150,000;
 - costs of enhancing compensation lands, calculated at \$250/acre for 50 acres: \$12,500; and
 - costs of establishing an endowment for long-term management of compensation lands, calculated at \$1,350/acre for 50 acres: \$67,500.
7. Long-Term Monitoring and Management. Long-term monitoring and management of the channel shall begin at the end of the 10-year revegetation period and shall continue for the life of the project as described in SOIL&WATER-8, and shall occur regardless of the success or failure of the revegetation effort. The goals of the long-term monitoring shall be to:
- a. Maintain percent cover of noxious weeds (defined as non-native species that pose a “moderate” or “high” threat to California wildlands as defined by CAL-IPC (2006) within the channel) below 2 percent within the channel bottom (less than 0.8 total within the 41.5-acre channel bottom).
 - b. Maintain the channel as safe for desert tortoise and other wildlife. At no time shall the channel pose an entrapment hazard to desert tortoise and other wildlife. An entrapment hazard is defined as a depression, pit or trench with a depth of one foot or greater and a slope steeper than 3:1.

Inspections to assess percent weed cover within the channel shall be conducted by the Designated Biologist no less than once per year and only within the peak growing season for weedy annual herbs (February 1 through April 30th). Inspections to assess entrapment hazards for desert tortoise and other wildlife shall occur within 1 day of major storm events. The same remedial actions for managing weeds and entrapment hazards described in the Desert Wash Revegetation Plan shall be employed during the long-term monitoring. Entrapment hazards shall be corrected immediately upon detection.

8. Equipment Laydown Plan: The project owner shall develop a Storm Water Pollution Prevention Plan for construction activities that includes an engineered plan for the proposed equipment laydown area within the existing wash, as described in Soil&Water 3. This engineered plan shall describe protective structures, procedures for moving equipment, fuels and materials, and plan for conveyance of stormflows, during a rainfall event. Prior to initiation of any project activities in jurisdictional areas and no later than 60 days after publication of the Energy Commission Decision, the project owner shall submit this plan for review and approval by the CPM in consultation with CDFG.
9. Right of Access and Review for Compliance Monitoring: The CPM reserves the right to enter the project site and/or allow CDFG to enter the project site at any time to ensure compliance with these conditions. The project owner herein grants to the CPM and to CDFG employees and/or their representatives the right to enter the project site at any time, to ensure compliance with the terms and conditions and/or to determine the impacts of storm events, maintenance activities, or other actions that might affect the restoration and revegetation efforts. The CPM and CDFG may, at the CPM's discretion, review relevant documents maintained by the operator, interview the operator's employees and agents, inspect the work site, and take other actions to assess compliance with or effectiveness of mitigation measures.
12. Code of Regulations: The project owner shall provide a copy of the Energy Commission License Decision to all contractors, subcontractors, and the applicant's project supervisors. Copies shall be readily available at work sites at all times during periods of active work and must be presented to any CDFG personnel or personnel from another agency upon demand. The CPM reserves the right to issue a stop work order or allow CDFG to issue a stop work order after giving notice to the project owner and the CPM, if the CPM in consultation with CDFG, determines that the project owner has breached any of the terms or conditions or for other reasons, including but not limited to the following:
 - a. The information provided by the applicant regarding streambed alteration is incomplete or inaccurate;
 - b. New information becomes available that was not known to it in preparing the terms and conditions;
 - c. The project or project activities as described in the Final Staff Assessment have changed; or
 - d. The conditions affecting biological resources changed or the CPM, in consultation with CDFG, determines that project activities will result in a substantial adverse effect on the environment.
13. Construction Schedule: Pine Tree Creek and the unnamed desert wash shall not be altered until the new channel is constructed and deemed by the CPM ready to accept stormwater flows.
14. Best Management Practices: The applicant shall also comply with the following conditions:
 - a. The project owner shall not allow water containing mud, silt, or other pollutants from grading, aggregate washing, or other activities to enter a lake or flowing stream or be placed in locations that may be subjected to high storm flows.
 - b. The project owner shall comply with all litter and pollution laws. All contractors, subcontractors, and employees shall also obey these laws, and it shall be the responsibility of the operator to ensure compliance.

- c. Spoil sites shall not be located within a drainage or locations that may be subjected to high storm flows, where spoil shall be washed back into a drainage or lake.
- d. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, resulting from project-related activities, shall be prevented from contaminating the soil and/or entering waters of the state. These materials, placed within or where they may enter a drainage or lake, by project owner or any party working under contract or with the permission of the project owner shall be removed immediately.
- e. No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into, or placed where it may be washed by rainfall or runoff into, waters of the state.
- f. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any drainage.
- g. No equipment maintenance shall occur within or near any stream channel where petroleum products or other pollutants from the equipment may enter these areas under any flow.

Verification: Within 90 days prior to any construction-related ground disturbance activities, the project owner shall submit to the CPM and CDFG a draft Desert Wash Revegetation Plan and a draft estimate of costs to fully implement the plan. Within 30 days prior to any construction-related ground disturbance activities within waters of the State, the project owner shall submit to the CPM a final Desert Wash Revegetation Plan and a final cost estimate for implementation of revegetation monitoring and management activities that reflects review and approval by Energy Commission staff in consultation with CDFG.

No later than 90 days prior to any construction-related ground disturbance activities, the project owner shall submit channel design and construction drawings for review and approval by the CPM in consultation with CDFG, as described in **Soil&Water-5**.

No fewer than 30 days prior to the start of any construction-related ground disturbance activities, the project owner shall implement the mitigation measures described above. No fewer than 30 days prior to the start of work potentially affecting jurisdictional waters of the state, the project owner shall provide written verification (i.e., through incorporation into the BRMIMP) to the CPM that the above best management practices will be implemented and provide a discussion of work in jurisdictional waters of the state in Compliance Reports for the duration of the project. Compliance reports shall be monthly for the first five years following completion of construction of the channel, and thereafter shall be submitted annually per COMPLIANCE-7

No less than 90 days prior to acquisition of the desert wash compensation acreage the project owner, or a third-party approved by the CPM, in consultation with CDFG, shall submit a formal acquisition proposal to the CPM and CDFG describing the parcel(s) intended for purchase.

The project owner shall notify the CPM and CDFG, in writing, at least five days prior to initiation of project activities in jurisdictional areas as noted and at least five days prior to completion of project activities in jurisdictional areas. The project owner shall notify the CPM and CDFG of any change of conditions to the project, the jurisdictional impacts, or the mitigation efforts, if the conditions at the site of a proposed project change in a manner which changes risk to biological resources that may be substantially adversely affected by the proposed project. The notifying report shall be provided to the CPM and CDFG no later than seven days after the change of conditions is identified. As used here, change of condition refers to the process, procedures, and methods of operation of a project; the biological and physical

characteristics of a project area; or the laws or regulations pertinent to the project as defined below. A copy of the notifying change of conditions report shall be included in the annual reports.

- a. Biological Conditions: a change in biological conditions includes, but is not limited to, the following: 1) the presence of biological resources within or adjacent to the project area, whether native or non-native, not previously known to occur in the area; or 2) the presence of biological resources within or adjacent to the project area, whether native or non-native, the status of which has changed to endangered, rare, or threatened, as defined in section 15380 of Title 14 of the California Code of Regulations.
- b. Physical Conditions: a change in physical conditions includes, but is not limited to, the following: 1) a change in the morphology of a river, stream, or lake, such as the lowering of a bed or scouring of a bank, or changes in stream form and configuration caused by storm events; 2) the movement of a river or stream channel to a different location; 3) a reduction of or other change in vegetation on the bed, channel, or bank of a drainage, or 4) changes to the hydrologic regime such as fluctuations in the timing or volume of water flows in a river or stream.
- c. Legal Conditions: a change in legal conditions includes, but is not limited to, a change in Regulations, Statutory Law, a Judicial or Court decision, or the listing of a species, the status of which has changed to endangered, rare, or threatened, as defined in section 15380 of Title 14 of the California Code of Regulations.

After completion of the 10-year monitoring period for the Desert Wash Revegetation Plan, the project owner shall thereafter submit an annual report to the CPM and CDFG. The report shall describe the methods and results of the long term monitoring inspections for weed and entrapment hazards within the channel. The report also shall include a discussion of remedial actions taken, if any, and shall be submitted no later than January 31st of every year for the life of the project. If any entrapped animals/carcasses are detected CDFG and USFWS shall be notified in writing within 48 hours.

RATIONALE

Point No. 5 – The condition as written requires a security that includes separate funding for the offsite mitigation and the onsite revegetation of the rerouted wash. This requirement is excessive and does not reflect the actual method of security holding and expenditure. The security that is held is not used for the actual implementation of the onsite restoration (revegetation) and therefore should the onsite restoration not meet the established success criteria, the security would still be accessible to cover costs of offsite mitigation lands. The security is held as “collateral” for the project obligations. There are only two conditions under which the security would be used:

1. *The project applicant reroutes the wash but does not complete the project. In this case, the security may be used to complete the onsite revegetation/restoration of the wash.*
2. *The onsite mitigation is completed but is unsuccessful, and offsite mitigation therefore is required.*

ATTACHMENT 2



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February 2, 2010

Kenneth Stein
NextEra Energy Resources, Inc.
700 Universe Boulevard
Juno Beach, Florida 33408

**Subject: Report Summarizing Results of the Beacon Solar Energy Project
Emergency Access Route Winter 2010 Burrowing Owl Presence/Absence
Surveys**

Dear Mr. Stein:

This letter summarizes results of focused protocol surveys conducted by AECOM Technology Corporation (AECOM) to evaluate the presence or absence of the western burrowing owl (*Athene cunicularia*; WBO) within the proposed emergency access route for the proposed Beacon Solar Energy Project. AECOM conducted protocol surveys on behalf of NextEra Energy Resources, Inc. (NextEra) in support of environmental documentation required by the California Energy Commission (CEC).

Project Description

The Beacon Solar Energy Project is located along the State Route 14 (SR-14) corridor, approximately 10 miles north-northwest of California City, approximately 15 miles north-northeast of the Town of Mojave, and approximately 24 miles northeast of the City of Tehachapi, in Kern County, California (Figure 1). The proposed project site is located south of Jawbone Canyon and to the east of Highway 14 in the Fremont Valley. An emergency access route to the proposed energy project site was habitat assessed, and then surveyed in mid-May 2009 for DT and WBO. The proposed emergency access route connects Neuralia Road to the southern and eastern portions of the proposed project site. The proposed emergency access route is approximately 0.5 miles long (12 feet wide), extending north from Neuralia Road into the proposed project area towards Highway 14 (Figure 2). For the purpose of this report, the proposed emergency access route plus the WBO survey buffer around the access route will be referred to as the project survey area.

Project Area

The majority of the project survey area has been previously disturbed by past agricultural and grazing activities, although portions of the area are gradually in the process of recolonization with native desert saltbush scrub vegetation. The soil has high salinity and capped off irrigation pipes form a line along the northern side of the proposed emergency access route. There are sinkholes throughout the project survey area, presumable created by erosion, run-off and underground pipe leaks in various locations. Groups of sinkholes (some over 10 feet deep) occur in various areas within the project survey area.

Topography of the project survey area is generally flat, with elevation approximately 2,020 feet above mean sea level. Vegetation communities that occur within and around the project survey area are primarily ruderal and fallow agricultural fields with saltbush (*Atriplex* spp.)

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scrub, red brome (*Bromus rubens*), storksbill (*Erodium cicutarium*), and Russian thistle (*Salsola tragus*). Scattered irrigation pipes, and piles of debris occur around the project survey area. The soil is primarily loose, with high clay content. Very few rodent burrows occur and they are primarily small (less than 3 inches across). The habitat is disturbed with little annual forb cover remaining and large patches of non-native Russian thistle. A few small drainages occur throughout the site, but they are filled with decaying Russian thistle.

Background Information

Regulatory Status

The WBO is considered a species of special concern by the California Department of Fish and Game (CDFG) due to intensive development pressure on the species habitat (CDFG 2009). The species is also covered under the West Mojave Plan (2005).

Habitat Status

Habitat consists of annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation (Zarn 1974; California Burrowing Owl Consortium [CBOC] 1993). Suitable WBO habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of WBO habitat and both natural and artificial burrows provide protection, shelter, and nests for WBO. WBO typically use burrows made by mammals, such as ground squirrels or badgers, but may also use man-made structures, such as cement culverts, riprap, cement asphalt or wood debris piles, or openings beneath cement or asphalt pavement. WBO may use a site for migratory stopovers, or year-round for breeding and foraging. Suitable habitat is considered occupied if there is an observation of at least one WBO, or WBO sign including molted feathers, cast pellets, prey remains, eggshell fragments, or feces around a burrow. WBO tend to exhibit high site fidelity, reusing the same site year after year. A site is considered occupied if a WBO has been observed occupying a burrow there within the last 3 years (Rich 1984; Feeney 1992).

Population Status

WBO in California are generally nonmigratory and occur mostly in the Central and Imperial Valleys, primarily in agricultural areas. Small, scattered populations occur in the Mojave desert. The West Mojave Plan documents 53 records of WBO in the east Mojave desert (Campbell 2004), only 5 of which are confirmed breeding pairs. Population density seems to be correlated with prey availability, particularly small mammals (Klute et al. 2003).

Survey Methodology

A WBO habitat assessment (Phase I) of the emergency access route was surveyed by Sierra Nevada Environmental (SNEI) biologists (on behalf of AECOM) between May 5 and 11, 2008. SNEI biologists (on behalf of AECOM) conducted a survey for burrows and WBO (Phase II) on May 26, 2009 using east/west transects focusing on visual signs of WBO

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(burrows, pellets, owl splash, etc.). All data was recorded with a Global Positioning System Garmin 60 CSx and recorded in Table 1. Since desert tortoise (*Gopherous agassizii*; DT) were known to occur in the area, DT surveys were also conducted within the project survey area. For DT surveys, biologists surveyed 100 percent of the proposed emergency access route, and Zone of Influence surveys occurred at 100 feet, 300 feet, 600 feet, and 1,200 feet from the center of the emergency access route. This survey was conducted concurrently with DT surveys because 100 percent visual coverage of the 500-foot buffer zone was attained while surveying the 100 foot, 300 foot, and 600 foot Zones of Influence for DT (CBOC 1993).

Nesting season WBO surveys, census, and mapping (Phase III) were conducted by AECOM biologists between June 1 and June 4, 2009. Because no WBO were observed during these surveys, winter season WBO surveys, census, and mapping (Phase III) surveys were indicated according to the protocol established by the CBOC (1993) and accepted by the CDFG.

AECOM biologists Andrew Fisher and Michael Ireland conducted presence/absence surveys for wintering WBO between January 12 and 15, 2010. Details regarding survey times are provided in the results section of this report. Andrew Fisher has 3 years of experience as a wildlife biologist in southern California, and regularly conducts habitat assessments and focused surveys for various wildlife species, including raptors, WBO, and for various federally threatened and endangered song birds. Michael Ireland has 7 years of wildlife biological survey experience throughout California, conducting focused surveys, habitat assessments, and pre-construction surveys for various federal and state listed wildlife species, including WBO.

WBO surveys were performed according to the protocol established by the CBOC (1993) and accepted by the CDFG. In addition to the 500 foot buffer surrounding the proposed project area required by CBOC protocol, any potential WBO sign, pellets, or burrows that were detected during DT surveys outside the 500 foot survey buffer were included in the survey. Anything found within the 600 foot or 1,200 foot Zones of Influence (for DT) were also surveyed for WBO. Therefore, the total project survey area included the proposed emergency access route, plus a survey buffer out to 1,200 feet (Figure 2).

To locate WBO, surveyors walked the entire survey area attaining 100 percent visual coverage, stopping at all waypoints recorded during Phase II and prior Phase III surveys and other observation points that provided a wide view and scanned for owls and burrows with 10 by 42 power binoculars. Vehicles were used as blinds, when possible, to minimize disturbance to owls. Surveyors approached the recorded waypoints on foot, carefully verifying presence or absence of WBO at those locations. Burrows, perches, or other areas where WBO might live and forage from were searched during each survey for new WBO sign. All WBO locations were mapped using GPS units.

Results

Generally, there were very few suitable burrows or other features for WBO to occupy, and no burrows detected were clearly utilized by WBO. There was no whitewash, bone fragments, pellets, feathers, etc. at any of the burrow locations. Although nine burrows or sinkholes were encountered and recorded in the project survey area, the likelihood of WBO using these for breeding or shelter in winter is minimal. The soil is too loose for a stable WBO burrow and soil around the sinkholes is gradually caving in. The sinkholes also have a large entrance making these openings unsuitable for WBO because mammalian predators (e.g., coyotes, foxes) can crawl into the sinkholes. Table 1 describes any sign of WBO that was detected within the project survey area and the locations of these resources are identified in Figure 3.

Table 1
Waypoints, Lat/Long, and Notes of Potential WBO Burrows and Sign (Phase II and III)

Type of Sign	Latitude	Longitude	Notes
Burrow 1	35.27227	-117.987	Rodent burrow, sandy soil, 0.3 x 0.2 feet
Sinkhole 1	35.27249	-117.992	Sinkhole, potential use by WBO, no sign, 0.5 x 0.2 feet
Sinkhole 2	35.27297	-117.988	Sinkhole, potential use by WBO, no sign, 2.3 x 0.6 feet
Sinkhole 3	35.27378	-117.991	Sinkhole, potential use by WBO, no sign, 2.8 x 0.7 feet
Sinkhole 4	35.26881	-117.987	Sinkhole, beehive inside, 1.0 x 0.7 feet
Sinkhole 5	35.26896	-117.988	Sinkhole, bird splash near entrance, rodent scat inside, Potential use by WBO, 0.7 x 0.5 feet
Pallet 1	35.26895	-117.988	Rabbit pallet, potential use by WBO, 0.7 x 0.4 feet
Owl Pellet 1	35.26892	-117.995	Owl cough pellet full of insects near fence post southwest of access road
Owl Pellet 2	35.27189	-117.988	Owl cough pellet full of insects in open in 500 foot buffer zone
Avian Splash 1	35.27218	-117.988	Avian splash
Avian Splash 2	35.27226	-117.99	Avian splash on irrigation pipes
Avian Splash 3	35.27243	-117.99	Avian splash on irrigation pipes
Avian Splash 4	35.27244	-117.99	Avian splash on irrigation pipes
Avian Splash 5	35.27244	-117.989	Avian splash on irrigation pipes
Avian Splash 6	35.27241	-117.987	Avian splash on irrigation pipes
Avian Splash 7	35.2726	-117.992	Avian splash on irrigation pipe with wooden platform
Sinkhole 6	35.2742	-117.989	Sinkhole, potential use by WBO, old white wash, 1.5 x 0.7 feet
Sinkhole 7	35.2731	-117.988	Sinkhole, potential use by WBO, old white wash, one degraded loggerhead shrike cough pellet near hole and one large, degraded cough pellet near hole, 0.7 x 1.0 feet
PVC Pipes 1	35.26852	-117.987	Pile of 2-10 foot segments of four-inch and larger PVC pipe, no sign

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Each of the waypoints in Table 1 was visited four times on four consecutive days during Phase III winter season WBO protocol surveys (January 12-15, 2010) conducted by AECOM biologists. These waypoints include the 16 locations identified during Phase II surveys and three additional locations identified on January 12, 2010. Two of the new waypoints were sinkholes with avian splash in the vicinity of sinkhole 2. The third was a recently-dumped pile of four-plus inch diameter polyvinyl chloride (PVC) pipe scraps, two to ten feet in length, in the vicinity of sinkhole 4. No WBO were detected with the project survey area. Table 2 describes the dates, pertinent survey information, and any WBO or new sign detected during the Phase III winter season surveys. Copies of field data sheets are provided in Appendix A.

**Table 2
 Dates, Times, Personnel, Weather Conditions, and Observations for WBO Phase III Surveys**

Survey #	Date	Time	Personnel	Weather	Observations
1	01/12/2010	1459-1759	Andrew Fisher Michael Ireland	Start: 72°F, 0% clouds, wind W 11.2 mph End: 62°F, 0% clouds, wind W 7.6 mph	No WBO or new sign observed
2	01/13/2010	1500-1800	Andrew Fisher Michael Ireland	Start: 62°F, 5% clouds, wind W 9.8 mph End: 48°F, 5% clouds, wind W 19.7 mph	No WBO or new sign observed
3	01/14/2010	1501-1801	Andrew Fisher Michael Ireland	Start: 68°F, 0% clouds, wind W 1.0 mph End: 49°F, 0% clouds, wind W 1.0 mph	No WBO or new sign observed
4	01/15/2010	0600-0900	Andrew Fisher Michael Ireland	Start: 35°F, 5% clouds, wind W 0.0 mph End: 51°F, 90% clouds, wind W 0.0 mph	No WBO or new sign observed

Discussion

Across all WBO surveys, no WBO were detected anywhere within the project survey area. Among the 16 waypoints initially observed during the breeding season surveys and observed again during the winter season and 3 added waypoints observed during the winter season, no new WBO sign was detected during the winter season surveys, and all sign found in and around the project survey area was very old. Of the two cough pellets from owls observed during the nesting season surveys, one was no longer present and the other had significantly deteriorated. Of the two cough pellets observed initially during the winter surveys, one is from a loggerhead shrike, the other is particularly large (approximately 14mm diameter) and not likely to be from a WBO, and both of these pellets are deteriorated. The burrow observed during the nesting season surveys was too small to accommodate WBO and was collapsed four inches into the burrow. Since the burrow observed in the

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project survey area was small, and unstable, it is unlikely that WBO would use it for breeding. The sinkholes in the area were generally too large for WBO to use them since the risks of predation with a large burrow entrance are high, though the deteriorated sign indicates that WBO have used the site at some point for foraging. The segments of PVC pipe were all open at both ends increasing the risk of predation and no sign of WBO was present.

Due to the poor soil condition and historical disturbance activities, very few fossorial mammals such as ground squirrels, foxes, or badgers use the site. Therefore there are very few potential burrows for WBO to use. The habitat is open enough for WBO, but lacks the presence of burrows to support breeding WBO or winter shelter. There are some piles of debris and human artifacts (open irrigation pipes, concrete, rock, and wood piles) that may have potential for WBO use during winter. However, after a close examination of all potential burrow locations, no WBO sign was found during the recent surveys.

One sensitive wildlife species was observed in the survey area during WBO surveys, the loggerhead shrike (*Lanius ludovicianus*; LOSH; CDFG Species of Special Concern; Figure 4). LOSH detections were mapped and displayed in Figure 5. They seem to reflect the movement of one pair using the southern edge of the project survey area as part of their territory. In addition, two northern harriers were separately observed foraging in the survey area. All other wildlife species detected during WBO surveys are listed in Appendix B.

Certification Statement

Qualified AECOM biologists who conducted WBO surveys for the Beacon Solar Energy Project emergency access road certify that the information in this survey report fully and accurately represents the work performed by AECOM biologists. Signatures of AECOM biologists (i.e., Andrew Fisher, Michael Ireland) who conducted protocol surveys are included below. The results of focused surveys for listed species are typically considered valid for one year by the resource agencies. If you have any questions or require additional information, feel free to contact me at (619) 233-1454.

Sincerely,



Jennifer Guigliano
Project Director



Andrew Fisher
Wildlife Biologist



Michael Ireland
Wildlife Biologist

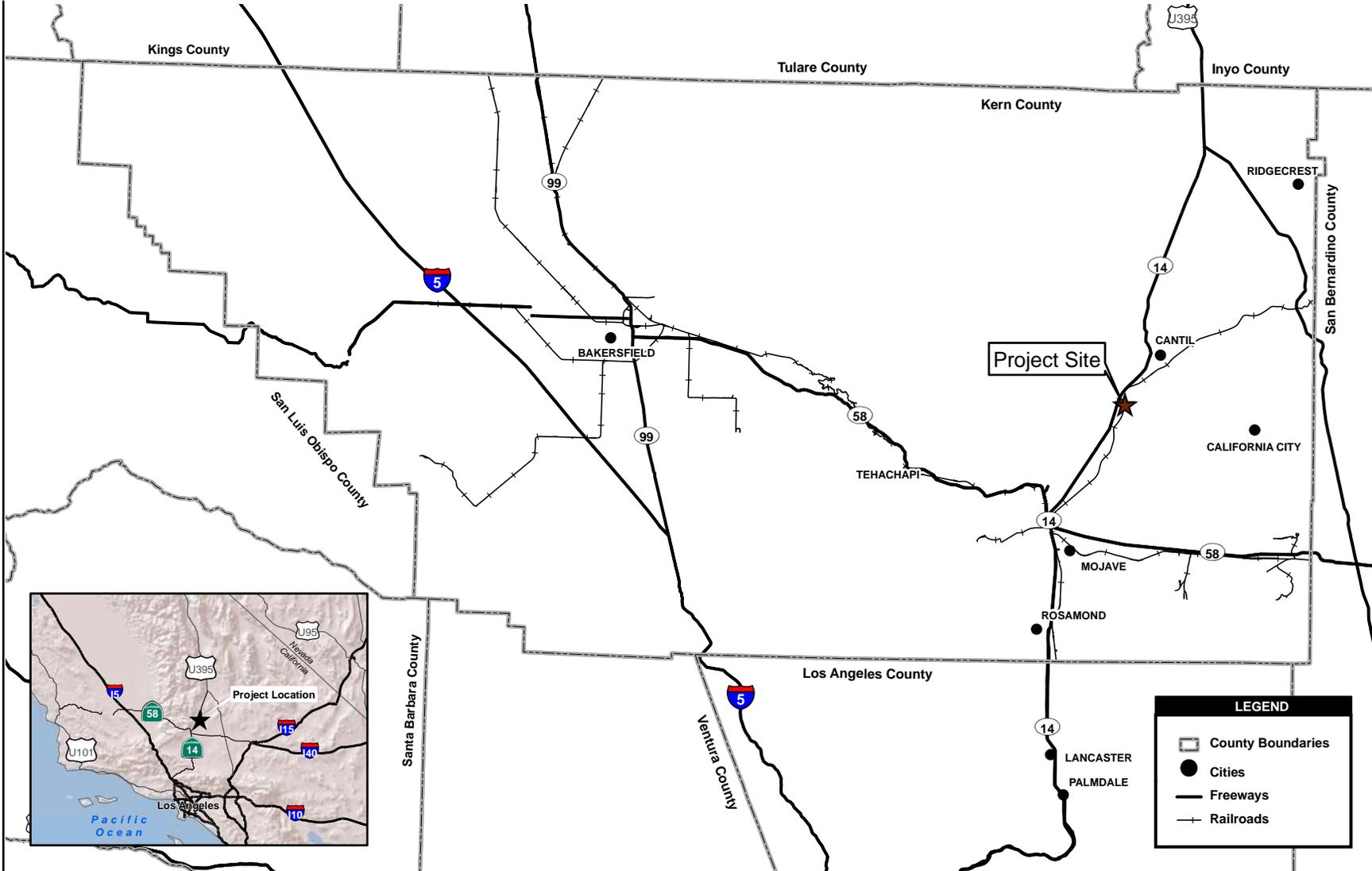
Attachments: Figure 1 – Regional Map
Figure 2 – Vicinity Map
Figure 3 – Burrowing Owl Resources
Figure 4 – Sensitive Wildlife Species Detected
Appendix A – Field Data Sheets
Appendix B – Wildlife Species Detected during Burrowing Owl Surveys

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FIGURES



Source: ESRI 2007; Kern County 2007



Figure 1
Regional/Vicinity Location Map

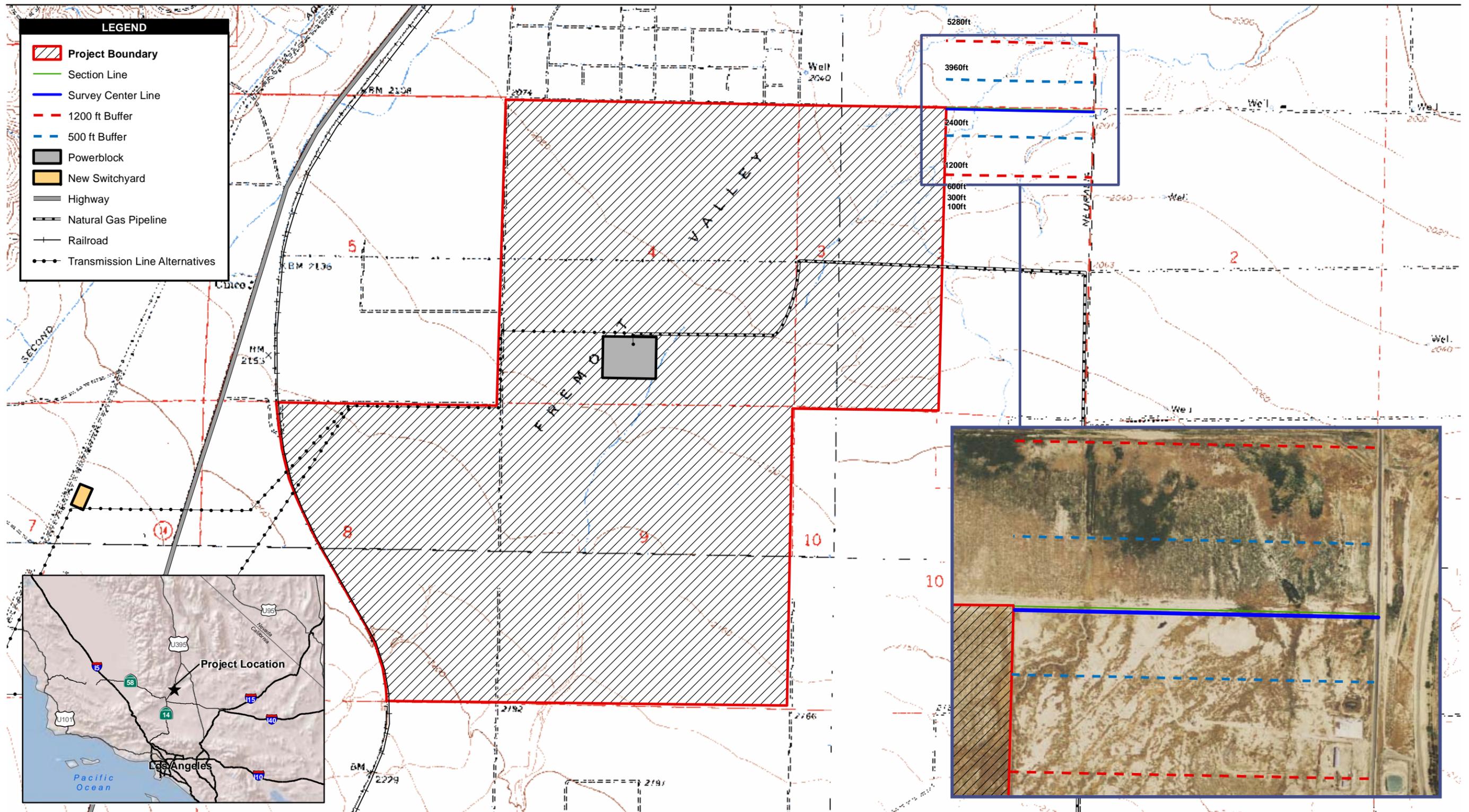
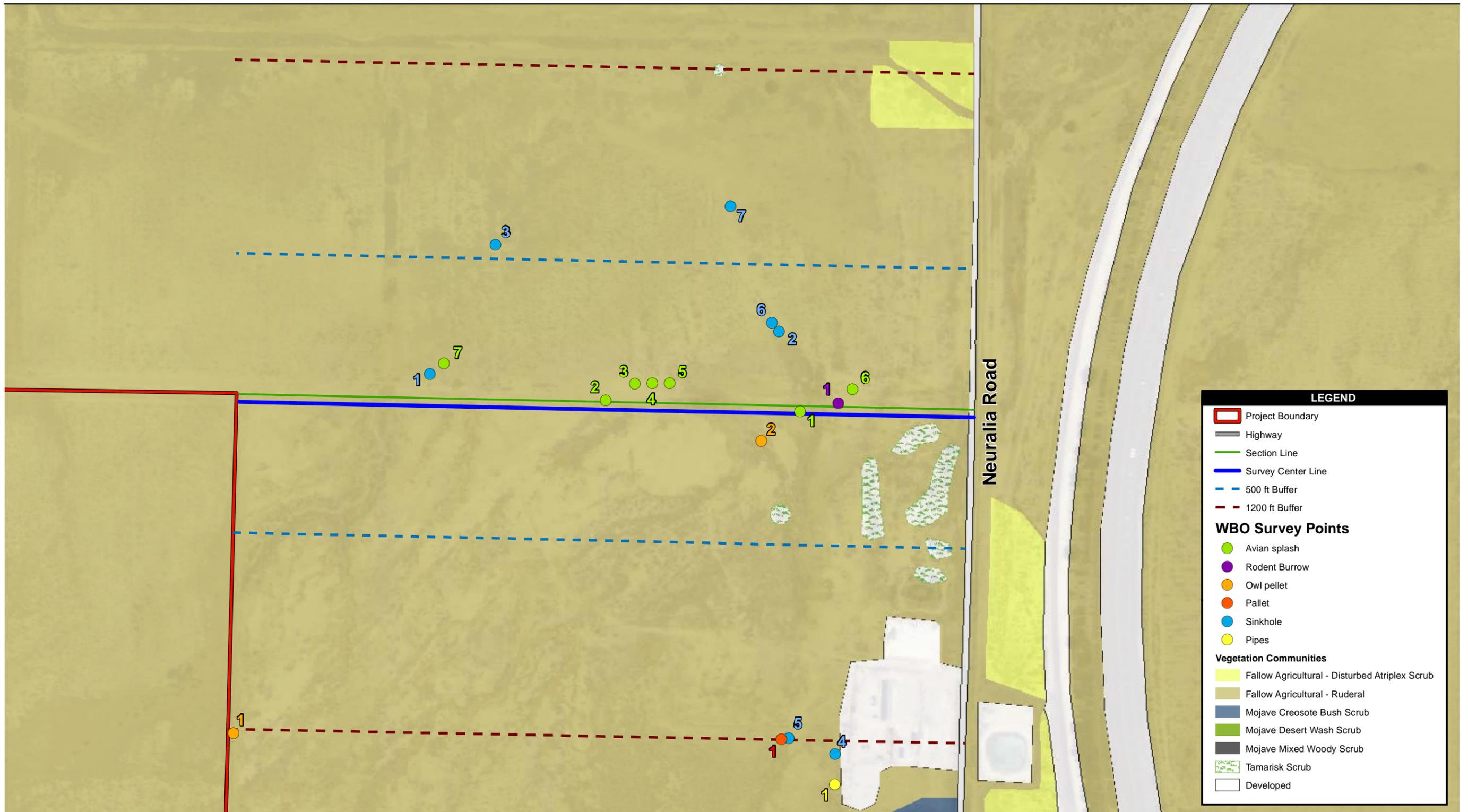


Figure 2
Project Boundary and Survey Area



Source: USDA NAIP Orthophotos 2009; AECOM 2007-2010

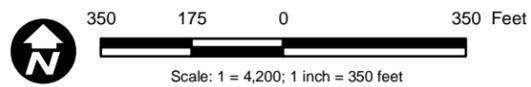
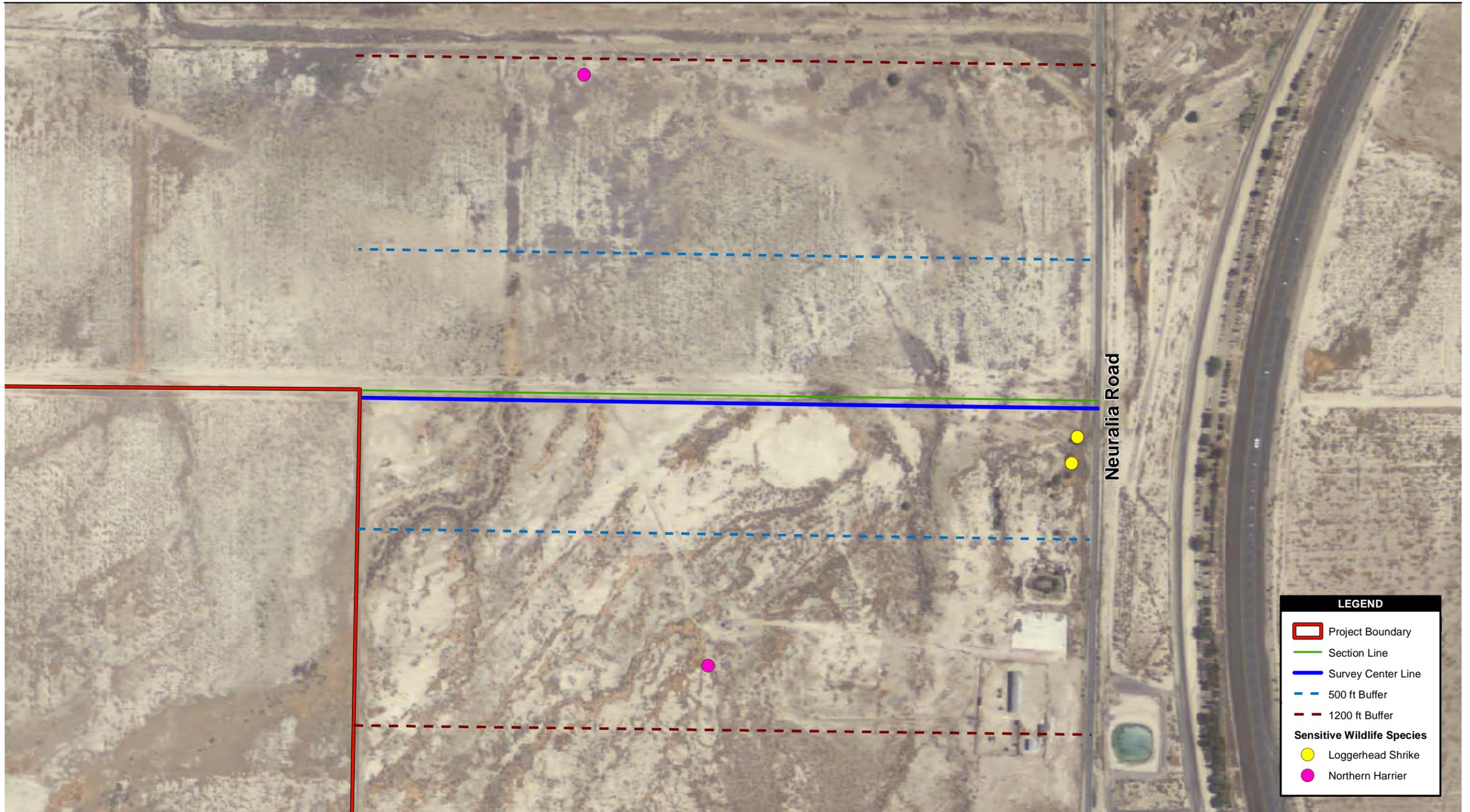


Figure 3
Potential Burrowing Owl Resources



LEGEND

- Project Boundary
- Section Line
- Survey Center Line
- 500 ft Buffer
- 1200 ft Buffer

Sensitive Wildlife Species

- Loggerhead Shrike
- Northern Harrier

Source: TetraTech 2007; Kern County 2007; USGS 2007; CNDDDB 2007; Peggy Wood 2007; AECOM 2007 2009; USDA NAIP 2009

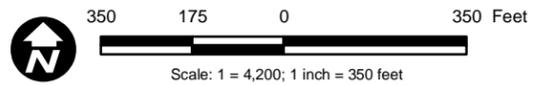


Figure 4
Other Sensitive Wildlife Species Detected

APPENDIX A
FIELD DATA SHEETS

Burrowing Owl (BW) Survey

Recorder: Andrew Fisher
 Project: _____
 GPS Unit: GTE 4
 START Time: 1459
 END Time: 1759

Add'l Person: Mike Ireland
 Survey Sxn: _____
 Survey Type: _____
 Temp (F°): 72.1
 Temp (F°): 62

Date: 1-12-2010
 Map #: _____
 Survey 1 of 4
 Wind/Dir: 11.2 W % CC/Pcp: 0
 Wind/Dir: 1.6 W % CC/Pcp: 0

Burrow Number	BW Presence	BW Sign Presence ¹ (circle)	Observations (note Burrow Condition, or note BW-# activity)
Burrow 1		W P T B S Other	No Burrow Sign Burrow too small
Avian Sp 6		W P T B S Other	Very old splash.
Avian Sp 3		W P T B S Other	doesn't exist - gone
Owl Pellet 2		W P T B S Other	doesn't exist - gone
Avian Sp 4		W P T B S Other	Very old and deteriorating
Avian Sp 5		W P T B S Other	" " " "
Avian Sp. 3		W P T B S Other	" " " "
Avian Sp 2		W P T B S Other	Very old some recent splash + bird feathers (not Burrow) no pellets a few old bones - nothing diagnostic for Burrow
Avian Sp 7		W P T B S Other	Some fresh splash - too big for Burrow
Sink Hole 1		W P T B S Other	No Burrow Sign
Sink Hole 3		W P T B S Other	Some old, white wash/splash near burrow entrance; Sink hole w/ horizontal hole ~ 8 in wide on side of sink hole - in thick wash in hole + it goes back about 2 feet - some potential for Burrow
Owl Pellet 1		W P T B S Other	No Pellet - some white wash on Post + Jack rabbit skull.
Owl Pellet 1		W P T B S Other	No Burrow Sign
Sink Hole 5		W P T B S Other	No Burrow Sign - run up + erosion here or carved burrow ~ 4 in across and goes back 1 foot + ends. Small rodent scat in burrow.
Sink Hole 4		W P T B S Other	Old beehive, - no Burrow sign - burrow filled w/ old honey comb
Sink Hole 2		W P T B S Other	No bird sign - very large dome shaped burrow
Beacon Burrow 01		W P T B S Other	Large potential Burrow burrow w/ old white wash - no pellets + no feathers
Beacon Burrow 02		W P T B S Other	White wash and pellets of potential Burrow
		W P T B S Other	Sink hole w/ lots of white wash
		W P T B S Other	Sign in old sink hole doesn't really go back ~ 1/2 foot - not a real burrow.
		W P T B S Other	
		W P T B S Other	
Comments			
TSWD spp: SASP; CORA, NOLA SVSP, HWT, Kit fox Scat Coyote Scat, Jack rabbit, Rong, WCSSP Burrow pellet + feathers, SPPH			

Sink hole 6
Sink hole 7

Burrowing Owl (BW) Survey

Recorder: Mike Ireland
 Project: BSEP
 GPS Unit:
 START Time: 1550
 END Time: 1800

Add'l Person: Andrew Fisher
 Survey Sxn: Fin. Access Road
 Survey Type: Phase III BBO
 Temp (F°): 67
 Temp (F°): 49

Date: Jan 13, 2010
 Map #:
 Survey 7 of 4
 Wind/Dir: 9.8 W % CC/Pcp: 5% / 0
 Wind/Dir: 19.7 W % CC/Pcp: 5% / 0

Burrow Number	BW Presence	BW Sign Presence* (circle)	Observations (note Burrow Condition, or note BW-# activity)
AVSP1		W P T B S Other	not present
		W P T B S Other	
AVSP2		W P T B S Other	old deteriorating
		W P T B S Other	
AVSP3		W P T B S Other	old deteriorating
		W P T B S Other	
AVSP4		W P T B S Other	old deteriorating
		W P T B S Other	
AVSP5		W P T B S Other	old deteriorating
		W P T B S Other	
AVSP6		W P T B S Other	old deteriorating
		W P T B S Other	
AVSP7		W P T B S Other	recent very large splash
		W P T B S Other	
Shole 1		W P T B S Other	no new sign
		W P T B S Other	
Shole 2		W P T B S Other	no new sign
		W P T B S Other	
Shole 3		W P T B S Other	no new sign; 1 very deteriorated pellet 6' from hole;
		W P T B S Other	1 pellet deteriorating 2' from hole.
Shole 4		W P T B S Other	no new sign
		W P T B S Other	
Shole 5		W P T B S Other	no new sign
		W P T B S Other	
Pallet 1		W P T B S Other	no sign observed
		W P T B S Other	
Burrow 1		W P T B S Other	no sign observed - burrow too small - saved in 4"
		W P T B S Other	
Owl Pel 1		W P T B S Other	Owl pellet observed - old and deteriorating
		W P T B S Other	
Owl Pel 2		W P T B S Other	not present
		W P T B S Other	
Shole 6		W P T B S Other	no new white wash
		W P T B S Other	
Shole 7		W P T B S Other	no new white wash; pellet deteriorating due to earlier rain
		W P T B S Other	
Pipes 1		W P T B S Other	Pile of short segments of 4"+ PVC - NO SIGN
		W P T B S Other	
		W P T B S Other	
Comments			
CORA MERL SASP PRFA WCSP CAQU ROWR			

*BW Sign = W-Whitewash, P-Pellets, T- BW Tracks, B- Bones (from degraded pellets), S-Slicks

Burrowing Owl (BW) Survey

Recorder: Andrew Fisher
 Project: Beacons Solar
 GPS Unit:
 START Time: 1501
 END Time: 1801

Add'l Person: Mike Ireland Date: Jan 14, 2010
 Survey Sxn: Emergency Access Rd. Map #:
 Survey Type: PHASE II WINTER Survey 3 of 4
 Temp (F°): 67.8 Wind/Dir: 1.0W % CC/Pcp:
 Temp (F°): 49 Wind/Dir: 1.0W % CC/Pcp:

Burrow Number	BW Presence	BW Sign Presence* (circle)	Observations (note Burrow Condition, or note BW# activity)
Avian Splash 6		W P T B S Other	no new sign
		W P T B S Other	
Burrow 1		W P T B S Other	no new sign
		W P T B S Other	
Splash 1		W P T B S Other	no new sign
		W P T B S Other	
Polled 2		W P T B S Other	no new sign
		W P T B S Other	
Sinkhole 2		W P T B S Other	no new sign
		W P T B S Other	
Beacons Burrow 1		W P T B S Other	no new sign
		W P T B S Other	
Beacons Burrow 2		W P T B S Other	no new sign
		W P T B S Other	
Avian Sp 5		W P T B S Other	no new sign
		W P T B S Other	
Avian Sp 4		W P T B S Other	no new sign
		W P T B S Other	
Avian Sp 3		W P T B S Other	no new sign
		W P T B S Other	
Avian Sp. 2		W P T B S Other	no new sign
		W P T B S Other	
Avian Sp 7		W P T B S Other	no new sign
		W P T B S Other	
Sinkhole 1		W P T B S Other	no new sign
		W P T B S Other	
Sinkhole 3		W P T B S Other	no new sign
		W P T B S Other	
Owl Pellet 1		W P T B S Other	no new sign
		W P T B S Other	
Pellet 1		W P T B S Other	no new sign
		W P T B S Other	
Sinkhole 4		W P T B S Other	no new sign
		W P T B S Other	
Sinkhole 5		W P T B S Other	no new sign
		W P T B S Other	
Pipepile		W P T B S Other	no new sign
		W P T B S Other	
		W P T B S Other	

Comments
 Bird Sp: MERL, PRFA, WCSP, HOLR, SASP, HOFI
HOLA, CORIA
 Mammal: Jack rabbit, Coyote scat

Burrowing Owl (BW) Survey

Recorder: Mike Ireland
 Project: WSP
 GPS Unit: _____
 START Time: 6:00
 END Time: 9:00

Add'l Person: Andrew Fisher
 Survey Sxn: Area III Bico
 Survey Type: _____
 Temp (F°): 35.2
 Temp (F°): 50.5

Date: January 15, 2010
 Map #: _____
 Survey 4 of 4
 Wind/Dir: 00 % CC/Pcp: 50% / 0
 Wind/Dir: 000 % CC/Pcp: 90% / 0

Burrow Number	BW Presence	BW Sign Presence* (circle)	Observations (note Burrow Condition, or note BW-# activity)
AS 1		W P T B S Other	no new sign
		W P T B S Other	
AS 2		W P T B S Other	no new sign
		W P T B S Other	
AS 3		W P T B S Other	no new sign
		W P T B S Other	
AS 4		W P T B S Other	no new sign
		W P T B S Other	
AS 5		W P T B S Other	no new sign
		W P T B S Other	
AS 6		W P T B S Other	no new sign
		W P T B S Other	
AS 7		W P T B S Other	no new sign
		W P T B S Other	
SH 1		W P T B S Other	no new sign
		W P T B S Other	
SH 2		W P T B S Other	no new sign
		W P T B S Other	
SH 3		W P T B S Other	no new sign
		W P T B S Other	
SH 4		W P T B S Other	no new sign
		W P T B S Other	
SH 5		W P T B S Other	no new sign
		W P T B S Other	
SH 6		W P T B S Other	no new sign
		W P T B S Other	5" x 5" x 24" deep
SH 7		W P T B S Other	no new sign
		W P T B S Other	5" x 12" x 24" deep
Pellet 1		W P T B S Other	present; digested
		W P T B S Other	
Pellet 2		W P T B S Other	gone
		W P T B S Other	
Pallet 1		W P T B S Other	no new sign
		W P T B S Other	
Burrow 1		W P T B S Other	not suitable
		W P T B S Other	
Pipes 1		W P T B S Other	no sign
		W P T B S Other	
		W P T B S Other	
Comments			
SASP NOHA WOSP LO5H CORA			

APPENDIX B

WILDLIFE SPECIES DETECTED DURING WINTER SEASON BURROWING OWL SURVEYS

**Wildlife Species Detected during
Wither Season Burrowing Owl Surveys 2010**

Scientific Names	Common Names
Birds	
Order Galliformes	
Family Odontophoridae	
<i>Callipepla californica</i>	California quail
Order Falconiformes	
Family Falconidae	
<i>Falco mexicanus</i>	prairie falcon
<i>Falco columbarius</i>	merlin
Family Accipitridae	
<i>Circus cyaneus</i>	northern harrier
Order Passeriformes	
Family Laniidae	
<i>Lanius ludovicianus</i>	loggerhead shrike *
Family Corvidae	
<i>Corvus corax</i>	common raven
Family Alaudidae	
<i>Eremophila alpestris actia</i>	California horned lark
Family Emberizidae	
<i>Amphispiza belli</i>	sage sparrow
<i>Zonotrichia leucophrys</i>	white-crowned sparrow
<i>Passerculus sandwichensis</i>	savannah sparrow
Family Fringillidae	
<i>Carpodacus mexicanus</i>	house finch
Family Troglodytidae	
<i>Salpinctes obsoletus</i>	rock wren
Mammals	
Order Lagomorpha	
Family Leporidae	
<i>Lepus californicus</i>	black-tailed jackrabbit

* CDFG Species of Special Concern (CDFG 2009)

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

In the Matter of:

Beacon Solar, LLC's)	
Application for Certification of the)	Docket No. 08-AFC-2
Beacon Solar Energy Project)	
_____)	

**BEACON SOLAR, LLC'S BIOLOGICAL RESOURCES REBUTTAL TESTIMONY OF
ALICE KARL**

March 9, 2010

Jane E. Luckhardt
Sophia Rowlands
DOWNEY BRAND, LLP
621 Capitol Mall, 18th Floor
Sacramento, California 95814
Telephone: (916) 444-1000
FAX: (916) 444-2100

EXHIBIT 326

BEACON SOLAR ENERGY PROJECT

BIOLOGICAL RESOURCES REBUTTAL TESTIMONY OF ALICE KARL

BIOLOGICAL RESOURCES REBUTTAL TESTIMONY OF ALICE KARL ON BEHALF OF BEACON SOLAR, LLC IN RESPONSE TO TESTIMONY OF SCOTT CASHEN ON BEHALF OF CALIFORNIA UNIONS FOR RELIABLE ENERGY

Q1. Please state your name and title for the record.

A1. My name is Alice Karl and I am a desert tortoise (DT) expert based in Davis, California.

Q2. Is your resume attached to your declaration marked as Exhibit 235 in this proceeding?

A2. Yes it is.

Q3. Please provide a summary of your qualifications highlighting those areas that apply to the testimony you provide below.

A3. I am a recognized desert tortoise authority, with over 32 years experience studying desert tortoises in California, Nevada, Utah, western Arizona and Mexico. I hold two advanced degrees on desert tortoises, an MS on habitat associations and a Ph.D. on reproduction, growth and population viability. I hold my own handling and research permits from the U.S. Fish and Wildlife Service and the California Department of Fish and Game. I am an annual instructor for Desert Tortoise Council Techniques Workshop and have trained many biologists in tortoise survey and monitoring techniques. I am a major contributor to many of the methods currently being applied to desert tortoise surveys, handling, clearance and translocation. I developed the regional survey methods for the Fort Irwin Expansion Project, which are also currently being used for the Twentynine Palms Marine Corps Air Ground Combat Center expansion project. I have conducted two of the four controlled translocation studies to date and have written and contributed to many translocation plans and several studies. I designed and implemented one of the largest and longest desert tortoise research projects to date - approximately 130 tortoises were telemetered for 10 years to study reproduction, growth, home range, burrow use, temperature associations, and dispersal within the context of forage production, size and gender. I have conducted over 25 Bureau of Land Management (BLM)-type trend plots or other mark-recapture plots for population studies and >5000 transects to assess relative densities throughout California, Nevada and Utah.

Q4. Have you reviewed the Testimony of Scott Cashen on Behalf of the California Unions for Reliable Energy on Biological Resources of the Beacon Solar Energy Project, dated November 12, 2009?

A4. Yes. I have.

Q5. Mr. Cashen asserts that, according to a review of literature (Federal Recovery Plan, West Mojave Habitat Conservation Plan, natural history accounts, published scientific information),

BEACON SOLAR ENERGY PROJECT

BIOLOGICAL RESOURCES REBUTTAL TESTIMONY OF ALICE KARL

you did not apply factual information, and failed to follow established scientific method, in your field evaluation and survey findings for DT. Do you agree with these assertions?

A5. No. The Applicant conducted protocol surveys, approved by United States Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG), due to the possibility of DT presence. The results of these surveys strongly support absence of DT on the Beacon Solar Energy Project plant site ("Plant Site"). These surveys are the basis to conclude that DT do not occupy the Plant Site. My habitat assessment of the Plant Site provided further support that DT do not occupy the Plant Site, but do occupy some areas around the Plant Site. My assessment was based on over 30 years experience assessing and measuring DT habitat variables and DT populations throughout DT range, as well as reviewing relevant documents and reports throughout those decades. My assessment discussed the suite of variables that characterizes DT presence and population levels, including shrub density, species composition, and dispersion, soil consistence and texture, substrate quality, hydrology, historic land uses, and adjacent habitat quality. There is little scientific information statistically correlating habitat qualities to DT population densities and recovery potential. This may be due to the fact that the DT is a generalist, opportunistic species, although individuals and population segments exhibit more refined characteristics in habitat and microhabitat use. Published papers are almost non-existent and the handful of unpublished papers either provide detailed analyses correlating habitat variables in localized areas or fail to conduct in-depth analyses. Examples of the latter include the 1994 Desert Tortoise Recovery Plan (which has only four pages and three tables that include mostly general information on desert tortoise habitat), the 2008 Draft Revised Desert Tortoise Recovery Plan (one page), and the West Mojave Plan (two paragraphs). Each only identifies some factors identifying tortoise presence, but does not provide detailed analyses correlating tortoise densities or recovery to specific habitat variables.

Q6. Mr. Cashen asserts that CEC Staff's statement that the plant site provides little or no habitat to support resident DT because it is either barren or shrub cover is less than 2% is incorrect because the FSA fails to quantify cover requirements. Mr. Cashen further asserts that USFWS Desert Tortoise Recovery Plan states that desert tortoises rely on shrubs and burrows for cover, but prefer areas with sparse shrub cover because it promotes growth of herbaceous plants, their preferred food. Do you agree with these assertions?

A6. No. Shrub cover on the Plant Site where allscale has re-established is 22-25%, interspersed with broad, barren areas; most of the Plant Site is barren or has shrub cover <2% (AFC 5.3: Page14). Mere shrub cover is an inadequate variable to indicate the presence of DT. The 1994 Desert Tortoise Recovery Plan (Pages 15, 20-26) identifies several variables associated with DT, including topography, soils, suitable plants for forage and cover, specific plant communities, and cover site associations.

Q7. Mr. Cashen contends that during a conference call with Judy Hohman of USFWS, she stated that a member of her staff had seen a desert tortoise wandering across a barren spot either within or adjacent to the Project site, and that desert tortoises are known to cross barren areas. Do you agree with these assertions?

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A7. No. No DT have been observed on the Plant Site and the Plant Site is not marginal, much less good, DT habitat. Tortoises have been observed by many people to walk across non-habitat - freeways and heavily traveled roads are good examples. Just because a tortoise walks on a surface does not make that surface habitat or a necessary corridor between habitat. There is absolutely no evidence that tortoises either occupy or need barren areas. Nevertheless, the Applicant has offered to provide mitigation for the unlikely potential that up to two (2) transient DT may wander onto the edge zones of the Plant Site and be harmed in some way.

Q8. Mr. Cashen contends that you failed to provide scientific evidence to support your conclusions that the Plant site is not suitable for desert tortoise population maintenance or recovery based on several observations of environmental variables. He further contends that your conclusions were made without a single quantitative measurement and without a single reference to research supporting your observations. Do you agree with these assertions?

A8. No. My assessment certainly falls within acceptable, valid practices of expert opinion. My assessment was based on over 30 years experience assessing and measuring DT habitat variables and DT populations throughout DT range, as well as reviewing relevant documents and reports throughout those decades. I have conducted research on DT in California, Nevada, Utah, Arizona and Mexico, have personally conducted over 30 mark-recapture plots and site clearances, and have walked over 10,000 miles of transects throughout DT range. I hold two advanced degrees on DT, and my experience qualifies me to provide an expert opinion on the likelihood of DT occupying the Project Site and at what level.

As noted by USFWS' 1994 Desert Tortoise Recovery Plan, "there is significant geographic variation in the way desert tortoises use available resources." My assessment, based on my studies of this variation in resource use throughout DT range, discussed the Project site's suite of variables that characterizes DT presence and population levels, including shrub density, species composition, and dispersion, soil consistence and texture, substrate quality, hydrology, historic land uses, and adjacent habitat quality – all factors that influence tortoise population levels. There is little published scientific information statistically correlating habitat qualities to DT population densities and recovery potential. The very few published papers (e.g., Luckenbach 1982) and the handful of unpublished papers either provide little or no detailed analyses correlating habitat variables to tortoise density or highly localized. The habitat assessment, along with approved surveys that found no DT or recent sign on the Plant Site, were extensive, comprehensive, and followed standardized protocols. They provide strong scientific evidence that DT do not occupy the Plant Site.

Q9. Mr. Cashen asserts that the USFWS recommends intensive surveys be conducted following the 100 percent survey to determine accuracy of surveyor in locating desert tortoise sign, and that the accuracy of the 100 percent survey cannot be evaluated because an intensive survey was not conducted for the Project. Do you agree with these assertions?

A9. No. A 5% Quality Control survey was not conducted because no DT sign was observed on the Plant site. Surveys are only required on DT habitat (see USFWS 1992 protocols). Even though barren lands are not DT habitat, the Applicant conducted surveys, beyond what is

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required of the protocols. The USFWS and CDFG, the resource agencies that evaluate the surveys, determined that the surveys were adequate.

Q10. Mr. Cashen asserts that the FSA conclusion that the Project site provides little or no habitat to support resident desert tortoises is not supported by the USFWS because a juvenile carcass, an adult desert tortoise burrow, and bone fragments were detected within the Project site. Mr. Cashen contends that according to USFWS survey guidelines, "tortoise sign in the action area indicates desert tortoise presence and requires formal consultation with the USFWS." Do you agree with these assertions?

A10. Not entirely. No recent sign or active sign was found on the Plant site. The single, degraded burrow and complete lack of more burrows and scat thoroughly support the conclusion that DT do not occupy the Plant site. In fact, the location of nearly all sign, and all recent sign, only around the edges of the Plant Site strongly supports the hypothesis that DT do not occupy the Plant Site.

Juvenile DT have been well-documented as prey of ravens and other predators. Dead juvenile DT have frequently been observed below roosts and raven nests, carried there by ravens. Ravens carry food and resources long distances. It is not unlikely that a raven would have carried food 2,300 feet. (Boarman, William I. 2003. Managing a Subsidized Predator Population: Reducing Common Raven Predation on Desert Tortoises. Environmental Management. V32:2 p205-217; Kristan, W.B., III, and W.I. Boarman. 2003. Spatial pattern of risk of common raven predation on desert tortoises. Ecology 84(9):2432-2443.). The juvenile carcass found in the Plant Site center had a hole in the carapace consistent with raven depredation.

The presence of some sign does not automatically result in a determination that a specific location is occupied (see Answer to Question 11 below), although sign does indicate that the species is in the action area. The results of the Beacon surveys identified that DT are not on the Plant site, but are in the area around the Plant site. The part of the Project that lies on the west side of SR14 is habitat and occupied by tortoises. The Applicant has informally consulted the USFWS and has submitted a 2081 application to the CDFG.

Q11. Mr. Cashen contends that California Energy Commission (CEC) Staff has not provided scientific evidence to support the conclusion that any tortoises occurring on the Plant site would be transients, and that there is no scientific evidence to support the conclusion that transient individuals can occur in an area that does not provide habitat. Mr. Cashen asserts that regarding transients, Dr. Morrison was unfamiliar with the term 'transient' being applied to a terrestrial organism and states that if an organism occurs in an area, that area provides habitat. Mr. Cashen further asserts that Dr. Berry indicates that desert researchers do not use the term transient to describe desert tortoise. Do you agree with these assertions?

A11. No. The survey data to date have indicated that the Plant site is not occupied or suitable habitat for the species. The documents prepared to date provide evidence as to why. No individuals have been observed on the Plant site and suitable habitat is not present. However, the Applicant has taken a conservative approach in considering that there is a low potential for a

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transient individual from surrounding areas to cross onto the Plant site near the periphery and has therefore proposed to mitigate for the potential take of those transient individuals.

That Dr. Morrison and Dr. Berry do not use the term "transient" for terrestrial animals is irrelevant. It is an appropriate biological term. It is generally true that if an animal is in a particular habitat type, then that habitat is probably that animal's habitat as well. But, if there is a highly disturbed habitat that has no resemblance to the original habitat occupied by that species in that area (as at Beacon), and an animal traverses it, that action does not mean that the highly disturbed habitat becomes the species' habitat. Would Mr. Cashen think that SR 14 is DT habitat, since it intersects known DT habitat? Mr. Cashen is correct that habitat is defined by the behaviors of the species. If an animal spends no time or very little time in a habitat, then this habitat does not represent the species' habitat. No DT were found or have been found on the Plant site. By Mr. Cashen's own definition, the Plant Site is not habitat.

It is highly certain that Dr. Morrison was not presented with the entire situation. Further, Dr. Morrison is correct that if habitat exists in an area, then it follows that that area encompasses some habitat. It does not follow, however, that the entire square footage within that area is habitat.

Q12. Mr. Cashen contends that CEC Staff's mitigation for impacts to desert tortoises and their habitat is based not on loss of habitat, but on compensation for potential construction and operation-related impacts to two "transient" desert tortoises and this technique is flawed. Do you agree with these assertions?

A12. No. Project mitigation is based on both habitat for impacts west of SR 14 and transients for impacts east of SR 14 (in the Plant Site). The number of individuals potentially impacted at the Plant site is the appropriate metric for mitigation in this situation. As explained, there is no suitable habitat on the Plant site for DT, so there will be no impact to habitat on the Plant Site.

Q13. Mr. Cashen contends that DT home range needs to be defined, and that if a tortoise is at the edge of its home range and is moved, it may not be maintained in its home range. He asserts that tortoises moved outside of their home range are likely to suffer higher mortality, and CEC Staff's assessment needs to consider these issues by defining home range and incorporating additional mitigation to minimize take depending on Staff's definition. Do you agree with these assertions?

A13. No. The Desert Tortoise Translocation Plan states that any DT found on the site will likely be near the edges. Because the Plant site is not suitable habitat, any DT found necessarily would be on the edge of its home range or in transit. Moving the DT back into the nearest habitat would replace it back into its use area, within its home range. A strong monitoring component is associated with all relocations to ensure that all relocated DT are safe.

Q14. Mr. Cashen contends that the Designated Biologist is required to record the general condition and health of any tortoise that is handled, that moving tortoises may expose healthy tortoises to infected ones, and that the translocation plan needs to incorporate a detailed

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evaluation of the health of tortoises that are moved and that occupy the translocation site. Do you agree with these assertions?

A14. No. Since any relocated DT will be moved back into an area from which it came, disease spread is not possible – any diseased DT would already have been in that area. A distant translocation site - which would require an assessment of several factors - including, but not limited to, habitat quality, the existing DT populations, and the health of DT in the area -is not proposed for the Project because no tortoises will be moved to distance locations.

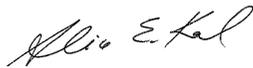
Q15. Is the testimony you have just provided your best professional judgment?

A15. Yes it is.

Q16. Is the testimony you have just provided true and correct to the best of your knowledge?

A16. Yes, it is.

Executed at Davis, California on March 8, 2010.



Alice E. Karl, Ph.D.

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

In the Matter of:

Beacon Solar, LLC's)	
Application for Certification of the)	Docket No. 08-AFC-2
Beacon Solar Energy Project)	
_____)	

**BEACON SOLAR, LLC'S BIOLOGICAL RESOURCES REBUTTAL TESTIMONY OF
PHILIP LEITNER**

March 9, 2010

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EXHIBIT 327

BEACON SOLAR ENERGY PROJECT

BIOLOGICAL RESOURCES REBUTTAL TESTIMONY OF DR. PHILIP LEITNER

Q1. Please state your name and title for the record.

A1. My name is Philip Leitner, and I am a wildlife biologist with expertise on the state-listed Mohave ground squirrel (MGS). I am based in Orinda, California.

Q2. Is your resume attached to your declaration marked as Exhibit 299 in this proceeding?

A2. Yes it is.

Q3. Please provide a summary of your qualifications highlighting those areas that apply to the testimony you provide below.

A3. I hold a Ph.D. in Zoology from UCLA and I am an Adjunct Professor at California State University, Stanislaus, where I am associated with the Endangered Species Recovery Program, a conservation biology research institute. I have been conducting research on the biology of the Mohave ground squirrel since 1979. I hold a Memorandum of Understanding from California Department of Fish & Game (CDFG) that permits me to carry out studies of this species and played a major role in the 2003 revision of the CDFG Survey Guidelines. My research has been funded by the CDFG, California Energy Commission, Bureau of Land Management, and all four branches of the US military that operate facilities in the western Mojave Desert. Since 1988, I have been the principal investigator on the only long-term study of demography, diet, reproduction, and seasonal activity for this species. I have co-authored three recent peer-reviewed papers on the Mohave ground squirrel, including a 2008 publication on the current status of the species. I have also produced 14 major reports on the distribution, ecology, and habitat requirements of the Mohave ground squirrel during the past 12 years. I have been the author or co-author of seven presentations on the species at scientific meetings.

Q4. Have you reviewed the Testimony of Scott Cashen on Behalf of the California Unions for Reliable Energy on Biological Resources of the Beacon Solar Energy Project, dated November 12, 2009?

A4. Yes. I have.

Q5. Mr. Cashen asserts that there is no evidence to support CEC Staff's conclusion that the Project site is not likely to be inhabited by the Mohave ground squirrel (MGS). Do you agree with Mr. Cashen's assertion?

A5. No. Three independent lines of evidence lead to the conclusion that the Plant Site is incapable of supporting a MGS population. First, the only comprehensive dietary studies of the species indicate that the site does not provide an adequate variety of native shrubs and forbs. Second, a long-term study in the Coso region on a site with a natural, undisturbed saltbush community did not support a resident MGS population. Third, MGS have never been detected during protocol trapping surveys in similar re-growth vegetation on abandoned agricultural sites in Kern, Los Angeles, and San Bernardino counties.

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Q6. Mr. Cashen asserts that there have been no survey attempts to document the presence of the squirrel on the Project site, that the CDFG requires surveys to be conducted on project sites that support desert scrub vegetation and are within or adjacent to Mohave ground squirrel geographic range, and that the Project site satisfies these criteria. Do you agree with these assertions?

A6. No. The CDFG Mohave Ground Squirrel Survey Guidelines (2003) do not apply to the Plant Site, as most of the site is barren, without desert scrub vegetation, and the existing Fallow Agricultural-Disturbed Atriplex Scrub and Mojave Desert Wash Scrub consist of re-growth after the native vegetation was removed and the land placed in agricultural production. The 429.5 acres of re-growth on the Plant Site do not constitute natural communities and the plant species composition on this acreage does not resemble the natural communities described in Holland (1986). Therefore there was no need to conduct MGS surveys or to assume presence of the species. The proposed transmission corridors to the west of SR-14 are located in Mojave Creosote Bush Scrub, a natural community as described in Holland (1986) and it is assumed that MGS are present in this portion of the project area.

Q7 Mr. Cashen asserts that the CEC Staff's conclusion that the Project site does not provide potential MGS habitat because the site is barren and lacks perennial and herbaceous vegetation that would provide forage and cover for the species is not supported by evidence. Do you agree with this assertion?

A7. No. Please see my responses to Questions 6 and 7 above. Most of the site is barren, without desert scrub vegetation, and the existing Fallow Agricultural-Disturbed Atriplex Scrub and Mojave Desert Wash Scrub consist of re-growth after the native vegetation was removed and the land placed in agricultural production. The 429.5 acres of re-growth on the Plant Site do not constitute natural communities and the species composition does not resemble the natural communities described in Holland (1986). MGS have never been detected during protocol trapping surveys in similar re-growth vegetation on abandoned agricultural sites in Kern, Los Angeles, and San Bernardino counties. In contrast, the proposed transmission corridors to the west of SR-14 are located in Mojave Creosote Bush Scrub, a natural community as described in Holland (1986) and it is assumed that MGS are present in this portion of the Project area.

Q8. Mr. Cashen asserts that there is a lack of scientific research on population, range, density, behavior, taxonomic relationships, and habitat preferences of Mohave ground squirrel. He further asserts that you have acknowledged the lack of information on MGS habitat requirements in (1) an article written by you in 1999 that states that "little is known of Mohave ground squirrel habitat needs or even where it still occurs," and (2) a 2008 status review in which you state "there is still little published information on its (Mohave ground squirrel) distribution, abundance, and population trends." Do you agree with these assertions?

A8. No. It is inappropriate to cite out-of-context statements from a 10-year-old popular article or to use a single statement from the 2008 report without context. While additional information about MGS ecology or habitat requirements would be desirable, I provided my analysis of the potential for MGS to be present on the Project site based upon existing literature and reports. My assessment of habitat quality and suitability for MGS is based upon the best

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available scientific data for the species. This led me to the conclusion that the Plant Site does not contain habitat elements needed to support an MGS population, while the species is very likely to be present within the proposed transmission corridors in Mojave Creosote Bush Scrub west of SR-14.

Q9. Mr. Cashen asserts that there is no published literature supporting CEC Staff's ability to determine the Project site does not contain the species or its habitat. Do you agree with this assertion?

A9. No. There are few publications in the peer-reviewed literature dealing with the ecology and habitat requirements of MGS, so it is necessary to rely to a large extent on unpublished reports and expert observations. A 1998 report by myself, P. Leitner, and B.M. Leitner summarized 9 years of data on 4 study sites, including one that supported a desert saltbush community. Although the saltbush site was natural, undisturbed, and occupied by a diverse complement of native shrubs and herbs, it did not support a resident MGS population (P. Leitner and B.M. Leitner, Coso Grazing Exclosure Monitoring Study Final Report, May 1998). Furthermore, as stated in the Answer to Question 8, MGS have never been detected during protocol trapping surveys in monotypic saltbush re-growth vegetation on abandoned agricultural sites in Kern, Los Angeles, and San Bernardino counties. All available evidence indicates the saltbush re-growth areas on the Plant Site are not suitable MGS habitat.

Q10. Mr. Cashen asserts that CEC Staff has failed to review scientific literature on MGS habitat use, and that the MGS has been found in all the broadly-defined plant communities of the western Mojave Desert and that it is CDFG's interpretation that the species continues to occur in those communities. He further asserts that this has been substantiated by trapping studies, and that you concluded, based on trapping studies in the Coso study area, that MGS occurred in almost all vegetation communities, including creosote bush scrub and saltbush scrub, both of which are present in the Project area. Do you agree with these assertions.

A10. No. Please see my response to Questions 8 and 9 above. As indicated in that response, Mojave Creosote Bush Scrub occurs along the proposed transmission corridors and MGS presence is assumed for this portion of the Project Area. Within the Plant Site, the shrub vegetation does not correspond to any recognized natural desert scrub communities, but is simply scattered re-growth of one species of saltbush in areas previously cleared for agriculture. There is no evidence, published or unpublished, that indicates the presence of MGS populations in vegetation of this type.

Q11. Mr. Cashen asserts that there is no scientific evidence to support CEC Staff's conclusion that the conditions on the Plant Site are unsuitable for Mohave ground squirrels. He contends that Aardahl and Roush (1985) concluded MGS reproduction and survival rates are likely dependent on availability of annual grasses and forbs, and that plant surveys conducted on the Project site reported 56 native, annual plant species growing in the Project survey area. Do you agree with these assertions?

A11. No. As stated in my answer to Question 6, all available scientific evidence clearly supports the conclusion that Plant Site is unsuitable for a resident MGS population. The cited

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Aardahl and Roush (1985) study did not collect any data on MGS diet. Their conclusion regarding diet was completely speculative. The plant species surveys covered a number of areas in addition to the Plant Site, so it is not possible to state that any particular plant species was found on the Plant Site. My assessment of habitat quality on the Plant Site indicated that the area does not have the appropriate variety of native shrubs and forbs needed to support a MGS population.

Q12. Mr. Cashen asserts that Zembal et al. (1979) reports that perennial plant cover in habitats occupied by MGS varied from 10% to 19%, and that you determined that suitable habitat for MGS occurred in scrub habitat outside the Project site that had cover of approximately 18%. He further asserts that the FSA states that the saltbush scrub community on the Project site is characterized by 22% to 25% cover and the Mojave Desert Wash Scrub community is characterized by 15% cover. He also asserts that most desert plant communities are characterized by lack of cover, and a report by Holland (1986) describes the Desert Saltbush Scrub community as having a low total ground cover with much bare ground. Do you agree with these assertions?

A12. No. There is no documented relationship between percent shrub cover and the presence or absence of MGS. At a total of 68 study sites that I surveyed between 2002 and 2009 throughout the species range, MGS were detected at sites where total shrub cover ranged from 6-50%, while they were not detected at sites with total shrub cover from 10-51%. The relevant habitat variable is evidently not shrub cover, but the right combination of suitable native plant species. This combination is not present at the Plant Site.

Q13. Mr. Cashen asserts that a study conducted by Leitner and Leitner (1989), plant species that were common in squirrels' diets during their study were detected during the Project's plant surveys (allscale, shadscale, desert calico, Gilia foliage, boxthorn seed, and saltbush leaves). Mr. Cashen further asserts that a study by Recht (1977) concluded that four plants comprised the major food resources for Mohave ground squirrels and that all four plant species reported by Recht were detected by plant surveys on the Project site. Do you agree with these assertions?

A13. No. The most comprehensive report on the MGS diet is found in Leitner & Leitner (1998) and is based on nine (9) years of data from fecal analysis. It found that a diverse array of native shrubs and forbs were consumed by MGS. The only site that did not support a resident MGS population was characterized by a natural, undisturbed saltbush community that included a diversity of native forbs. The habitat quality of the re-growth shrub vegetation at the Plant Site is far less favorable. There is no evidence that such vegetation could support a MGS population. The conclusions of Recht (1977) were based on visual observations of feeding behavior and not on actual quantitative analysis of the complete diet. In any event, the presence of certain plant species within the Project survey area is irrelevant to any evaluation of habitat suitability on the Plant Site itself, which is the real issue here.

Q14. Mr. Cashen asserts that the FSA estimate of MGS take of two (2) transient individuals are speculative and unsupported given that a more reliable estimate could have been obtained through visual and small mammal trappings and surveys. Do you agree with these assertions?

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A14. No. Please see my response to Question 16 below.

Q15. Mr. Cashen challenges the methods used to estimate take and determine compensation because they relied on calculations that incorporated animal density and habitat quality. He contends that your technique of estimating take is refuted by other scientists and that CDFG states “it is not practical to calculate the density or estimate the population of Mohave ground squirrel throughout its range at any point in time. A calculation or estimate would be based on a density or population derived from trapping results in one or more local areas and then extrapolated to the entire geographic range. Because the squirrel is patchily distributed and is affected at least locally by rainfall patterns, accurate extrapolation of local density and population figures to the entire range is not feasible. Even if it were practical to estimate range-wide density of the squirrel, the resulting figure would not be meaningful in influencing conservation decisions for the species.” (Gustafson, 1993). Mr. Cashen further asserts that Endangered Species Biologist, Curt Uptain, states “the results of other studies cannot be broadened to represent the entire range of the species.” Do you agree with these assertions?

A15. No. There is ample evidence that those portions of the Plant Site with re-growth shrub vegetation do not have the resources to support a resident MGS population. Therefore, an estimate of potential take must consider only the possibility of transient individuals being affected. It is very unlikely that take will occur, since there is nothing to attract MGS to the Plant Site. Furthermore, all potential burrows will be excavated by hand and collapsed prior to ground-disturbing activities. The Applicant has taken a conservative approach in considering that there is a low potential for one or two transient individuals from adjoining areas to cross onto the Plant Site near the periphery. Therefore, there is a proposal to mitigate for the potential take of up to two (2) transient animals. The quote from Gustafson (1993) has no bearing on the question of a reasonable estimate of future carrying capacity of good quality protected habitat purchased as compensation land. The quoted statement refers to the impracticality of trying to estimate the density or abundance of the species throughout its entire range based upon data from one or a few local areas. The statement by Uptain refers to the same question and has nothing to do with the issue at hand. I have taken the best available data regarding population density and used it to estimate the carrying capacity of similar good quality compensation land.

Q16. Mr. Cashen asserts that the 2,012-acre Project site and 5-acre transmission line corridor have habitat that could be occupied by MGS, but the FSA requires only 115 acres of compensation, resulting in a compensation ratio below what is currently recommended by CDFG and for other projects permitted by the CEC. Do you agree with these assertions?

A16. No. There is no evidence that there is any potential or occupied MGS habitat on the Plant Site. Therefore, it is not appropriate to apply a compensation ratio based upon habitat loss to the Plant Site. BIO-11 refers to habitat acreage because the transmission line impacts are based on actual loss of assumed MGS habitat. This information is therefore still applicable to the Project as it relates to the transmission line impacts.

BEACON SOLAR ENERGY PROJECT

BIOLOGICAL RESOURCES REBUTTAL TESTIMONY OF DR. PHILIP LEITNER

Q17. Mr. Cashen asserts that the FSA must require the Applicant to follow CDFG survey guidelines to provide equitable compensation. Do you agree with these assertion?

A17. No. The 2003 CDFG Mohave Ground Squirrel Survey Guidelines simply explain how to conduct presence/absence surveys. They have no direct relationship to compensation requirements. As explained in my Answer to Question 7, the CDFG Mohave Ground Squirrel Survey Guidelines do not apply to the Plant Site in any case.

Q18. Is the testimony you have just provided your best profession judgment?

A18. Yes it is.

Q19. Is the testimony you have just provided true and correct to the best of your knowledge?

A19. Yes, it is.

Executed at Orinda, CA, this 8th day of March, 2010.



Philip Leitner, Ph.D.

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

In the Matter of:

Beacon Solar, LLC's)
Application for Certification of the)
Beacon Solar Energy Project)
_____)

Docket No. 08-AFC-2

**BEACON SOLAR, LLC'S BIOLOGICAL RESOURCES REBUTTAL TESTIMONY OF
KENNETH STEIN**

March 9, 2010

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EXHIBIT 328

BEACON SOLAR ENERGY PROJECT

BIOLOGICAL RESOURCES REBUTTAL TESTIMONY

BIOLOGICAL RECOURSES REBUTTAL TESTIMONY OF KENNETH STEIN ON BEHALF OF BEACON SOLAR, LLC IN RESPONSE TO FINAL STAFF ASSESSMENT BIOLOGICAL RESOURCES CONDITIONS OF CERTIFICATION

Q1. Please state your name and title for the record.

A1. My name is Kenny Stein and I am an Environmental/Permitting Manager for NextEra Energy Resources, LLC.

Q2. Is your resume attached to your declaration marked as Exhibit 279 your declaration in the area of executive summary in this proceeding?

A2. Yes it is.

Q3. Please provide a summary of your qualifications highlighting those areas that apply to the testimony you provide below.

A3. In my position I am responsible for all environmental aspects of siting, permitting and construction compliance for several solar energy generating facilities. These facilities are located in California, Arizona and Spain. I have also held the same position for wind and gas generation facilities. I have been working in the energy field in this capacity since 1999. Both my undergraduate and graduate degrees are in environmental fields of study.

Q4. Have you reviewed the biological resources section of the Final Staff Assessment including California Energy Commission Staff's ("Staff") proposed Conditions of Certification?

A4. Yes. I have.

Q5. Have you reviewed the rebuttal testimony of Jennifer Guigliano regarding biological resources?

A5. Yes. I have.

Q6. Do you agree with and support the proposed changes to the Biological Resources Conditions of Certification attached to Ms. Guigliano's testimony?

A6. Yes, I do.

Q7. Have you had experience with compliance requirements for wind energy facilities that require identification of dead birds?

A7. Yes. NextEra Energy has wind energy facilities in California and in many other states. Compliance requirements for those facilities require that any dead birds be identified.

BEACON SOLAR ENERGY PROJECT**BIOLOGICAL RESOURCES REBUTTAL TESTIMONY**

Q8. Can you explain your procedure for identifying dead birds?

A8. Sure. Our employees take a picture of the dead bird and send the picture to a biologist who identifies the bird. We have not had a problem with correctly identifying dead birds.

Q9. Do you think a similar approach could be used to correctly identify any dead birds without the need for a biologist to visit the site as is currently required by BIO-14?

A9. Yes. I do. The procedure we have used at our wind plants would work well at Beacon. Because employees may not have sufficient training to properly identify all birds, we have our employees take a picture of the dead bird. If the bird is entangled in the pond netting the employee can take a picture of it in the netting and also a better picture if needed after the bird is retrieved from the netting. The picture file can be sent to a biologist shortly after the picture is taken for identification. We have not had any concerns expressed by the biologists about being able to identify the bird. And, we are not unnecessarily having biologists come out to our facility to correctly identify dead birds. We have found this arrangement to make sense from both an operational and species protection perspective.

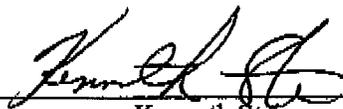
Q10. Does your testimony represent your best professional judgment?

A10. Yes it does.

Q11. Is your testimony true and correct to the best of your knowledge?

A11. Yes it is.

Executed at Ft. Lauderdale, Florida on March 9, 2010.



Kenneth Stein

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

In the Matter of:

Beacon Solar, LLC's)
Application for Certification of the)
Beacon Solar Energy Project)
_____)

Docket No. 08-AFC-2

**BEACON SOLAR, LLC'S CULTURAL RESOURCES REBUTTAL TESTIMONY OF
REBECCA APPLE**

March 9, 2010

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BEACON SOLAR ENERGY PROJECT

CULTURAL RESOURCES REBUTTAL TESTIMONY

CULTURAL RESOURCES REBUTTAL TESTIMONY OF REBECCA APPLE ON BEHALF OF BEACON SOLAR, LLC IN RESPONSE TO FINAL STAFF ASSESSMENT CULTURAL RESOURCES CONDITIONS OF CERTIFICATION

Q1. Please state your name and title for the record.

A1. My name is Rebecca Apple and I am a Principal/Senior Archaeologist based out of the AECOM Office in San Diego, California.

Q2. Is your resume attached to your declaration marked as Exhibit 300 your declaration in the area of cultural resources in this proceeding?

A2. Yes, it is.

Q3. Please provide a summary of your qualifications highlighting those areas that apply to the testimony you provide below.

A3. I have a Masters degree in Anthropology with an emphasis in archaeology. I am on the Register of Professional Archaeologists and meet the Secretary of Interior's Professional Standards for Archaeology. I am the lead cultural resources expert for the development of the Beacon Solar Energy Project ("Beacon"). In that role I am responsible investigations related to cultural resources that could be affected by Beacon.

I have over 20 years of cultural resources experience with a focus on California. My experience includes cultural resource investigations for solar, geothermal, wind, and fossil-fueled energy facilities.

Q4. Have you reviewed the cultural resources section of the Final Staff Assessment including California Energy Commission Staff's ("Staff") proposed Conditions of Certification?

A4. Yes. I have.

Q5. Are you presenting an alternative version of Staff's proposed Conditions of Certifications?

A5. Yes. I am

Q6. Before you describe your proposed changes please describe for the Committee what types of resources have been identified in your investigations to date.

A6. Our initial evaluation identified buildings, historic and prehistoric archaeological sites. We assessed the resources under the California Environmental Quality Act (CEQA) requirements and evaluated them for eligibility for the California Register of Historical Resources. We found several of the prehistoric sites were significant and would be affected by

BEACON SOLAR ENERGY PROJECT

CULTURAL RESOURCES REBUTTAL TESTIMONY

development of Beacon. Most of these resources are small hearths. In addition, after reviewing the results of the geoarchaeological investigations and the archeological investigation of specific sites, Staff identified Archaeological Zone 1 based on its potential to contain buried archaeological resources.

Q7. Please describe the investigations you have already conducted on the Beacon site.

A7. We initially conducted a records search, contact program, archaeological survey, and architectural survey. We performed a records search for the Beacon site as well as the proposed linear facilities. We also conducted a pedestrian survey of the Beacon site. In addition, we had an architectural historian conduct a reconnaissance survey.

Based on the results of the archaeological survey, we developed a testing program that included hand excavations and mechanical trenching to aid in the evaluation of some of the archaeological resources. We also coordinated a geoarchaeological trenching program to aid in identification of sediments that were of sufficient age and stability to potentially contain buried archaeological resources. This effort resulted in the delineation of Archaeological Zone 1, the landform most likely to contain prehistoric resources.

Q8. Do you know everything you could possibly know about the cultural resources at the site?

A8. No. Archaeological analysis does not require recovery of all available data. Nonetheless, we do know quite a bit about the resources. Based on the information we have we know that Native Americans were present at Beacon as indicated by the archaeological materials they left.

Q9. Do you feel like you have enough information about the potential cultural resources at the site to design a set of conditions of certification that will ensure the impacts to the resource are not significant?

A9. I do.

Q10. Do both your proposed conditions of certification and those proposed by Staff contain provisions to protect cultural resources if an unexpected resource is encountered?

A10. Yes, both sets of conditions require worker education, construction monitoring outside Archaeological Zone 1 and a Monitoring and Discovery Plan to guide monitoring efforts and identify measures to be taken if new archaeological materials are encountered during construction.

Q11. Turning now to your proposed changes to Staff's conditions of certification. Please explain how your proposed changes alter Staff's Conditions of Certification.

BEACON SOLAR ENERGY PROJECT

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A11. There are essentially two differences between Staff's proposed Conditions of Certification and the changes I am supporting. I understand from the testimony sponsored by Duane McCloud in cultural resources that it would be very difficult to grade the site and avoid Archeological Zone 1. Therefore, I have adjusted the conditions of certification to apply to the entire site as opposed to two different zones. Also, I have revised the schedule and level of effort to allow the cultural resources evaluation and recovery in Archeological Zone 1 to be completed within six months. I believe both Staff's version as well as the version I propose will provide valuable information about the cultural resources on the site and provide adequate protection for those resources to avoid a significant adverse environmental impact to cultural resources.

Q12. Have you prepared a timeline to help describe the differences?

A12. I have. Attached to and incorporated into my testimony is a graphic showing both my and Staff's timeline. (See Attachment 1.)

Q13. Can you go through your timeline?

A13. Beacon's proposed sequence of events is presented on the top half of the page with Staff's proposed sequence on the bottom. Both sequences include in a summary fashion the Conditions of Certification (COC) and lists the COC number. Both sequences are organized with the COCs requiring the longest lead time (i.e., number of days prior to construction) on the left, with length of required time decreasing as one moves to the right. Most of the changes I am proposing are based on treating the site as a whole, instead of separating Archeological Zone 1 from the rest of the project. The overall length of the schedule is also reduced and simplified by submitting resumes and existing project data 180 days prior to the start of construction rather than Staff's proposed 367, 352, 112, and 97 days. The time for the Historical Resources Management Plan is reduced from 270 days prior to construction to 150. With a 30 day review period for Staff this allows 120 days to conduct the data recovery field investigations prior to the start of construction.

Q14. Have you removed any steps from Staff's proposed list of actions?

A14. No steps have been removed.

Q15. Can you please explain where you have adjusted the tasks?

A15. Sure. I have placed a cap of 27 acres on the magnetometer survey and a cap of 14 acres for the trenching efforts, should trenching be required. I have reduced the size of the 12 small exposure excavations from Staff's 1 to 3 meters to 1 to 2 meters. I have reduced the maximum number of block exposures from 8 to 4 and size of the block excavations from Staff's 5 meters square to 3 meters square, with a provision that if needed the blocks could be expanded to 5 meters square.

BEACON SOLAR ENERGY PROJECT

CULTURAL RESOURCES REBUTTAL TESTIMONY

Q16. Is your proposal protective of the cultural resource?

A16. Yes.

Q17. Why do you believe your proposal is protective of the cultural resources?

A17. My proposal does not alter the types of investigations to be conducted or the reporting measures except to combine submittal of documents where Staff has requested two submittals based on dividing the project into Archaeological Zone 1 and the rest of Beacon.

Q18. Do you believe that to avoid a significant adverse impact to cultural resources it is necessary to complete the more extensive analysis requested by Staff?

A18. No. Because the buried hearths encountered during the cultural resource investigations for Beacon were small and had few if any artifacts directly associated with them. No changes to Staff's archaeological methods are proposed, only changes to the level of effort based on the relatively limited data potential of the sites, particularly the hearths at Beacon.

Q19. Would it be more protective of the resource to complete the analysis requested by Staff?

A19. No, because my proposal includes the compliance measures recommended by Staff. These measures include a Monitoring and Discovery Plan that will provide for unforeseen or previously unidentified finds.

Q20. Do you reach a point where your ability to learn new information diminishes as the excavations and data recovery continues?

A20. Yes. Based on the investigations conducted to date, although the sites at Beacon contain information important to the prehistory of California, this information appears to be limited in its variety and time period. Once the range of site structure, time periods, and assemblages have been identified, the information becomes redundant. If new or different archaeological materials are encountered they would be addressed under the provisions of the Monitoring and Discovery Plan.

Q21. Does your testimony represent your best professional judgment?

A21. Yes it does.

BEACON SOLAR ENERGY PROJECT

CULTURAL RESOURCES REBUTTAL TESTIMONY

Q22. Is your testimony true and correct to the best of your knowledge?

A22. Yes it is.

Executed at San Diego, Ca on March 9, 2010.

Rebecca Apple
Rebecca Apple

ATTACHMENT 1

CULTURAL RESOURCES

The following provides modifications to the COCs for cultural resources to more effectively allow the compliance efforts to be completed within project constraints. With this approach some submittals have been combined to reduce the number of documents that require review and approval, time periods for some submittals have been compressed, and provisions of the monitoring efforts and site treatment have been rescaled. The rationales for the modifications are provided after each condition where a change is presented.

Requested Changes to the Conditions of Certification for Cultural Resources

Beacon's proposed changes to several Conditions are presented below.

CUL-1 *Cultural Resources Personnel.* Prior to the start of ground disturbance (includes "preconstruction site mobilization," "construction ground disturbance," and "construction grading, boring and trenching," as defined in the General Conditions for this project) the project owner shall obtain the services of a Cultural Resources Specialist (CRS) and one or more alternate CRSs, if alternates are needed. The CRS shall manage all monitoring, mitigation, curation, and reporting activities required in accordance with the Conditions of Certification (Conditions). The CRS may elect to obtain the services of Cultural Resources Monitors (CRMs) and other technical specialists, if needed, to assist in monitoring, mitigation, and curation activities. The project owner shall ensure that the CRS makes recommendations regarding the eligibility for listing in the California Register of Historical Resources (CRHR) of any cultural resources that are newly discovered or that may be affected in an unanticipated manner. No ground disturbance shall occur prior to Compliance Project Manager (CPM) approval of the CRS and alternates, unless such activities are specifically approved by the CPM. Approval of a CRS may be denied or revoked for non-compliance on this or other projects.

CULTURAL RESOURCES SPECIALIST

The resumes for the CRS and alternate(s) shall include information demonstrating to the satisfaction of the CPM that their training and backgrounds conform to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61 (36 CFR Part 61). In addition, the CRS shall have the following qualifications:

1. The CRS's qualifications shall be appropriate to the needs of the project and shall include a background in anthropology, archaeology, history, architectural history, or a related field;
2. At least three years of archaeological or historical, as appropriate (per nature of predominant cultural resources on the project site), resource mitigation and field experience in California; and
3. At least one year of experience in a decision-making capacity on cultural resources projects in California and the appropriate training and experience to knowledgeably make recommendations regarding the significance of cultural resources.

The resumes of the CRS and alternate CRS shall include the names and telephone numbers of contacts familiar with the work of the CRS/alternate CRS on referenced projects and demonstrate to the satisfaction of the CPM that the CRS/alternate CRS has the appropriate training and experience to implement effectively the Conditions.

CULTURAL RESOURCES MONITORS

CRMs shall have the following qualifications:

1. a B.S. or B.A. degree in anthropology, archaeology, historical archaeology or a related field and one year experience monitoring in California; or
2. an A.S. or A.A. degree in anthropology, archaeology, historical archaeology or a related field, and four years experience monitoring in California; or
3. enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology or a related field, and two years of monitoring experience in California.

CULTURAL RESOURCES TECHNICAL SPECIALISTS

The resume(s) of any additional technical specialist(s), e.g., historical archaeologist, historian, architectural historian, and/or physical anthropologist, shall be submitted to the CPM for approval.

Verification

1. At least ~~412-180~~ days prior to the start of ground disturbance anywhere on the project site ~~30 meters or greater to the southwest of the provisional boundary of Archaeological Zone 1 or on the portions of the project area beyond the project site, or at least 352 days prior to the start of ground disturbance anywhere in Archaeological Zone 1 or 30 meters or less to the southwest of the provisional boundary for the Zone, whichever portion of the project area is subject to construction related ground disturbance first~~, the project owner shall submit the resume for the CRS, and alternate(s) if desired, to the CPM for review and approval.
2. At least 10 days prior to a termination or release of the CRS, or within 10 days after the resignation of a CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval. At the same time, the project owner shall also provide to the proposed new CRS the AFC and all cultural resources documents, field notes, photographs, and other cultural resources materials generated by the project. If there is no alternate CRS in place to conduct the duties of the CRS, a previously approved monitor may serve in place of a CRS so that construction-related ground disturbance may continue up to a maximum of 3 days without a CRS. If cultural resources are discovered then ground disturbance will remain halted until there is a CRS or alternate CRS to make a recommendation regarding significance.
3. At least 20 days prior to any construction-related ground disturbance, the CRS shall provide a letter naming anticipated CRMs for the project and stating that the identified CRMs meet the minimum qualifications for cultural resources monitoring required by this Condition.
4. At least 5 days prior to additional CRMs beginning on-site duties during the project, the CRS shall provide additional letters to the CPM identifying the CRMs and attesting to their qualifications. If additional CRMs are obtained during the project, the CRS shall provide additional letters to the CPM identifying the CRMs and attesting to the qualifications of the CRMs, at least 5 days prior to

the CRMs beginning on-site duties.

5. At least 10 days prior to any technical specialists beginning tasks, the resume(s) of the specialists shall be provided to the CPM for review and approval.
6. At least 7 days prior to the start of the preparation of the Historical Resources Management Plan (HRMP) (**CUL-4**), the project owner shall confirm in writing to the CPM that the approved CRS will be available for and is prepared to implement the cultural resources conditions.

RATIONALE

General - Consistency with General Conditions Definitions, page 7-1.

The requirement for submittal of the resume for the CRS prior to the start of ground disturbance is linked to preparation and implementation of a Historical Resources Management Plan (HRMP). The same cultural resources personnel will be conducting work on the two areas within the plant site identified by CEC staff (i.e., Archaeological Zone 1 and the area outside Archaeological Zone 1). To reduce the number of submittals only one resume submittal will be made for the CRS and alternate(s) to the CPM for review and approval. Assuming 60 days for preparation and approval of the HRMP and another 120 days to implement the field portion of data recovery, a reasonable preconstruction time period for identification of the CRS is 180 days. This schedule is dependent on project approval by the end of April 2010.

CUL-2 *Project Documentation for Cultural Resources Personnel.* Prior to the start of ground disturbance anywhere on the project site 30 meters or greater to the southwest of the provisional boundary of Archaeological Zone 1 or on the portions of the project area beyond the project site, if the CRS has not previously worked on the project, the project owner shall provide the CRS with copies of the AFC, data responses, confidential cultural resources reports, all supplements, and the Energy Commission's Final Staff Assessment (FSA) for the project. The project owner shall also provide the CRS and the CPM with maps and drawings showing the footprints of the power plant, all linear facility routes, all access roads, and all laydown areas. Maps shall include the appropriate USGS quadrangles and a map at an appropriate scale (e.g., 1:2000 or 1" = 200') for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. The CPM shall review map submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance anywhere on the project site 30 meters or greater to the southwest of the provisional boundary of Archaeological Zone 1 or on the portions of the project area beyond the project site shall occur prior to CPM approval of maps and drawings, unless such activities are specifically approved by the CPM. If construction of the project would proceed in phases, maps and drawings not previously provided shall be submitted prior to the start of each construction phase. Written notification identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

Weekly, until ground disturbance is completed, the project construction manager shall

provide to the CRS and CPM a schedule of project activities for the following week, including the identification of area(s) where ground disturbance will occur during that week.

The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.

Verification

1. At least ~~97-180~~ days prior to the start of ground disturbance anywhere on the project site ~~30 meters or greater to the southwest of the provisional boundary of Archaeological Zone 1 or on the portions of the project area beyond the project site, and at least 367 days prior to the start of ground disturbance anywhere in Archaeological Zone 1 or 30 meters or less to the southwest of the provisional boundary for the Zone, whichever portion of the project area is subject to construction related ground disturbance first~~, the project owner shall provide the AFC, data responses, confidential cultural resources documents, all supplements, and the Energy Commission's Final Staff Assessment (FSA) to the CRS, if needed, and the subject maps and drawings to the CRS and CPM. The CPM will review submittals in consultation with the CRS and approve maps and drawings suitable for cultural resources planning activities.
2. At least 15 days prior to the start of ground disturbance, if there are changes to any project-related footprint, the project owner shall provide revised maps and drawings for the changes to the CRS and CPM.
3. At least 15 days prior to the start of each phase of a phased project, the project owner shall submit the appropriate maps and drawings, if not previously provided, to the CRS and CPM.
4. Weekly, during ground disturbance, a current schedule of anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.
5. Within 5 days of changing the scheduling of phases of a phased project, the project owner shall provide written notice of the changes to the CRS and CPM.

RATIONALE

The provisional boundary of Archaeological Zone encompasses the northeastern corner of the project area as indicated on Figure 2. The requirement to provide the CRS with copies of the AFC, data responses, confidential cultural resources reports, all supplements, and the Energy Commission's Final Staff Assessment (FSA) for the project, along with maps and drawings showing the footprints of the power plant, all linear facility routes, all access roads, and all laydown areas is linked to preparation of a HRMP. The same cultural resources personnel will be conducting work on the two areas within the plant site identified by CEC staff (i.e., Archaeological Zone 1 and the area outside Archaeological Zone 1). To reduce the number of submittals one set of project data will be provided to the CRS. Assuming 60 days for preparation and approval of the HRMP and another 120 days to implement data recovery, a more reasonable preconstruction time period for the transfer of data is 180 days.

CUL-3 *Alteration of Project Area.* Changes to the proposed project or to the character of its construction, operation, and maintenance that may become necessary subsequent to the

approval of the project, were such approval to occur, may in turn require the re-consideration of the extent of the original project area. Where such changes indicate the need to alter the original project area to include additional lands that were not elements of analysis during the certification process, the effects of any proposed changes on historical resources that may be on such lands would need to be taken into account. Changes in the character of the construction, operation, and maintenance of the proposed project may include such actions as decisions to use non-commercial borrow sites or disposal sites. Upon the recognition that proposed changes to the project would require the use of lands that were not a part of the original project area, the project owner shall ensure that the CRS surveys any such lands for cultural resources and record each newly found resource on DPR 523 forms. Exceptions would be made to this protocol in cases where cultural resources surveys no greater than five years in age are documented for the entirety of the subject lands and approved by the CPM. Where new cultural resources surveys are warranted, the project owner shall convey the results of such surveys, along with the CRS's recommendations for further action, to the CPM, who will determine whether further action is necessary. If the CPM determines that historical resources may be present and that any such resource may be subject to a substantial adverse change in its significance, the project owner shall ensure that the CRS provides the CPM with substantiated recommendations on whether each such resource is eligible for listing in the CRHR and recommendations for the resolution of any such significant effects. The CRS, the project owner, and the CPM shall then confer on said recommendations, and, upon the concurrence of the CPM with those recommendations, the project owner shall ensure that the CRS proceeds to implement them, and reports on the methods and the results of any such work in the final Cultural Resources Report (CRR) (CUL-10).

Verification

1. Upon the recognition that proposed changes to the project or to the character of the construction, operation, and maintenance of the project would require the use of lands that were not a part of the original project area, the project owner shall notify the CRS and CPM. The project owner shall then provide, for CPM review and approval, documentation of any cultural resources surveys five years or less in age that exist for the additional lands.
2. At least ~~75~~ 60 days prior to the use of the new additional project area lands, in the absence of any such cultural resources surveys or when the extant cultural resources surveys do not cover the entirety of the lands to be added to the project area, the project owner shall ensure that the CRS surveys the additional lands for cultural resources, notifies the project owner and the CPM of the results of the new cultural resources survey, and recommends further action.
3. No more than 15 days subsequent to the receipt of the information in verification 2, CUL-3, above, the CPM shall determine whether historical resources may be present and whether any such resources may be subject to substantial adverse changes in significance.
4. At least ~~60~~ 30 days prior to the use of the new additional project area lands, if the CPM determines that historical resources may be subject to substantial adverse changes in significance, the project owner shall ensure that the CRS provides the CPM with substantiated evaluations, based on archival and field research, on whether each such resource is eligible for listing in the CRHR and

recommendations for the resolution of any potential significant effects.

5. For no longer than 15 days, the project owner, the CRS, and the CPM shall confer about the above evaluations and recommendations, and, upon the concurrence of the CPM with those evaluations and recommendations, the project owner shall ensure that the CRS proceeds to resolve any significant effects pursuant to the above recommendations prior to the use of the new additional project area lands.
6. The project owner shall ensure that the CRS reports on the methods and the results of all such work in the CRR (**CUL-10**).

RATIONALE

Additional project areas are anticipated to be small and avoidance of resources will be given a high priority. Based on this, the notification period can reasonably be moved closer to the start of ground disturbance.

CUL-4 *Historical Resources Management Plan.* The Historical Resources Management Plan (HRMP) shall govern the implementation of the overarching program to reduce the effects of the proposed project on historical resources to less than significant. The preparation and implementation of the different elements of the historical resources management program, by the project owner, shall be the result of a number of protocols and consultations set out in this condition of certification and others (**CUL-5** through **CUL-10**) below. Prior to the start of any construction-related ground disturbance (includes “preconstruction site mobilization,” “construction ground disturbance,” and “construction grading, boring and trenching,” as defined in the General Conditions for this project), the project owner shall submit the HRMP, as prepared by or under the direction of the CRS, to the CPM for review and approval. The HRMP shall follow the content and organization of a similar document, the Cultural Resources Monitoring and Mitigation Plan, a draft model version of which will be provided by the CPM, as general guidance. The authors’ name(s) shall appear on the title page of the HRMP. The HRMP shall also incorporate the final results of the January 2009 geoarchaeology study for the proposed project into the appropriate elements of the HRMP. Implementation of the HRMP shall be the responsibility of the CRS and the project owner. Copies of the HRMP shall reside with the CRS, alternate CRS, each CRM, and the project owner’s on-site construction manager. No ground disturbance shall occur prior to CPM approval of the HRMP, unless such activities are specifically approved by the CPM.

The HRMP shall include, but not be limited to, the following elements:

Primacy of the Conditions of Certification

1. The statement in the introduction to the HRMP that “any discussion, summary, or paraphrasing of the Conditions of Certification in this HRMP is intended as general guidance and as an aid to the user in understanding the conditions and their implementation. The conditions, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the conditions in the HRMP. The Cultural Resources Conditions of Certification from the Commission Decision are

contained in Appendix A.”

Implementation of the Historical Resources Management Program

2. Specification of the implementation sequence and the estimated time frames needed to accomplish all historical resources management program tasks prior to and during construction_-related ground disturbance, and during those analysis phases of the management program that may occur subsequent to construction_-related ground disturbance.
3. Identification of the person(s) expected to perform each of the historical resources management program tasks, their responsibilities, and the reporting relationships between project construction management and the treatment and monitoring teams.
4. A statement from the project owner that the CRS shall have, for the duration of construction_-related ground disturbance, access to equipment and supplies necessary for site mapping, photography, and recovery of any cultural resource materials that are found during such ground disturbance, where such materials cannot be treated prescriptively.

Historical Resources Management Program Research Design

5. A project area-specific research design that includes a discussion of archaeological research questions and testable hypotheses appropriate to the archaeological data sets known for the project area. The research design shall provide the broader context for and facilitate tiering down to the research design that the project owner shall prepare, pursuant to **CUL6**, for Archaeological Zone 1. The project area research design shall clearly articulate why it is in the public interest to address the research questions that it poses. That research design shall also develop a discussion of artifact and ecofact collection, retention, and disposal policies as related to the research questions in the research design.

Documentation and Curation Standards

6. A statement that all found cultural resources over 50 years old shall be recorded on Department of Parks and Recreation (DPR) 523 Series forms, and mapped and photographed. In addition, all artifacts and ecofacts retained as a result of the archaeological investigations (survey, testing, and data recovery) shall be curated in accordance with the California State Historical Resources Commission’s *Guidelines for the Curation of Archaeological Collections*, into a retrievable storage collection in a public repository or museum.
7. A statement that the project owner shall pay all curation fees for artifacts and ecofacts recovered and for related documentation produced during cultural resources investigations conducted for the project. The project owner shall identify three possible curation facilities that could accept cultural resources materials resulting from project activities.
8. A description of the contents, the format, and the review and approval process for the CRR (**CUL-10**), which shall be prepared according to ARMR guidelines (COHP 1990).

Native American Participation

9. A description of the roles which Native American observers or monitors shall play in the implementation of the HRMP, including the procedures that shall govern the selection of such observers and monitors, and the authority and responsibility of each role.

Treatment and Management of Historical Resources

10. A protocol that articulates, pursuant to **CUL-5**, the avoidance measures that the project owner shall implement to preserve archaeological site Site 17. **CUL-5** sets out the structure and the details of the avoidance measures. If the applicant determines that it is not feasible to avoid Site 17, the applicant shall notify the CPM of that determination and prepare a treatment plan for the site that will be subject to review and approval by the CPM. The purpose of the treatment plan will be to reduce the effects of the proposed project on the historical resource to less than significant through a program of data recovery, in addition to, as appropriate, resource registration or public outreach.
11. A treatment plan for Archaeological Zone 1, pursuant to **CUL-6**, the purpose of which is to reduce the effects of the proposed project on the historical resource to less than significant through a program of data recovery, resource registration, and public outreach. The structure and the details of the program are set out in **CUL-6**.

Construction Monitoring and Discovery

12. A Worker Environmental Awareness Program (WEAP) to guide the orientation of every new worker in the project area to cultural resources statutes and regulations, to the effects of the proposed project on cultural resources, to the management program that has been negotiated to address those effects, to the role of the workers in the management program, to the types of cultural resources in the project area and how to recognize them, and to the protocols that workers are to follow upon the discovery of different types of cultural resources. The structure and the details of the WEAP program are set out in **CUL-7**.
13. A description of the structure, and the review and approval process for the Monitoring and Discovery Plan (**CUL-8** and **CUL-9**).
14. Prescriptive treatment plans, where appropriate, for cultural resources that represent marginal data sets (**CUL-9**).

Verification

1. Prior to the preparation of the HRMP, the project owner shall submit the final technical report for the January 2009 geoarchaeology study for the proposed project to the CPM for review and approval.
2. Upon approval of the CRS proposed by the project owner, the CPM shall provide to the project owner, as general guidance, an electronic copy of the draft model Cultural Resources Monitoring and Mitigation Plan for the use of the CRS.
3. At least ~~30~~ **150** days prior to the start of ground disturbance anywhere on the project site ~~30 meters or greater to the southwest of the provisional boundary of Archaeological Zone 1 or on the portions~~

~~of the project area beyond the project site, and at least 270 days prior to the start of ground disturbance anywhere in Archaeological Zone 1 or 30 meters or less to the southwest of the provisional boundary for the Zone, whichever portion of the project area is subject to construction related ground disturbance first,~~ the project owner shall submit the HRMP to the CPM for review and approval.

4. At least 30 days prior to the start of ground disturbance anywhere on the project site ~~30 meters or greater to the southwest of the provisional boundary of Archaeological Zone 1 or on the portions of the project area beyond the project site, and at least 270 days prior to the start of ground disturbance anywhere in Archaeological Zone 1 or 30 meters or less to the southwest of the provisional boundary for the Zone, whichever portion of the project area is subject to construction related ground disturbance first,~~ a letter shall be provided to the CPM indicating that the project owner agrees to pay curation fees for any materials collected as a result of the archaeological investigations (survey, monitoring, testing, data recovery).

RATIONALE

General - Consistency with General Conditions Definitions, page 7-1.

To allow time for a review period and 120 days for implementation, the HRMP and Treatment Plan should be submitted well in advance of the fieldwork. A distinction between Archaeological Zone I and other portions of the project area is not needed for compliance documents. The need for a commitment to curate cultural materials collected during archaeological investigations is linked to implementation of the HRMP. Such a commitment could reasonably be provided 30 days prior to start of ground disturbance.

CUL-5 *Historical Resource Avoidance Measures, Site 17.* The project owner shall direct the CRS to actively implement a sequence of avoidance measures to ensure that there would be no physical damage to Site 17 as a result of the construction, operation, or maintenance of the project. Prior to the onset of any construction-related ground disturbance in the southwestern portion of the project site, the CRS shall re-establish the known boundary of Site 17, add a 10-meter wide buffer around the periphery of that boundary, and flag the boundary around the site and the buffer in a conspicuous manner. The CRS, alternate CRS, or a CRM would subsequently enforce the avoidance of the flagged area during project construction.

The CRS would, subsequent to the construction of the project, permanently mark the boundary around Site 17 and the above buffer, and then set the bounded area aside as an environmentally sensitive area that would not be subject to disturbance during the life of the project. The character of the permanent marking shall be decided on the basis of consultation and consensus among the property owner, the CRS, and the CPM. If avoidance of Site 17 is not feasible, a treatment plan for Site 17 will be prepared in accordance with Subpart 10 of CUL-4.

Verification

1. At least 30 days prior to the onset of construction-related ground disturbance in the SE 1/4 of

section 8, T. 31 S., R. 37 E., the CRS shall re-establish the known boundary of Site 17, add a 10-meter wide buffer around the periphery of that boundary, and flag the boundary around the site and the buffer in a conspicuous manner.

2. The CRS, alternate CRS, or a CRM shall enforce the avoidance of the above flagged area for the duration of construction-related ground disturbance.
3. No longer than 30 days subsequent to the conclusion of construction-related ground disturbance in the SE 1/4 of section 8, T. 31 S., R. 37 E., the CRS shall permanently mark the boundary around Site 17 and the above buffer. The area so marked shall then be an environmentally sensitive area that shall not be subject to any disturbance during the life of the project. The CRS shall continue to enforce the avoidance of the originally flagged area until the area has been permanently marked.
4. The CRS shall ensure that the measures and verifications of this condition of certification are, pursuant to subpart 10, **CUL-4**, completely incorporated as a protocol in the HRMP.

RATIONALE

General - Consistency with General Conditions Definitions, page 7-1.

To address other environmental issues the loop area for the rerouted wash has been reconfigured. The loops now are located very close to Site 17. If it is not feasible to avoid Site 17, treatment in the form of data recovery will be needed.

CUL-6 *Archaeological Zone 1 Historical Resource Treatment Plan.* The project owner shall prepare and implement a treatment plan the purpose of which is to reduce the effects of the proposed project on Archaeological Zone 1 to less than significant. The treatment plan shall accomplish the reduction of effects through a program of data recovery, resource registration, and public outreach. Prior to the onset of any construction-related ground disturbance within 30 meters of the provisional boundary for Archaeological Zone 1, the project owner shall prepare, secure the approval of the CPM for, and conclude the field investigation portions of the Archaeological Zone 1 Historical Resource Treatment Plan (HRTP). The HRTP shall, at a minimum, include and set out the details of each of the following elements:

1. *Research Design.* A research design specific to Archaeological Zone 1 that tiers off of the research design for the project area in the HRMP (Subpart 5, **CUL-4**) and that clearly articulates why it is in the public interest to address the research questions that it poses. The research design shall evidence consideration of archaeological themes that relate to the identity and the lifeways of Native American groups in the prehistoric and historic periods.
2. *Data Recovery Program.* Thorough descriptions of the overall goals of the data recovery program, how the data sets that are anticipated for Archaeological Zone 1 will contribute to our knowledge of the prehistoric and historic period Native American themes of the research design and answer particular research questions, of the purposes and the methods of the different field phases of the data recovery program, and of the purposes and methods of the material

analyses that will also occur. The descriptions of the field and laboratory efforts for the data recovery program shall include, at a minimum, and more thoroughly articulate the following phases:

- a. *Inventory, Phase 1 (Geophysical Test)*. The initial component of the data recovery program shall be a discontinuous 1-acre test of the efficacy of the use of magnetometry to derive a representative sample of the predominant type of archaeological deposits that are now thought to make up Archaeological Zone 1, fire features or hearths that occur both as feature clusters and as isolate features and that may or may not occur in association with fire-affected rock. The test shall include a small magnetometer survey through and in the near vicinity of (approximately 30 meters beyond) known archaeological sites in Archaeological Zone 1, and the subsequent ground truthing of a representative sample of the magnetic anomalies found in the survey areas for the test. The ground truthing sample shall, at a minimum, be the lesser of 25 percent of the anomalies or 12 individual anomalies. The excavation of the anomalies may, at the discretion of the CRS, be by hand or mechanical means. The CRS shall ensure that the field notes and the forms for the survey areas and for the ground truthing are sufficient to completely document the geophysical test.

- b. *Inventory, Phase 2a (Geophysical Survey)*. If the CRS and CPM agree, after consultation, that the geophysical test demonstrates that the use of magnetometry appears to be reasonably reliable, the project owner shall ensure that the CRS proceeds to a broader magnetometry sample survey of Archaeological Zone 1 and of the area 30 meters to the southwest of the provisional district boundary (Cultural Resources Figure 2). The CRS and CPM shall first derive and agree upon, in consultation with one another, the precise location of the provisional district boundary on the surface of the project site. The project owner shall then ensure that the CRS develops a single stratified random sample for Archaeological Zone 1 and the adjacent area 30 meters to the southwest of the provisional district boundary that would result in a magnetometry survey of ~~a minimum of 10~~ no more than 5 percent of that total area not to exceed 27 acres. The CRS and the CPM shall, in consultation, derive and agree upon criteria that shall form the basis for the stratification of the survey sample. The criteria shall reflect the spatial variability in the physical and material character and in the chronology of Archaeological Zone 1, as such variability is presently known from the field investigations in the project area. The results of the broader magnetometry survey would also be subject to the ground truthing of a representative sample of the magnetic anomalies found in the survey areas to more precisely establish the range of error of the survey results. The ground truthing sample shall, at a minimum, be the lesser of 10 percent of the anomalies or 48 individual anomalies. The excavation of the anomalies may, at the discretion of the CRS, be by hand or mechanical means. The project owner shall ensure that the CRS's field notes and the forms for the survey

areas and for the ground truthing are sufficient to completely document the geophysical survey to the satisfaction of the CPM.

- c. *Inventory, Phase 2b (Mechanical Subsurface Survey)*. Should the results of the initial geophysical test demonstrate that the use of magnetometry is not reasonably well able to locate the types of archaeological deposits that make up Archaeological Zone 1, the applicant would conduct a broader subsurface sample survey of the Zone using construction equipment such as a road grader or a backhoe rather than proceeding with the broader geophysical survey. This mechanical subsurface survey would employ transects, the proposed width and length of which the CPM would approve, and would involve the excavation of the transects in thin (no thicker than approximately 5 centimeters) layers to carefully expose and facilitate the accurate preliminary documentation of target archaeological deposits. The project owner shall ensure that the CRS, with CPM concurrence, derives criteria to form the basis for the stratification of the survey sample and develops a single stratified random sample for the Zone and the adjacent area to the southwest that would result in the mechanical subsurface survey of no more than 2.5 percent of that total area not to exceed 14 acres. The criteria shall reflect the spatial variability in the physical and material character and in the chronology of Archaeological Zone 1, as such variability is presently known from the field investigations in the project area. The project owner shall submit, for CPM review and approval, the CRS's methodology for the mechanical subsurface survey. The methodology would prescribe how archaeological deposits found during the survey would be preserved intact until the conclusion of the survey so that the CRS could structure a representative data recovery sample of the found deposits. The methodology would also take into account how the CRS would recover a sample of the buried land surfaces that may surround individual hearths or groups of hearths and document the material culture assemblages that may be found on such surfaces when the act of the mechanical exposure of the hearths may often truncate the surface from which they were constructed and used. The project owner shall ensure that the CRS's field notes and the forms for the survey areas are sufficient to completely document the mechanical subsurface survey to the satisfaction of the CPM.
- d. *Inventory, Phase 3 (Refinement of Provisional District Boundary)*. The project owner shall ensure that the CRS, on the basis of the results of either phase 2a or phase 2b of the data recovery program, drafts a refined provisional boundary for Archaeological Zone 1 that shall become an integral part of the implementation of, among other conditions of certification, **CUL-8** and subparts 2e and 2f of this condition, **CUL-6**.
- e. *Data Recovery, Phase 1 (Hearth Excavations)*. One component of the actual data recovery phase of the data recovery program would be to excavate small (approximately 1–~~3~~2 meters square) exposures to uncover

and document a sample of the individual hearths that are one constituent of the Zone. The purpose of this documentation would be to gather data to describe the physical variability of the features, to identify and inventory the artifacts and ecofacts that are found in them, and to interpret the methods of construction and the potential uses of the features. The excavation of the hearths shall proceed by hand to, where feasible, remove the archaeological deposits in anthropogenic layers. Where appropriate, the project owner shall ensure that the CRS retain samples of each layer sufficient to submit for radiocarbon assays, and macrobotanical, palynological, geochemical, or other analyses. The balance of each layer shall be screened through hardware cloth of no greater than 1/8-inch mesh. The project owner shall ensure that the CRS excavates a maximum of 12 such small exposures. In consultation, the CRS and the CPM shall develop and agree upon a sample of the hearths found as a result of the entire cumulative effort to inventory the archaeological deposits of Archaeological Zone 1 to subject to data recovery excavation. The sample shall reflect the apparent physical, material, and chronological variability of the found features. The project owner shall ensure that the CRS's field notes and the forms for the excavation of the hearths are sufficient to acquire the thorough complement of data necessary to the description of each feature, and the interpretation of the construction and use of each feature to the satisfaction of the CPM.

- f. *Data Recovery, Phase 2 (Excavation of Former Land Surfaces)*. The other component of the actual data recovery phase of the data recovery program would be to excavate larger (~~5-3~~ meters square) block exposures to attempt to uncover a sample of the buried land surfaces that may surround individual hearths or groups of them, and to document the material culture assemblages that may be found on such surfaces. If such surfaces are identified, the area of excavation can be expanded to a maximum of 5 meters square. The excavation of the surfaces shall proceed by hand to, where feasible, remove the archaeological deposits in anthropogenic layers. Where appropriate, the project owner shall ensure that the CRS retain samples of each layer sufficient to submit for radiocarbon assays, and macrobotanical, palynological, geochemical, or other analyses. The balance of each layer shall be screened through hardware cloth of no greater than 1/8-inch mesh. The CRS shall try to excavate each block exposure as a single excavation unit rather than as separate one meter square excavation units. The project owner shall ensure that the CRS excavate a maximum of 4 block exposures or excavation blocks, ~~where intact buried land surfaces are found in each excavation block. The CRS shall excavate a maximum of 8 block exposures, where intact buried land surfaces are not found in at least four of the blocks excavated.~~ In consultation, the CRS and the CPM shall develop and agree upon a sample of the buried surfaces that would be subject to excavation. The sample shall reflect the apparent physical, material, and chronological variability of the hearth features around which

the buried surfaces may be found. The project owner shall ensure that the CRS's field notes and the forms for the excavation of the surfaces are sufficient to acquire the thorough complement of data necessary to the description of the distributions of artifacts and ecofacts across each surface, and the interpretation of the use of each surface, to the satisfaction of the CPM.

g. *Material Analyses.* The project owner shall ensure that the H RTP articulates the anticipated scope of the analyses of the cumulative artifact and ecofact collections that have been and will be the result of the investigations of Archaeological Zone 1, articulates the analytic methods to be used, and articulates how the data sets that such analyses will produce are relevant to the themes and questions in the research design for the Zone.

h. *Report Preparation.* The project owner shall ensure that the H RTP states that a conclusory report is one of the requirements of the data recovery program, and also articulates the outline of, and the production schedule and approval process for the subject report.

3. *California Register of Historical Resources Registration.* The project owner shall prepare a California Register of Historical Resources nomination for Archaeological Zone 1 and submit the nomination to the State Historic Resources Commission for formal consideration. The project owner shall ensure that the CRS, as a part of the registration effort, derives a permanent district name for the Zone to replace the temporary designation of "Archaeological Zone 1." The CRS shall also ensure that the nomination reflects a final formal boundary for the district, a boundary that the CRS shall derive on the basis of the results of the data recovery program and present in the conclusory report for that program.

4. *Outreach Initiatives*

a. *Professional Outreach.* The project owner shall prepare a research paper and present it at a professional conference, or prepare and publish a peer-reviewed journal article to inform the professional archaeological community about Archaeological Zone 1 and to interpret its implications for our understanding of the prehistory and early history of Native American life in the region.

b. *Public Outreach.* The project owner shall prepare and present materials that interpret Archaeological Zone 1 for the public. Potential public interpretation efforts may include the preparation of an instructional module for use in local school districts, or the preparation of a display for existing public interpretation venues such as Red Rock Canyon State Park.

Verification

1. **At least 210 days p** Prior to the onset of construction-related ground disturbance anywhere in Archaeological Zone 1 or 30 meters or less to the southwest of the provisional boundary for the Zone, the project owner shall ensure that the CRS completes the geophysical test referred to in subpart 2a, **CUL-6**, above, and as set out in the H RTP component of the HRMP (**CUL-4**), and submit, for the review and approval of the CPM, a formal assessment of the reliability of the use of magnetometry to locate buried hearths in the Zone. If the geophysical test demonstrates that the

use of magnetometry appears to be reasonably reliable in this regard, then the project owner shall also submit, for the review and approval of the CPM, the precise geographic coordinates of the provisional boundary of Archaeological Zone 1 and a stratified random sample for a broader magnetometry survey of ~~40~~ 5 percent of Archaeological Zone 1 and of the area 30 meters to the southwest of the provisional district boundary. If the geophysical test demonstrates that the use of magnetometry does not appear to be reasonably reliable, then the project owner shall submit, for the review and approval of the CPM, a stratified random sample for a mechanical subsurface survey of 2.5 percent of Archaeological Zone 1 and of the area 30 meters to the southwest of the provisional district boundary.

2. ~~At least 105 days p~~ Prior to the onset of construction_-related ground disturbance anywhere in Archaeological Zone 1 or 30 meters or less to the southwest of the provisional boundary for the Zone, the project owner shall ensure that the CRS completes the formal inventory of that area under, as appropriate, subparts 2b or 2c, **CUL-6** and submits, for the review and approval of the CPM, a preliminary report, prepared by or under the direction of the CRS, of the results of the formal inventory, the precise geographic coordinates of the refined provisional district boundary (subpart 2d, **CUL6**), and separate samples for the data recovery excavation of a finite number of the hearths found in Archaeological Zone 1 (subpart 2e, **CUL-6**) and of a finite number of block exposures to reveal intact buried land surfaces there (subpart 2f, **CUL-6**). The project owner shall ensure that the preliminary report is a concise document that provides descriptions of the schedule and methods of the inventory field effort, a preliminary tally of the numbers and, where feasible, the types of archaeological deposits that were found, a discussion of the potential range of error in that tally, and a map of the locations of the found archaeological deposits that has topographic contours and the project site landform designations as overlays. The results of the formal inventory, as set out in the preliminary report, shall be the basis for the refinement of the provisional district boundary. The project owner shall ensure that the CRS then derives the samples for the hearths and the buried land surface block exposures relative to the refined provisional district boundary.
3. ~~At least 30 days p~~ Prior to the onset of construction_-related ground disturbance anywhere to the northeast of the refined provisional boundary for Archaeological Zone 1, subsequent to the CPM's approval of said boundary, the project owner shall ensure that the CRS completes the data recovery phases of the data recovery program (subparts 2e and 2f, **CUL-6**) and submits, for the review and approval of the CPM, a preliminary report of the results of those phases. The preliminary report shall be a concise document that provides descriptions of the schedule and methods of the data recovery effort, technical descriptions of excavated archaeological features and buried land surfaces that, while draft in format, present the highest resolution of technical data that can be derived from the data recovery field notes, plan and, as appropriate, profile drawings and photographs of excavated archaeological features and buried land surfaces, and technical descriptions and appropriate graphics of the stratigraphic contexts of excavated archaeological features and buried land surfaces. No construction_-related ground disturbance shall occur to the northeast of the refined provisional boundary for Archaeological Zone 1 prior to the project owner's receipt, in writing, of the CPM's approval of the preliminary data recovery report.
4. No longer than 180 days subsequent to the CPM's approval of the preliminary data recovery report, the project owner shall ensure that the CRS completes the requisite material analyses for, prepare, and submits, for the approval of the CPM, the conclusory report for the data recovery

program (subpart 2h, **CUL-6**).

5. No longer than 240 days subsequent to the CPM's approval of the preliminary data recovery report, the project owner shall ensure that the CRS completes the preparation of the California Register of Historical Resources nomination for Archaeological Zone 1 and submits the nomination to the State Historic Resources Commission for formal consideration (subpart 3, **CUL-6**). The nomination shall reflect the formal district boundary that shall be one result of the implementation of the data recovery program, as presented in the conclusory report for that program.
6. No longer than 240 days subsequent to the CPM's approval of the preliminary data recovery report, the project owner shall ensure that the CRS completes requirements of subpart 4a, **CUL-6** and provides the CPM with three copies of the final product of that effort, and prepares, and submits for the approval of the CPM, a product that fulfills the requirements of subpart 4b, **CUL-6**. Upon the CPM's approval of the latter product, the project owner shall ensure, as appropriate, the product's installation, implementation, or display.

RATIONALE

General - Consistency with General Conditions Definitions, page 7-1.

Magnetometry is labor intensive and expensive. As currently proposed the area of study (Archaeological Zone 1) could be up to 50 acres. One to two days per acre for field time and the same for post-processing and analysis equate to 100 to 200 days of investigation, prior to initiating excavations for data recovery. A more feasible approach would be up to a 5% magnetometry sample as long as the investigations are identifying buried anomalies.

Excavations ranging in size from 1 to 2 meters are typically sufficient to expose hearth features such as those identified at BSEP. For areas where the potential for buried land surfaces that may surround the hearths is to be investigated, larger excavations of 3 meters square provide an adequate exposure. If a cultural land surface is identified, the area of excavation could then be expanded up to a maximum of 5 meters square to provide a larger exposure.

- CUL-7** *Worker Environmental Awareness Program (WEAP).* Prior to and for the duration of construction-related ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment at the project site, laydown area, and along the linear facilities routes. The training shall be prepared by the CRS, may be conducted by any member of the archaeological team, and may be presented in the form of a video. The CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes. The training shall include:
1. A discussion of applicable cultural resources statutes, regulations, and related enforcement provisions;
 2. A summary of the effects of the proposed project on cultural resources;

3. A summary of the historical resources management program that has been negotiated to address the effects of the proposed project on cultural resources;
4. A discussion of the role of the workers in the historical resources management program;
5. Samples or visuals of artifacts that might be found in the project area;
6. A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
7. A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, the range of variation in the appearance of such deposits across the project area, and, more especially, the known range of variation in the archaeological deposits of Archaeological Zone 1;
8. Instruction that the CRS, alternate CRS, and CRMs have the authority to halt construction-related ground disturbance in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS;
9. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery, particularly in Archaeological Zone 1 for prehistoric archaeological deposits that are inconsistent with the known range of variation in the archaeological deposits there, and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;
10. An informational brochure that identifies the reporting procedures for Archaeological Zone 1 and non-Archaeological Zone 1 areas in the event of a discovery;
11. An acknowledgement form signed by each worker indicating that they have received the training; and
12. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

No ground disturbance shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the CPM.

Verification

1. At least 30 days prior to the start of construction-related ground disturbance anywhere on the project site, the CRS shall provide, as a stand-alone document or as an element of the HRMP, the training program draft text and graphics and the informational brochure to the CPM for review and approval.
2. At least 30 days prior to the start of construction-related ground disturbance anywhere on the project site, the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP-trained worker to sign.

3. Monthly, until all construction-related ground disturbance is complete, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of workers at the project site and on the linear facilities who have completed the training in the prior month and a running total of all persons who have completed training to date.

RATIONALE

General - Consistency with General Conditions Definitions, page 7-1.

Submittal of the training program draft text and graphics and the informational brochure to the CPM 30 days prior to ground disturbance allows sufficient review time. Only one WEAP program is needed for the project.

CUL-8 *Construction Monitoring Program.* The Monitoring and Discovery Plan (subpart 13, **CUL-4**) shall include separate protocols for construction monitoring, and for the discovery and treatment of new cultural resources that are found or when unanticipated effects to known cultural resources become evident during construction_-related ground disturbance. The construction monitoring protocol shall specify the different procedures below that the project owner shall follow during construction_-related ground disturbance in different parts of the project area and on different landforms in the project area, where the lateral extent and the character of project area landforms are known. As the source of the water that would be necessary to operate the proposed project remains an active focus of discussion, staff includes specifications here for the monitoring procedures that the project owner would need to follow in the event that the project owner ultimately chooses to construct either the Rosamond Community Service District or the City of California City treated wastewater pipeline alternative. Other alterations of the project area under **CUL-3** shall require the project owner to append the Monitoring and Discovery Plan to include monitoring procedures for the actions that would occur in any lands added to the original project area. The appended procedures shall be consistent with the landform-specific monitoring protocols below.

The project owner shall ensure that the CRS, alternate CRS, or CRMs actively monitor, full time, all construction_-related ground disturbance in the project area, in accordance with the landform-specific protocols below, to ensure that there are no impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner. Additionally, the project owner shall ensure that construction personnel, trained to recognize what archaeological site types are and are not known for Archaeological Zone 1, passively monitor construction_-related ground disturbance in the project area, also in accordance with the landform-specific protocols below.

Landform-specific Monitoring Protocols. The construction monitoring protocols specific to the different landform contexts in the project area variously have active and passive components. The active components relate to the construction monitoring protocols that are required for landform contexts that are outside of Archaeological Zone 1, and the passive components relate to the protocols for such contexts that are in Archaeological Zone 1. The efficacy of the whole series of construction monitoring protocols below depends on the project owner, prior to

the initiation of construction_-related ground disturbance, physically staking out the boundary of each landform and the refined provisional district boundary for Archaeological Zone 1, and ~~ensuring that the primary author of the January 2009 geoarchaeology study for the proposed project conduct-~~ will conduct field orientations for the CRS, the alternate CRS, and each CRM so that they are able to recognize the project area landforms and key subsurface sedimentary features such as paleosols and sedimentary contacts. The boundary lines on the surface of the project site are the referents that direct the differential implementation of the active and passive components of the protocols, and the subsurface paleosols and sedimentary contacts are the referents that vertically bound the requisite construction monitoring areas.

Monitoring Protocol for Landform Hf1

Active component. The active component of the monitoring protocol for the Hf1 landform requires the project owner to have the CRS, alternate CRS, or CRMs actively monitor all construction_-related ground disturbance down to the upper boundary of the paleosol that is buried in the landform. That boundary, which is the upper boundary of a preserved A horizon, is approximately 2 meters below the present surface of the landform.

Passive component. The owner shall have construction personnel on the project passively monitor for and halt construction upon the discovery of buried archaeological deposits in the portion of Archaeological Zone 1 on the Hf1 landform that appear to represent archaeological site types not previously known for the Zone. Any such discovery shall be subject to the discovery protocol of **CUL-9**. Construction personnel shall be given training, as part of the training program of **CUL-7**, which would facilitate the field recognition of archaeological site types that are and are not known for the district.

Applicability

Project Site. Active monitoring to the southwest of the refined provisional district boundary, and passive monitoring to the northeast of the refined provisional district boundary.

Transmission Line Infrastructure. Not applicable.

Emergency Access Road. Not applicable.

Rosamond Community Service District or City of California City Treated Wastewater Pipeline Alternatives. Passive monitoring to the northeast of the refined provisional district boundary.

Monitoring Protocol for Landform Hf1d

Active component. The active component of the monitoring protocol for the Hf1d landform requires the project owner to have the CRS, alternate CRS, or CRMs actively monitor all construction_-related ground disturbance down approximately 2 meters from the present surface of the landform to the upper contact of what are presently thought to be Pleistocene-age deposits of pebbles and cobbles.

Passive component. No passive monitoring on the Hf1d landform.

Applicability

Project Site. Active monitoring across the whole extent of the landform on the project site.

Transmission Line Infrastructure. Active monitoring across the whole extent of the landform in the portion of the project area that encompasses the construction area for the transmission line infrastructure. To implement the protocol for the Hf1d landform in the construction area for the transmission line infrastructure, the project owner shall project out the boundary between the Hf1d and Hf3 landforms, which appears to be coincident with the Cantil Valley fault, to the southwest of the project site, and implement the protocol for the Hf1d landform to the southeast of that projected boundary.

Emergency Access Road. Not applicable.

Rosamond Community Service District or City of California City Treated Wastewater Pipeline Alternatives. Not applicable.

Monitoring Protocol for Landform Hf2

Active component. The active component of the monitoring protocol for the Hf2 landform requires the project owner to have the CRS, alternate CRS, or CRMs actively monitor all construction-related ground disturbance to the maximum depth of such disturbance.

Passive component. The project owner shall have construction personnel on the project passively monitor for and halt construction upon the discovery of buried archaeological deposits in the portion of Archaeological Zone 1 on the Hf2 landform that appear to represent archaeological site types not previously known for the Zone. Any such discovery shall be subject to the discovery protocol of **CUL-9**. Construction personnel shall be given training, as part of the training program of **CUL-7**, which would facilitate the field recognition of archaeological site types that are and are not known for the district.

Applicability

Project Site. Active monitoring to the southwest of the refined provisional district boundary, and passive monitoring to the northeast of the refined provisional district boundary.

Transmission Line Infrastructure. Not applicable.

Emergency Access Road. Not applicable.

Rosamond Community Service District or City of California City Treated Wastewater Pipeline Alternatives. Passive monitoring to the northeast of the refined provisional district boundary.

Monitoring Protocol for Landform Hf3

Active component. No active monitoring on the Hf3 landform.

Passive component. No passive monitoring on the Hf3 landform.

Applicability

Project Site. Not applicable.

Transmission Line Infrastructure. Not applicable.

Emergency Access Road. Not applicable.

Rosamond Community Service District or City of California City Treated Wastewater Pipeline Alternatives. Not applicable.

Monitoring Protocol for Landform Hf4

Active component. The active component of the monitoring protocol for the Hf4 landform requires the project owner to have the CRS, alternate CRS, or CRMs actively monitor all construction-related ground disturbance to the maximum depth of 4 meters.

Passive component. The owner shall have construction personnel on the project passively monitor for and halt construction upon the discovery of buried archaeological deposits in the portion of Archaeological Zone 1 on the Hf4 landform that appear to represent archaeological site types not previously known for the Zone. Any such discovery shall be subject to the discovery protocol of **CUL-9**. Construction personnel shall be given training, as part of the training program of **CUL-7**, which would facilitate the field recognition of archaeological site types that are and are not known for the district.

Applicability

Project Site. Active monitoring to the southwest of the refined provisional district boundary, and passive monitoring to the northeast of the refined provisional district boundary.

Transmission Line Infrastructure. Not applicable.

Emergency Access Road. Not applicable.

Rosamond Community Service District or City of California City Treated Wastewater Pipeline Alternatives. Active monitoring to the southwest of the refined provisional district boundary, and passive monitoring to the northeast of the refined provisional district boundary.

Monitoring Protocol for Unknown Landforms

Active component. The active component of the monitoring protocol for unknown landforms requires the project owner to have the CRS, alternate CRS, or CRMs actively monitor all construction-related ground disturbance to the maximum depth of any such disturbance.

Passive component. No passive monitoring on unknown landforms.

Applicability

Project Site. Not applicable.

Transmission Line Infrastructure. Not applicable.

Emergency Access Road. Active monitoring for the whole length of the proposed emergency access road, which is outside and projects east of the project site to Neuralia Road.

Rosamond Community Service District or City of California City Treated Wastewater Pipeline Alternatives. Active monitoring for the whole length of either pipeline route alternative, both of which are outside and to the east and south of the project site.

Full-time archaeological monitoring for this project shall be the archaeological monitoring of all construction-related ground disturbance in the project area, in accordance with the Landform-specific Monitoring Protocols, above. ~~Where excavation equipment is actively removing dirt and hauling the excavated material farther than fifty feet from the location of active excavation, full-time archaeological monitoring shall require at least two monitors per excavation area. In this circumstance, one monitor shall observe the location of active excavation and a second monitor shall inspect the dumped material. For excavation areas where the excavated material is dumped no further than fifty feet from the location of active excavation, one monitor shall both observe the location of active excavation and inspect the dumped material.~~

In the event that the CRS believes that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.

The research design in the HRMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered.

A Native American monitor shall be obtained to monitor ground disturbance in areas where Native American artifacts may be discovered. Contact lists of interested Native Americans and guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM. The CPM will either identify potential monitors or will allow ground disturbance to proceed without a Native American monitor.

On forms provided by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of noncompliance with the Conditions and/or applicable LORS. Copies of the daily monitoring logs shall be provided by the CRS to the CPM, if requested by the CPM. From these logs, the CRS shall compile a monthly monitoring

summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended.

The CRS or alternate CRS shall report daily to the CPM on the status of the project's cultural resources-related activities, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM.

In the event that the CRS believes that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.

The CRS, at his or her discretion, or at the request of the CPM, may informally discuss cultural resources monitoring and mitigation activities with Energy Commission technical staff. Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS, or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these Conditions.

Upon becoming aware of any incidents of non-compliance with the Conditions and/or applicable LORS, the CRS and/or the project owner shall notify the CPM by telephone or e-mail within 24 hours. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the Conditions. When the issue is resolved, the CRS shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided in the next MCR for the review of the CPM.

Verification

1. At least 30 days prior to the start of ground disturbance anywhere on the project site ~~30 meters or greater to the southwest of the provisional boundary of Archaeological Zone 1 or on the portions of the project area beyond the project site, and at least 270 days prior to the start of ground disturbance anywhere in Archaeological Zone 1 or 30 meters or less to the southwest of the provisional boundary for the Zone,~~ the project owner shall submit the Monitoring and Discovery Plan to the CPM for review and approval.
2. At least 30 days prior to the start of construction_-related ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log.
3. Monthly, while monitoring is on-going, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS and shall attach any new DPR 523A forms completed for finds treated prescriptively, as specified in the HRMP.
4. At least 10 days prior to the start of construction_-related ground disturbance, the project owner shall physically stake out, ~~every 200 feet~~ along the surface of the ground and in a conspicuous manner, either the provisional boundary of Archaeological Zone 1, or, if it has been given the approval of the CPM, the refined provisional district boundary for the Zone, and the known

boundary of each landform on the project site as each such boundary is reported in the February 6, 2009 preliminary field report for the geoarchaeology study (Young 2009b). The project owner shall engage the author of that preliminary report to assist in the location of each landform boundary on the ground.

5. At least 30 days prior to the start of construction_-related ground disturbance, the project owner shall ~~engage the author of the February 6, 2009 preliminary field report for the geoarchaeology study (Young 2009b) to~~ conduct field orientations for the CRS, the alternate CRS, and each CRM so that they are each able to recognize the project area landforms and key subsurface sedimentary features in the landform-specific monitoring protocols such as paleosols and sedimentary contacts. The replacement of the CRS, the alternate CRS, or CRMs shall necessitate new field orientations to train new personnel.
6. At least 30 days prior to the start of construction_-related ground disturbance in any portion of the project area added under **CUL-3**, the project owner shall submit a numbered appendix to the Monitoring and Discovery Plan to the CPM for review and approval. Each such appendix shall include monitoring procedures for the actions that would occur in lands added to the original project area. The appended procedures shall be consistent with the landform-specific monitoring protocols of **CUL-8**.
7. Daily, as long as no cultural resources are found, the CRS shall provide a statement that “no cultural resources over 50 years of age were discovered” to the CPM as an email, or in some other form acceptable to the CPM.
8. At least 24 hours prior to reducing or ending daily reporting, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS’s justification for reducing or ending daily reporting.
9. At least 24 hours prior to implementing a proposed change in monitoring level, documentation justifying the change shall be submitted to the CPM for review and approval.
10. No later than 30 days following the discovery of any Native American cultural materials, the project owner shall submit to the CPM copies of the information transmittal letters sent to the Chairpersons of the Native American tribes or groups who requested the information.
11. Within 15 days of receiving them, the project owner shall submit to the CPM copies of any comments or information provided by Native Americans in response to the project owner’s transmittals of information.

RATIONALE

General - Consistency with General Conditions Definitions, page 7-1.

The closer to the start of construction the more likely the staking will be in place at the start of

construction. Although field orientation will be conducted, It is not feasible to commit to engage a specific individual to conduct the field orientation regarding landforms. Standard archaeological monitoring of mechanical excavations consists of viewing soils as they are removed from their in situ location and does not involve a second monitor.

Maximum excavation in landform Hf4 is limited to 4 meters based on the geoarchaeological investigation that identified area below that depth as high energy and not conducive to intact preservation of archaeological sites (Young 2009:14).

CUL-9 *Discovery and Discovery Treatment Protocols.* The Monitoring and Discovery Plan (subpart 13, **CUL-4**) shall include separate protocols for construction monitoring, and for the discovery and treatment of new cultural resources that are found outside of the refined provisional boundary for Archaeological Zone 1, when archaeological site types not previously known for the Zone are found inside said boundary, or when unanticipated effects to known cultural resources become evident during construction-related ground disturbance. The Discovery Protocol shall specify the procedures that the project owner shall follow upon the discovery of a new resource outside of Archaeological Zone 1, of a new archaeological site type in Archaeological Zone 1, or upon the recognition of an unanticipated effect. The project owner shall, in any such instance, grant authority to halt construction-related ground disturbance to the CRS, alternate CRS, and the CRMs. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

In the event that cultural resources that may be over 50 years of age are found, or, if younger, determined exceptionally significant by the CPM, or archaeological site types not previously known for Archaeological Zone 1 are found in it, or impacts to such resources can be anticipated, ground disturbance shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. Monitoring and daily reporting as provided in **CUL-8** shall continue during all ground-disturbing activities elsewhere on the project site. The halting or redirection of ground disturbance shall remain in effect until the CRS has visited the discovery, and all of the following have occurred:

1. The CRS has notified the project owner, and the CPM has been notified within 24 hours of the discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning, including a description of the discovery (or changes in character or attributes), the action taken (i.e., work stoppage or redirection), a recommendation of CRHR eligibility, and recommendations for mitigation of any cultural resources discoveries, whether or not a determination of CRHR eligibility has been made.
2. If the discovery would be of interest to Native Americans, the CRS has notified all Native American groups that expressed a desire to be notified in the event of such a discovery.
3. The CRS has completed field notes, measurements, and photography for a DPR 523A "Primary Record" form. Unless the find can be treated prescriptively, as specified in the

HRMP, the "Description" entry of the DPR 523A "Primary Record" form shall include a recommendation on the CRHR eligibility of the discovery. The project owner shall submit completed forms to the CPM.

4. The CRS, the project owner, and the CPM have conferred, and the CPM has concurred with the recommended eligibility of the discovery and approved the CRS's proposed data recovery, if any, including the curation of the artifacts, or other appropriate mitigation; and any necessary data recovery and mitigation have been completed.

The discovery and discovery treatment protocols in the Monitoring and Discovery Plan shall specify that the preferred treatment strategy for any buried archaeological deposits found during the course of the construction, operation, and maintenance of the proposed project is avoidance. A mitigation plan shall be prepared for any CRHR-eligible (as determined by the CPM) resource, impacts to which cannot be avoided, except for archaeological site types in Archaeological Zone 1 that are already known to be characteristic of that district.

Prescriptive treatment plans may be included, where appropriate, in the HRMP for cultural resources that represent marginal data sets.

Verification

1. At least 30 days prior to the start of ground disturbance anywhere on the project site ~~30 meters or greater to the southwest of the provisional boundary of Archaeological Zone 1 or on the portions of the project area beyond the project site, and at least 270 days prior to the start of ground disturbance anywhere in Archaeological Zone 1 or 30 meters or less to the southwest of the provisional boundary for the Zone,~~ the project owner shall submit the Monitoring and Discovery Plan to the CPM for review and approval.
2. At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS, and CRMs have the authority to halt construction-related ground disturbance in the vicinity of a cultural resources discovery, and that the project owner shall ensure that the CRS notifies the CPM within 24 hours of a discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning.
3. Within 48 hours of the discovery of a resource of interest to Native Americans, the project owner shall ensure that the CRS notifies all Native American groups that expressed a desire to be notified in the event of such a discovery.
4. Unless the discovery can be treated prescriptively, as specified in the HRMP, completed DPR 523 Series forms for resources newly discovered during ground disturbance shall be submitted to the CPM for review and approval no later than 24 hours following the notification of the CPM, or 48 hours following the completion of data recordation/recovery, whichever the CRS decides is more appropriate for the subject cultural resource.

RATIONALE

General - Consistency with General Conditions Definitions, page 7-1.

In an effort to reduce the number of documents submitted for review and approval, one Monitoring and Discovery Plan will be prepared. There is not a need for more than one Monitoring and Discovery Plan.

CUL-10 *Cultural Resources Report (CRR)*. The project owner shall submit the final CRR to the CPM for approval. The final CRR shall be written by or under the direction of the CRS and shall be provided in the ARMR format (COHP 1990). The final CRR shall report on all field activities including dates, times and locations, findings, samplings, and analyses. All survey reports, DPR 523 Series forms, data recovery reports, and any additional research reports not previously submitted to the California Historical Resource Information System (CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as appendices to the final CRR.

If the project owner requests a suspension of construction_-related ground disturbance and/or construction activities, then a draft CRR that covers all cultural resources activities associated with the project shall be prepared by the CRS and submitted to the CPM for review and approval on the same day as the suspension/extension request. The draft CRR shall be retained at the project site in a secure facility until ground disturbance and/or construction resumes or the project is withdrawn. If the project is withdrawn, then a final CRR shall be submitted to the CPM for review and approval at the same time as the withdrawal request.

Verification

1. Within 90 days after completion of all construction_-related ground disturbance (including landscaping), the project owner shall submit the final CRR to the CPM for review and approval. If any reports have previously been sent to the CHRIS, then receipt letters from the CHRIS or other verification of receipt shall be included in an appendix.
2. Within 90 days after completion of all construction_-related ground disturbance (including landscaping), if cultural materials requiring curation were collected, the project owner shall provide to the CPM a copy of an agreement with, or other written commitment from, a curation facility that meets the standards stated in the California State Historical Resources Commission's *Guidelines for the Curation of Archaeological Collections*, to accept cultural materials, if any, from this project. Any agreements concerning curation will be retained and available for audit for the life of the project.
3. Within 10 days after CPM approval, the project owner shall provide documentation to the CPM confirming that copies of the final CRR have been provided to the SHPO, the CHRIS, the curating institution, if archaeological materials were collected, and to the Tribal Chairpersons of any Native American groups requesting copies of project-related reports.
4. Within 30 days after requesting a suspension of construction activities, the project owner shall submit a draft CRR to the CPM for review and approval.

ATTACHMENT 2

Beacon's Proposal

367 352 270 210 180 150 112 105 97 75 60 30

Provide resumes for CRS for entire site (CUL-1)

Provide existing project data for entire site (CUL-2)

Submit Historic Resources Management Plans (HRMP) for Archaeological Zone 1 (CUL-4)

Provide evaluations of resources in new project area (CUL-3)

Provide survey data for new project area

Submit Monitoring and Discovery Plan for entire site (CUL-8/9)

Submit HRMP for Non-Archaeological Zone 1 (CUL-4)

Provide worker training material for entire site (CUL-7)

Complete geophysical testing and submit sample design for Archaeological Zone 1

Submit magnetometry or trenching results for Archaeological Zone 1

Submit preliminary data recovery report (CUL-6)

Construction

Prior to Construction

Days Prior to Construction

Provide existing project data for Archaeology Zone 1 (CUL-1)

Provide worker training material for Archaeological Zone 1 (CUL-1)

Submit Historic Resources Management Plans (HRMP) for Archaeological Zone 1 (CUL-4)

Provide resumes for Archaeology Zone 1 (CUL-7)

Construction Monitoring Program (CUL-8)

Submit Monitoring and Discovery Plan for Archaeological Zone 1 (CUL-9)

Complete geophysical testing and submit sample design for Archaeological Zone 1 (CUL-6)

Provide resumes for Non-Archaeological Zone 1 (CUL-1)

Submit magnetometry or trenching results for Archaeological Zone 1 (CUL-6)

Provide existing project data for Non-Archaeological Zone 1 (CUL-2)

Provide evaluations of resources in new project area (CUL-3)

Provide survey data for new project area (CUL-3)

Submit HRMP for Non-Archaeological Zone 1 (CUL-4)

Submit preliminary data recovery report (CUL-6)

Provide worker training material for Non-Archaeological Zone 1 (CUL-7)

Submit Monitoring and Discovery Plan for Non-Archaeological Zone 1 area (CUL-9)

California Energy Commission's Proposal

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

In the Matter of:

Beacon Solar, LLC's)
Application for Certification of the)
Beacon Solar Energy Project)
_____)

Docket No. 08-AFC-2

**BEACON SOLAR, LLC'S CULTURAL RESOURCES REBUTTAL TESTIMONY OF
KENNETH STEIN**

March 9, 2010

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BEACON SOLAR ENERGY PROJECT

CULTURAL RESOURCES REBUTTAL TESTIMONY

CULTURAL RECOURSES REBUTTAL TESTIMONY OF KENNETH STEIN ON BEHALF OF BEACON SOLAR, LLC IN RESPONSE TO FINAL STAFF ASSESSMENT CULTURAL RESOURCES CONDITIONS OF CERTIFICATION

Q1. Please state your name and title for the record.

A1. My name is Kenny Stein and I am an Environmental/Permitting Manager for NextEra Energy Resources, LLC.

Q2. Is your resume attached to your declaration marked as Exhibit 279 your declaration in the area of executive summary in this proceeding?

A2. Yes it is.

Q3. Please provide a summary of your qualifications highlighting those areas that apply to the testimony you provide below.

A3. In my position I am responsible for all environmental aspects of siting, permitting and construction compliance for several solar generating facilities. These facilities are located in California, Arizona and Spain. I have also held the same position for wind and gas generation facilities. I have been working in the energy field in this capacity since 1999. Both my undergraduate and graduate degrees are in environmental fields of study.

Q4. Have you reviewed the cultural resources section of the Final Staff Assessment including California Energy Commission Staff's ("Staff") proposed conditions of certification?

A4. Yes. I have.

Q5. Please describe your concerns about specifying an individual to satisfy the requirements of condition of certification CUL-8?

A5. The verification of CUL-8 requires that a specific individual be used to stake out the boundary of Archeological Zone 1:

“The project owner **shall engage the author** of that preliminary report to assist in the location of each landform boundary on the ground.

At least 30 days prior to the start of construction-related ground disturbance, the project owner **shall engage the author** of the February 6, 2009 preliminary field report for the geoarchaeology study (Young 2009b) to conduct field orientations for the CRS, the alternate CRS, and each CRM . . .”

Beacon engaged the services of the Craig Young, the author of the February 6, 2009 preliminary field report. Therefore, our concern is not that this individual is not qualified or capable to conduct the work. Our concern is that conditions of certification should never specify

BEACON SOLAR ENERGY PROJECT**CULTURAL RESOURCES REBUTTAL TESTIMONY**

a particular individual to conduct a specific task. There can be numerous valid reasons why a specific individual may not be available to complete a task including illness, vacation, other obligations or relocation, just to name a few. We cannot have one specific individual's schedule or availability dictate the construction schedule for the entire project. It is simply not prudent to proceed in this manner and we believe, that is why all of the other conditions of certification in other subject areas call out the requirements for the task but do not specify a specific individual to implement the task. Therefore, we have proposed a modification to CUL-8 that is attached to the testimony of Rebecca Apple deleting the requirement that a specific individual mark the landform and conduct the orientations.

Q6. Mr. Stein, do you support the changes to the cultural resources conditions of certification proposed by Ms. Apple?

A6. Yes. I do.

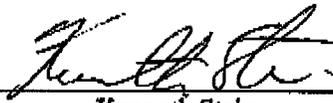
Q7. Does your testimony represent your best professional judgment?

A7. Yes it does.

Q8. Is your testimony true and correct to the best of your knowledge?

A8. Yes it is.

Executed at Ft. Lauderdale, Florida on March 9, 2010.



Kenneth Stein

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

In the Matter of:

Beacon Solar, LLC's)
Application for Certification of the)
Beacon Solar Energy Project)
_____)

Docket No. 08-AFC-2

**BEACON SOLAR, LLC'S CULTURAL RESOURCES REBUTTAL TESTIMONY OF
DUANE MCCLOUD**

March 9, 2010

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EXHIBIT 331

BEACON SOLAR ENERGY PROJECT

CULTURAL RESOURCES REBUTTAL TESTIMONY

CULTURAL RESOURCES REBUTTAL TESTIMONY OF DUANE MCCLOUD ON
BEHALF OF BEACON SOLAR ENERGY, LLP IN RESPONSE TO FINAL STAFF
ASSESSMENT CONDITIONS OF CERTIFICATION

Q1. Please state your name and title for the record.

A1. My name is Duane McCloud, and I am the Engineering Manager for NextEra Energy Resources, LLC.

Q2. Is your resume attached to Exhibit 246, your declaration for your testimony in the area of Project Description previously filed in this proceeding?

A2. Yes, it is.

Q3. Please provide a summary of your qualifications highlighting those areas that apply to the testimony you provide below.

A3. I have a Bachelor of Science in Chemical Engineering. I am the lead engineer for the due diligence and development of the Beacon Solar Energy Project ("Beacon"). In that role I am responsible for managing the initial design for Beacon. I am familiar with the grading and drainage design for Beacon as well as the expected general order of construction grading and timing for construction of the rerouted wash for this project.

I have worked in the power industry in design, operations and maintenance, due diligence and development since 1982 with increasing responsibility. My experience includes solar, geothermal, wind, and fossil fired power plants.

Q4. Are you familiar with the requirements contained in the Final Staff Assessment cultural resources conditions of certification?

A4. I am aware of the effort by California Energy Commission Staff ("Staff") to separate the requirements for archeological resources zone 1 and the remainder of the Beacon site. I am aware of the approximate location of archeological resources zone 1 on the project site. I am also aware that the cultural investigation and data recovery requirements for archeological resources zone 1 will require approximately a year to complete.

Q5. Can you describe generally how construction of Beacon will proceed?

A5. Sure. Because of the potential flood implications of the desert wash through the site, one of the first onsite activities will be to build the rerouted wash. The existing desert wash onsite is relatively flat and over a mile wide essentially running through the middle of the site. See Figure 3, Site Layout from the Project Design Refinements document (Exhibit 190, figure attached hereto for ease of reference). Beacon cannot begin foundation construction in the existing wash area until the rerouting of the wash is complete. Furthermore, the site is designed to have a balanced cut and fill. Material from the higher elevation areas must be moved to the areas lower in elevation. Therefore, it would be very difficult to begin construction in only one area of the site and completely avoid archeological resources zone 1 for any more than six months from

BEACON SOLAR ENERGY PROJECT

CULTURAL RESOURCES REBUTTAL TESTIMONY

initiation of construction. The current requirements for cultural resources work on archeological zone 1 will substantially delay construction of the project, essentially pushing back the effective schedule by up to six months.

Q6. Could you begin construction outside of archeological resources zone 1?

A6. We could and actually plan to do so. However the construction cannot proceed very far before construction needs to migrate into and include areas identified as zone 1. Zone 1 includes solar field areas that will need to be both cut and filled, and also includes the northernmost portions of the rerouted wash, mostly a cut area. In order to complete rough earthwork for site leveling, this area must be disturbed. The net impact is that dirt cut from this area will be needed as fill outside the area. With the current proposed conditions, construction would have to stop before the overall site can be leveled and before the wash reroute can be completed.

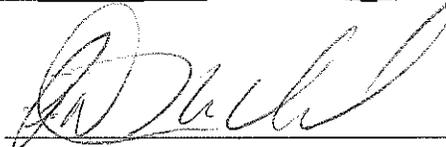
Q7. Does this testimony represent your best professional judgment?

A7. Yes it does.

Q8. Is this testimony true and correct to the best of your knowledge?

A8. Yes it is.

Executed at Juno Beach, Florida on March 9, 2010.



Duane McCloud

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

In the Matter of:

Beacon Solar, LLC's)	
Application for Certification of the)	Docket No. 08-AFC-2
Beacon Solar Energy Project)	
_____)	

**BEACON SOLAR, LLC'S HEAT TRANSFER FUND REBUTTAL TESTIMONY OF
DUANE MC CLOUD**

March 9, 2010

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EXHIBIT 332

BEACON SOLAR ENERGY PROJECT

HEAT TRANSFER FLUID REBUTTAL TESTIMONY

HEAT TRANSFER FLUID REBUTTAL TESTIMONY OF DUANE MCCLOUD ON
BEHALF OF BEACON SOLAR ENERGY, LLP IN RESPONSE TO TESTIMONY OF MATT
HAGEMANN ON BEHALF OF CALIFORNIA UNIONS FOR RELIABLE ENERGY

Q1. Please state your name and title for the record.

A1. My name is Duane McCloud, and I am the Lead Engineer for Solar Development for NextEra Energy Resources, LLC.

Q2. Is your resume attached to Exhibit 246, your declaration for your testimony in the area of Project Description previously filed in this proceeding?

A2. Yes, it is.

Q3. Please provide a summary of your qualifications highlighting those areas that apply to the testimony you provide below.

A3. I have a Bachelor of Science in Chemical Engineering. I am the lead engineer for the preliminary design and development of the Beacon Solar Energy Project ("Beacon"). In that role I am responsible for managing the design engineers for Beacon including the heat transfer fluid (HTF) system including the pipeline layout. I am familiar with the quantities of liquid released in the past at the Solar Generating Stations (SEGS) III through IX currently owned by affiliated companies although I was not involved in development of the design of those systems. I have worked in the power industry in design, operations and maintenance, due diligence and development since 1982 with increasing responsibility. My experience includes solar, geothermal, wind, and fossil fired power plants.

Q4. Have you reviewed the Testimony of Matt Hagemann regarding hazardous materials, Soil Resources, and Waste Management?

A4. Yes, I have. Mr. Hagemann's testimony in section II provides a list of the previous HTF releases from SEGS III through IX.

Q5. Have you read the transcript from the December 1, 2009 Status Conference regarding the HTF system where Hearing Officer Celli stated:

HEARING OFFICER CELLI: . . .

The hazardous materials, 4.4-18, and this is an important point, more than I actually thought. Talks about the project owner – this is a condition – shall place an adequate number of isolation valves on the heat transfer fluid pipe loops so as to be able to isolate a solar panel loop in the event of a leak.

I read in CURE's testimony that at SEGS there was a 30,000 gallon leak in 2008. What we wanted to know, and you don't have to answer now, but what we're interest in is some specificity as to what's an adequate number of isolation valves to prevent that kind of a leak. That was at 4.4-18.

BEACON SOLAR ENERGY PROJECT

HEAT TRANSFER FLUID REBUTTAL TESTIMONY

A5. Yes, I have. And, I would like to point out that Beacon is also interested in reducing HTF leaks. Besides losing the quantity of HTF and incurring the costs of cleanup and replacement, HTF leaks take parabolic troughs out of service and reduce the output of the Project. Therefore, it is in Beacon's self interest to minimize HTF leaks.

Q6. Please describe the status of the design of the piping layout and HTF leak detection and control system.

A6. Timely HTF leak detection and control are critical to the operation of the Project. Leak detection is critical because HTF leaks reduce the efficient operation of the facility and can take entire parabolic trough loops out of service. Beacon has presented reasonable estimates of the volumes of HTF needed for the Project based upon the preliminary layouts for the Project presented in this proceeding. Beacon has not completed a detailed piping layout for the Project. This is not unusual. In parabolic trough power plants like Beacon the piping networks are highly optimized and reflect specific requirements of the equipment selected for the Project that could impact the precise layout of the Project and the volumes of HTF needed. One of the goals of the system optimization is a reduction in the total HTF quantity needed for the Project.

Q7. Please provide some background on how the HTF system will be designed for the Beacon solar field and the amount of HTF in the various sections.

A7. The proposed solar field will be laid out in sections. As proposed, the solar field would be separated into 4 to 10 sections that could be isolated in the event of a leak or fire. Each section will be supplied by a main section header running north-south. These north-south section headers connect to east-west laterals that supply HTF to each section and subsequent collector loops. Each collector loop will contain approximately 630 gallons of HTF that can be isolated using loop isolation valves. However, a much larger maximum quantity of HTF between isolation valves is contained in the main headers and in the east-west laterals that supply each section. The quantities of HTF in the main headers between valves is as much as 115,000 gallons.

Q8. In your experience where do the HTF leaks most often occur?

A8. The large bore piping areas in the main header and east-west laterals represent an unlikely spill risk due to the location and design of these headers. In over 20 years of the operation of the Mojave Desert SEGS (I-IX), there has been no significant HTF spill resulting from a failure or damage to the HTF header piping. History has shown that the most likely location of an HTF spill is at a mechanical connection such as valves and flanges or the solar collector loops.

Q9. Can you explain what you have learned about HTF containment from the operating experience at the SEGS facilities?

A9. Sure. While putting in a large number of isolation valves might seem to reduce the potential for a large spill, it should be noted that the 2007 HTF spill at Kramer Junction, the largest in plant history, occurred due to the failure of a valve. A valve between the HTF

BEACON SOLAR ENERGY PROJECT

HEAT TRANSFER FLUID REBUTTAL TESTIMONY

expansion vessel and the HTF heater exchangers that functions as a pump bypass valve had a blowout of the valve stem. Even with the pumps shutdown and the system venting at its maximum, the higher pressure in the expansion vessel resulted in the HTF fluid being quickly released from the system. While almost half of the HTF was contained by the expansion vessel secondary containment, the HTF that spilled sprayed onto the adjacent fields due to the exact location and orientation of this failure. However, this large spill nonetheless resulted in no offsite release of HTF and all contaminated soils were collected and disposed as permits required. Since that failure numerous modifications have been made to prevent a recurrence, and due to fundamental changes in the fluid path design for Beacon (expansion and pump locations), the potential for such a failure is further reduced.

Q10. How are you incorporating the knowledge gained from operations at SEGS into the design for Beacon?

A10. The proposed design for Beacon will incorporate numerous steps and features to minimize the potential for a large spill. These include the installation of remote pressure sensing devices that will provide indication of a sudden change in pressure indicative of a spill. The design will also incorporate the installation of remote operated valves of a proven design that will allow sections of the solar field to be isolated if such a spill is detected. Finally, the detailed design will include a formal hazard potential analysis to determine the proper location and frequency for any additional manual isolation valves in the system and identify the appropriate automatic shutdown protocols for the system in the event of a large failure. That review will also incorporate the 20 years of lessons learned from SEGS related to all HTF spill events and what can be done to eliminate the potential for a spill to occur.

As with the existing facilities, best management practices will also be in place, and as the first responders to a spill, the operators can alleviate the problem well before the total volume of fluid from any isolated section is lost. In the event of a loop failure, the failed loop can be easily isolated and equipment will be readily available at Beacon to collect and prevent any additional leaking fluid from contaminating the soil. The loop will be designed to be easily and safely drained at which point repairs can be made. In the extreme case where a leak occurs in close proximity to the isolation valves which would limit safe access to them even with use of an extension arm, procedures will exist to limit the HTF loss by stopping pumps, closing main and any intermediate isolation valves to that portion of the field, and closing off all other individual loops to limit the additional fluid that will be introduced to the failure site. The project will use manual isolation valves at each loop as well as appropriate automatic valves located at section headers, the pump header, and laterals. The isolation valves, experienced personnel, and work procedures will limit spills within the facility and prevent any HTF from leaving the site. As outlined in the Report of Waste Discharge, a Spill Prevention Control and Countermeasure will be prepared for the facility which will include procedures for the unforeseen event of a large HTF spill.

Q11. Does this testimony represent your best professional judgment?

A11. Yes it does.

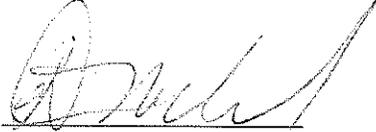
BEACON SOLAR ENERGY PROJECT

HEAT TRANSFER FLUID REBUTTAL TESTIMONY

Q12. Is this testimony true and correct to the best of your knowledge?

Q12. Yes it is.

Executed at Juno Beach, Florida on March 8, 2010.

A handwritten signature in cursive script, appearing to read "Duane McCloud", written over a horizontal line.

DUANE MCCLOUD

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

In the Matter of:

Beacon Solar, LLC's)	
Application for Certification of the)	Docket No. 08-AFC-2
Beacon Solar Energy Project)	
_____)	

**BEACON SOLAR, LLC'S HEAT TRANSFER FLUID REBUTTAL TESTIMONY OF
MICHAEL FLACK**

March 9, 2010

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EXHIBIT 333

BEACON SOLAR ENERGY PROJECT

HEAT TRANSFER FLUID REBUTTAL TESTIMONY OF MICHAEL FLACK

HEAT TRANSFER FLUID REBUTTAL TESTIMONY OF MICHAEL FLACK ON BEHALF OF BEACON SOLAR, LLC IN RESPONSE TO TESTIMONY OF MATT HAGEMANN FILED ON BEHALF OF THE CALIFORNIA UNIONS FOR RELIABLE ENERGY

Q1. Please state your name and title for the record.

A1. My name is Michael Flack and I am a senior program manager at the AECOM Office in Camarillo, California.

Q2. Is your resume attached to your declaration marked as Exhibit 295 in this proceeding?

A2. Yes it is.

Q3. Please provide a summary of your qualifications highlighting those areas that apply to the testimony you provide below.

A3. I am a Professional Geologist and Certified Engineering Geologist in the State of California, with over 27 years of experience in soil and groundwater investigation and remediation at hazardous waste sites, under CERCLA and RCRA regulation. I have assisting responsible parties, regulatory agencies, and water purveyors in and the implementation of soil and water supply remediation on both a small and large scale throughout California, managed hazardous waste characterization and cleanups and have worked to indentify alternatives to replace groundwater resources impacted by a wide-range of chemicals, including petroleum hydrocarbons.

Q4. Have you reviewed the testimony of Matt Hagemann filed on November 12, 2009 by the California Unions for Reliable Energy?

A4. Yes. I have.

Q5. Do you agree with the conclusions reached by Mr. Hagemann?

A5. No. I do not.

Q6. Please briefly explain why you disagree.

A6. The Waste Discharge Requirements proposed by the Lahontan Regional Water Quality Control Board and included in the Final Staff Assessment (FSA) adequately address the procedure and cleanup requirements for different amounts of and types of heat transfer fluid (HTF) spills.

BEACON SOLAR ENERGY PROJECT

HEAT TRANSFER FLUID REBUTTAL TESTIMONY OF MICHAEL FLACK

1. Plans for Responding to HTF Spills

Q7. What are Mr. Hagemann's concerns?

A7. First, Mr. Hagemann is concerned about the plans for responding to HTF spills. (Hagemann at 5-6.) Second, he is concerned about setting a numerical criterion for the determination for characterization of the spill. (See Hagemann at 5-4.)

Q8. Do the Waste Discharge Requirements provided in the FSA address Mr. Hagemann's contentions?

A8. The conditions of certification and waste discharge requirements (WDRs) presented in related appendices are wholly adequate to protect human health and the environment from a release of HTF. Condition WASTE-6 stipulates preparation of an Operation Waste Management Plan and the WDRs outlined in the associated appendices require preparation of a Spill Pollution Control and Countermeasures (SPCC) plan (Appendix G, Attachment B.g). The SPCC will include a section on Spill Response and Reporting as required under the Code of Federal Regulations, Title 40, Part 112. Both documents require procedures and protocols following those outlined by Mr. Hagemann for the management of waste materials.

WASTE-7 provides the requirements for development of numerical standards for rendering the waste hazardous or non-hazardous. Protocols for the development of numerical standards for HTF-impacted soils through the Department of Toxic Substances Control (DTSC) were outlined in the revised Report of Waste Discharge submitted by Beacon (Beacon Exhibit 203). These protocols will be included in the Operational Waste Management Plan and the SPCC Plan. DTSC requires the determination of whether the HTF contaminated soils are hazardous or non-hazardous through a sampling protocol implemented after the project is operational. DTSC will not allow the Project to set a level now based on hazardous level concentrations from similar project sites and operations. Since the protocols for establishing the waste character as either non-hazardous or hazardous requires sampling of the waste stream, the establishment of the numerical criteria will be initiated upon the first "release" of HTF to the environment. The WDRs did establish the treatment standard for the HTF-impacted soils at 100 milligrams per kilogram or 1/100th of the hazardous waste level, whichever is lower (page 4.9-191, III.C. "special provisions for the land treatment unit") at which point the soils can be used as a fill material, road base or cover at the Facility. Furthermore, even though the DTSC requires this determination to be made on a case-by-case basis, there is no reason to believe that the threshold level will be much different than the determination that the DTSC made for the existing SEGS facilities (Beacon Exhibit 48).

Q9. Mr. Hagemann indicates that a corrective action plan should be required at the point of spill origin and that it should be included as a requirement of certification. What is your opinion about including a corrective action plan as a condition?

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A9. WASTE-6 requires the preparation of an Operational Waste Management Plan which requires detailed procedures for the sampling, classification and management of waste materials. Procedures and protocol for the assessment and remediation of an HTF release will be provided in this document. A specific condition for corrective action is not warranted given the requirements stipulated in the WASTE Conditions and WDRs.

2. Plans for Storing Hazardous Waste and Contaminated Soil

Q10. Mr. Hagemann indicates that temporary staging of impacted soils is not appropriate and only allowed if there are no free liquids and that the soil be staged on an impermeable surface. Can you comment on these concerns?

A10. His comments are correct, and procedures to ensure that all free liquids are removed and that soils be staged on the appropriate impermeable materials will be provided in the Operational Waste Management Plan and the SPCC Plan. He is correct that the design of the LTU was not sized for large spills. This design is based on the expected infrequent nature of those spills, but if they should occur, impacted soils would be removed and hauled directly to the appropriate TSDF as hazardous waste. It is my understanding from Mr. Duane McCloud that BSEP will be engineered from lessons learned at SEGS to further minimize large releases of HTF. Mr. McCloud's testimony addresses the lessons learned from operation of the SEGS facilities.

3. Groundwater monitoring of the land treatment unit and evaporation

Q11. Do you agree with Mr Hagemann's concerns about the monitoring network for the land treatment unit (LTU) and evaporation ponds?

A11. No

Q12. Why not?

A12. Mr. Hagemann applies standard compliance language without taking into account the Project's use of water from onsite wells, which induces a hydraulic condition not accounted for in most projects and in the regulation.

The Project will be pumping groundwater for potable, mirror washing, process and only as a backup cooling water supply. Because of this pumping groundwater flow will be radial to the pumping wells – in this case the primary wells No. 48 and 63. The pumping will create a cone of depression below the evaporation ponds and LTU, which was acknowledged in the WDR conditions. The use of groundwater through these pumping wells will ensure there will be no

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“hydraulically down gradient” wells under the definition provided by Mr. Hagemann. The Regional Water Quality Control Board noted this situation in the WDRs for the pond and LTU, and established a quarterly monitoring program to include the pumping wells and the proposed monitoring wells as compliance wells. Given the development of a cone of depression below the LTU, the proposed monitoring program is the only appropriate way to monitor changes in groundwater quality from a release.

I think what has been requested in the WDRs by the RWQCB is appropriate for compliance monitoring and all potential hydraulic conditions and water use scenarios for the Project.

Q13. Does your testimony represent your best professional judgment?

A13. Yes it does.

Q14. Is your testimony true and correct to the best of your knowledge?

A14. Yes it is.

Executed at Camarillo, California on March 5, 2010.



MICHAEL FLACK

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

In the Matter of:

Beacon Solar, LLC's)	
Application for Certification of the)	Docket No. 08-AFC-2
Beacon Solar Energy Project)	
_____)	

**BEACON SOLAR, LLC'S TRANSMISSION SYSTEM ENGINEERING REBUTTAL
TESTIMONY OF DUANE MCCLOUD**

March 9, 2010

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EXHIBIT 334

BEACON SOLAR ENERGY PROJECT

TRANSMISSION SYSTEM ENGINEERING REBUTTAL TESTIMONY

TRANSMISSION SYSTEM ENGINEERING REBUTTAL TESTIMONY OF DUANE MCCLOUD ON BEHALF OF BEACON SOLAR ENERGY, LLP IN RESPONSE TO TESTIMONY OF DAVID MARCUS ON BEHALF OF CALIFORNIA UNIONS FOR RELIABLE ENERGY

Q1. Please state your name and title for the record.

A1. My name is Duane McCloud, and I am the Engineering Manager for NextEra Energy Resources, LLC.

Q2. Is your resume attached to Exhibit 246, your declaration for your testimony in the area of Project Description previously filed in this proceeding?

A2. Yes, it is.

Q3. Please provide a summary of your qualifications highlighting those areas that apply to the testimony you provide below.

A3. I have worked in the power industry in design, operations and maintenance, due diligence and development since 1982 with increasing responsibility. My experience includes solar, geothermal, wind, and fossil fired power plants. I am the lead engineer for the due diligence and development of the Beacon Solar Energy Project ("Beacon"). In that role I am responsible for managing the initial design for Beacon.

Q4. Are you familiar with the Beacon Solar Project System Impact Study dated July 31, 2008 (SIS) prepared by the Los Angeles Department of Water and Power (LADWP) (Exhibit 76)?

A4. Yes.

Q5. Have you reviewed the testimony of David Marcus on Transmission Engineering filed in this proceeding?

A5. Yes. I have reviewed Mr. Marcus' testimony in Section II. Transmission Engineering.

Q6. Mr. Marcus claims the capacity of the Owens Gorge-Rinaldi line has a transfer capacity of 400 MW. Does the SIS contain a different number for the capacity of the Barren Ridge-Rinaldi line?

A6. Yes. LADWP rates their Barren Ridge-Rinaldi line at 571 MW. If you simply look at the value assigned the Barren Ridge-Rinaldi line by LADWP and the document referenced by Mr. Marcus for the rating of the Owens Gorge-Rinaldi line, there does appear to be a discrepancy. But, the Owens Gorge-Rinaldi line that Mr. Marcus states has a capacity of only 400 MW consists of multiple segments with a number of connections to other transmission lines. The multiple segments of the Owens Gorge-Rinaldi line are shown in Figure 2 of the SIS (Exhibit 76). Furthermore, Figure 2 also shows that there are a number of connections to other transmission lines along the Owens Gorge-Rinaldi line identified by Mr. Marcus. Each of these connections will affect the amount of power flowing in each segment of this longer transmission

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path. Any one of the segments of the longer transmission path identified by Mr. Marcus along the Owens Gorge-Rinaldi line could be the segment that limits the overall transmission capacity of the longer path to 400 MW. Just because the longer line may have a segment limiting its capacity to 400 MW does not mean the segment LADWP studied for the interconnection of Beacon has a capacity of 400 MW. The transmission system owner, LADWP, identified the capacity of the line segment Barren Ridge-Rinaldi as 571 MW.

Q7. Did LADWP use Western Electricity Coordinating Council (WECC) approved data in its SIS?

A7. Yes. LADWP used the latest approved information as provided in the Load Flow cases from the WECC website in the SIS.

Q8. What are LADWPs conclusions regarding interconnecting Beacon to their system?

A8. LADWP concludes on page 14 of the SIS, "No steady state violations and no thermal overloads were found for all the studied contingencies in all scenarios, . . .". And, on page 19 LADWP concludes,

Based on the provided BSP [Beacon Solar Project] models and with the assumption for maximum steady generation at BSP, no adverse system impacts were found with the BSP interconnection at Barren Ridge SS [substation] in terms of transient and post-transient stability for **primary POI** [point of interconnection]. System performance meets all the applicable NERC/WECC reliability standards under normal, (N-1) and (N-2) contingency conditions with the proposed SPS for **primary POI**.

Q9. Is Beacon connecting at the primary point of interconnection?

A9. Yes, it is.

Q10. Do you agree with Mr. Marcus' concerns about constraints to LADWP's operational flexibility?

A10. No. First, Mr. Marcus fails to recognize that even with 67.5 MW of curtailment of the hydroelectric generation or 65 MW of "curtailment" (depending on wind speed) of the wind generation, Beacon still represents a net 180 MW of additional renewable generation to meet LADWP's daily peak. (If the wind is not blowing or at a low speed there may be no curtailment of wind generation.) Second, Mr. Marcus fails to discuss the special protection systems (SPS) that are used in lieu of building new transmission lines. An SPS is an operating tool that is commonly used by transmission owners to provide operational flexibility. Thus, LADWP does not lose operational flexibility with the addition of Beacon.

Q11. Mr. McCloud, what is the purpose of the Large Generator Interconnection Agreement (LGIA)?

A11. The LGIA is an agreement negotiated and signed by the customer and the transmission

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TRANSMISSION SYSTEM ENGINEERING REBUTTAL TESTIMONY

owner with the sole purpose of agreeing to all the facilities that are required to interconnect Beacon to the transmission grid. The analysis contained in the SIS is performed to identify those facilities that are required to interconnect Beacon to the transmission grid.

Q12. Did LADWP performed the analysis contained in the SIS?

A12. Yes.

Q13. Do you think LADWP would agree to interconnect a project in such a way that it would harm their ability to operate their own power generation facilities or their transmission system?

A7. No, I do not.

Q7. Does this testimony represent your best professional judgment?

A7. Yes it does.

Q8. Is this testimony true and correct to the best of your knowledge?

A8. Yes it is.

Executed at Juno Beach, Florida on March 9, 2010.



Duane McCloud

BEACON SOLAR ENERGY PROJECT
WATER RESOURCES REBUTTAL TESTIMONY
STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

In the Matter of:

Beacon Solar, LLC's)	
Application for Certification of the)	Docket No. 08-AFC-2
Beacon Solar Energy Project)	
_____)	

**BEACON SOLAR, LLC'S WATER RESOURCES REBUTTAL TESTIMONY OF
MICHAEL FLACK**

March 9, 2010

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BEACON SOLAR ENERGY PROJECT

WATER RESOURCES REBUTTAL TESTIMONY

**WATER RESOURCES REBUTTAL TESTIMONY OF MICHAEL FLACK ON BEHALF
OF BEACON SOLAR, LLC IN RESPONSE TO CALIFORNIA ENERGY
COMMISSION STAFF CONDITION OF CERTIFICATION SOIL AND WATER-1's
GROUNDWATER MONITORING REQUIREMENTS**

Please state your name and title for the record.

My name is Michael Flack and I am a senior program manager at the AECOM Office in Camarillo, California.

Is your resume attached to your declaration marked as Exhibit 295 in this proceeding?

Yes it is.

Please provide a summary of your qualifications highlighting those areas that apply to the testimony you provide below.

I am a Professional Geologist and Certified Engineering Geologist in the State of California, with over 27 years of experience principally in the area of groundwater investigation and remediation. My experience largely lies in the area of water quality assessments, development and implementation of groundwater monitoring and remediation programs and the assessment of groundwater supply. In support of many of the investigations I have used numerical groundwater models for the purpose of contaminant fate and transport analysis, well-head protection, remedial design and in the analysis of basin-yield. I have worked throughout many of California's groundwater basins, particularly those in the Desert Southwest, Coastal and Central California.

Before providing your response to California Energy Commission Staff's ("Staff") testimony, please provide a summary of the average and maximum water use numbers Beacon has provided to Staff and Staff has incorporated into its analysis.

BEACON SOLAR ENERGY PROJECT

WATER RESOURCES REBUTTAL TESTIMONY

The following is a summary of Project water supply requirements as transmitted to Staff on January 15, 2010:

PROCESS	WATER REQUIREMENTS (acre-feet per year)
Cooling Tower Make-up	1,500
Balance of Plant (non-cooling water)	145
Potable	8
MAXIMUM PLANT WATER USE	1,683

The maximum water use does not include 47 acre-feet per year for an emergency supply that would be used to provide water for cooling tower make-up only should the recycled water supply be interrupted.

There is both water supply from site groundwater and recycled water supply from two potential sources that could be used for the Project. For construction supply the source is site groundwater to be supplied through water wells on the Project site to a maximum of 8,086 acre-feet. For operational supply the source will be both site groundwater and recycled water supplied from one of two options: either the Rosamond Community Services District or California City. Except for Project cooling requirements, all non-cooling water and a yearly emergency stipend for the Project will be supplied through site groundwater to a yearly maximum of 200 acre-feet. Project cooling water will be provided through either the Rosamond Community Services District, whereby the water would be available at the end of construction or California City, with the California City supply being phased in at the end of construction according to the following schedule:

California City Collection System Construction Year	Maximum Volume of Site Groundwater Extracted for BSEP Operation ^{1,2}
1 (end of month 12)	1,353AFY
2 (end of month 24)	1053 AFY
3 (end of month 36)	753 AFY
4 (end of month 48)	453 AFY
5 (end of collection system construction)	153 AFY

¹ Includes potable demand

² Excludes yearly emergency supply

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Have you reviewed the Final Staff Assessment (FSA) section addressing Beacon Solar Energy Project (“Project”) impacts to soil and water resources?

Yes. I have.

Q6. Have you reviewed the revised Conditions of Certification in Soil & Water circulated by California Energy Commission Staff on February 1, 2010.

A6. Yes. I have.

Q7. Mr. Flack, have you reviewed Staff’s proposed Condition of Certification Soil & Water 1?

A7. Yes. I have.

Q8. Do you agree with the requested monitoring program?

A8. There are several elements of the proposed monitoring program that I do not agree with.

Q9. Why not?

A9. The purpose of the monitoring program is to assess impacts from Project pumping and site groundwater use. The groundwater monitoring program was initially developed in consideration of Soil & Water-1 under the proposed site groundwater up to 1,600 acre-feet per year. The site groundwater use has been reduced dramatically to about 10% of the prior proposal. As such, it would seem reasonable that the monitoring program should be reflective of this change and scaled down commensurate with the revision in the proposed groundwater use.

Secondly, as part of the condition the numerical groundwater model developed for the Project will be used to establish the water supply wells that would be monitored during construction and operation. The condition however, requires an unrealistic condition of “zero-recharge” be used in the model to assess the extent of impacts from pumping. A condition of “zero-recharge” assumes that the groundwater basin would receive no water from infiltration either from direct precipitation or mountain front runoff from the surrounding watersheds for 30 years. This condition of no recharge for a period of 30 years is just not supported by the data. We have proposed to use the numerical groundwater model without deviation from the settings that were calibrated to historic and current water level data as the best means to establish the monitor well field. Figure R-1 shows the Project site and adjacent water supply wells identified from available public and private property owner data and a well canvas performed by AECOM and Staff. Figure R-2 shows the predictive simulation from the numerical model under the concept of “zero recharge” and the proposed reduction in groundwater volume to 153 afy at the end of 30 years. Essentially the change in water level as predicted by the model represents not the affect of Project pumping, but rather the absence of recharge over the term of 30 years. The areas of largest predicted drawdown are skewed to areas where there is the greatest mountain front recharge northwest of the site and east of Jawbone Canyon. The results show that using a

BEACON SOLAR ENERGY PROJECT

WATER RESOURCES REBUTTAL TESTIMONY

change of 5 feet many of the wells are well outside of what impacts would be anticipated from a pumping rate of 153 afy.

Lastly, Staff concluded in Soil and Water Condition C.7, that if the Rosamond option was to be implemented it is likely that the monitoring program could be terminated five years following the completion of project construction. No mention was made as regards the California City option. It would seem reasonable that consideration for termination should be given to both water supply options given the reduction of site groundwater supply to 153 acre-feet per year.

Q10. What would you recommend as a reasonable monitoring program?

A10. The potential for Project pumping impacts should be defined using the calibrated numerical groundwater model and a comparison between a “No Project” and Project pumping simulations. The difference in the predicted water levels between the two model runs provides the most appropriate measure of the potential for Project-induced pumping “impacts”, and should be the approach to definition of the monitoring well field. I believe that a difference of 5 feet should be the measure to define the monitoring well field. Given that compensation for increased pumping lift is predicated on a difference of 10 feet (Soil & Water-1.C.3.a), a value of 5 feet provides an adequate measure to account for model uncertainty and identify the appropriate wells to initially monitor in the vicinity of the Project. Additionally, as a second measure to account for predictive uncertainty in the model, additional wells outside the monitoring network could be added should the perimeter wells within the network show a statistically verifiable trend of 5 feet or more caused by Project pumping.

Figure R-3 is the output from the numerical groundwater model showing the potential impacts at the end of the construction period. It shows the difference between the “No Project” and Project pumping, and as such defines the area and wells that should be considered for monitoring during construction. As shown those wells that are only immediately adjacent to the site should be considered. As discussed in Soil and Water Condition-1, a well canvas would be conducted to identify all wells within this area and their status as operational or abandoned or destroyed, and the operational wells in this area would be included in the monitoring program.

Figure R-4 is the output from the numerical groundwater model at the end of the first 5 years of pumping following construction under the California City option, whereby groundwater pumping would systematically be reduced to 153 acre-feet per year at the end of 5 years. Figure R-5 is the output from the numerical groundwater model at the end of 30 years of operation. A comparison shows a significant reduction in the number of wells that should be in the monitoring network. In fact, no offsite wells should be monitored at 30 years. And potentially no offsite wells could be affected by a difference of 10 feet or more 5 years after construction. These data would suggest that similar to the review of the monitoring program under the Rosamond option, the California City option should receive a serious review for need to continue beyond 5 years.

Lastly, it is important to note, that the groundwater levels in the basin in general and more specifically in the vicinity of the project site are increasing and will continue to increase even with the onset of proposed Project pumping, especially since the amount of groundwater withdrawal has been significantly reduced. Though we are tracking how the project pumping

BEACON SOLAR ENERGY PROJECT

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might change water levels, those water levels will continue to increase. It is my opinion that for this additional reason that the monitoring program should be considered for termination 5 years after construction.

Q11. Staff has proposed monitoring in the California City area for both project pumping impacts and if the California City option is selected converting homes and businesses to sewer. Do you believe it is necessary to monitor in the California City Area?

A11. No.

First of all the City has a groundwater monitoring program in place now that would more than suffice to monitor changes to the change from septic to sewer. Thomas Stetson and Associates (April 2009) in their evaluation of water supply for California City, did not include leach field return in their water balance for the Fremont Valley. This would suggest that in their assessment this was not a significant source of recharge to the groundwater below California City.

If there is concern over the influence from the Project, it is not warranted given the revised operational volume of 153 acre-feet per year. The base condition evaluated in the AFC using the calibrated numerical groundwater model running at the full operational pumping rate of 1,600 acre-feet per year for 30 years did not show impacts in the California City area. The Project operational supply has been reduced to about 10% of the AFC volume. Figure R-4 shows the extent of potential project impacts five years following construction of the Project. The model prediction shows that there would be no expectation of impact by the Project pumping in the area of California City.

Q12. Have you created a revised Condition of Certification Soil and Water 1 and the related Appendix I that includes your proposed well monitoring program?

A12. Yes I have. It is included as Attachments 1 and 2 to this testimony.

REBUTTAL TO TESTIMONY OF DAVID MARCUS – PART III. WATER USE (B) MITIGATION FOR WATER USE DURING CONSTRUCTION

Q.M1 Have you reviewed the testimony of David Marcus in the area of water use filed in this proceeding by the California Unions for Reliable Energy?

A.M1 Yes. I have.

Q.M2 Does Mr. Marcus in his testimony discuss the source of water for construction?

A.M2 Yes, Mr. Marcus argues a non-freshwater source of water should be used for construction. (November 12, 2009, Testimony of David Marcus at 4).

Q.M3 Can you describe the results of your analysis of construction water impacts?

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A.M3 The groundwater model was used under my supervision to evaluate the proposed AFC volume (i.e., ~3,400 acre-feet) and more recently the FSA volume of 8,086 acre-feet. For the recent simulation the model applied the 8,068 acre-feet over a 5 month period under both the “base” and “No Cantil Fault” scenarios. The “base” condition is the calibrated model, and the “No Cantil Fault” simulation, assumes there is no hydraulic barrier caused by the fault. Both simulations provide the widest area of potential influence in terms of drawdown in the neighboring wells. It is important to note that the model applied the entire water volume over a 5 month period, which represents a conservative or worst-case condition. The actual construction period is projected to be 25 months, though most of the supply will be used during the 5-month grading period.

Figure R-3 shows the expected drawdown at the end of the construction period with well pumping to produce the volume estimated in the FSA at 8,086 acre-feet. Under either scenario, the model results show that the possibility of significant impact to surrounding wells is minimal. The conditions provided in Soil and Water-1 stipulates the protocols for the evaluation and mitigation of impacts during construction pumping. These protocols ensure that there will be no significant impacts during proposed construction pumping, even if the pumping level assumed in the FSA were to occur.

Q.M4 Mr. Flack would the use of reclaimed water for construction filing a Report of Waste Discharge and obtaining Waste Discharge Requirements (WDRs) from Lahontan?

A.M4 Yes it would. The Project could not use recycled water for construction without obtaining approved WDRs from Lahontan.

GENERAL QUESTIONS

Q.M5 Does your testimony in response to California Energy Commission Staff’s Condition of Certification SOIL & WATER 1 and water testimony of David Marcus represent your best professional judgment?

A.M5 Yes it does.

Q.M6 Is your testimony in response to California Energy Commission Staff’s Condition of Certification SOIL & WATER 1 and water testimony of David Marcus true and correct?

Q.M6 Yes it is.

Executed at Camarillo, California on March 9, 2010.



MICHAEL FLACK

ATTACHMENT 1

PROPOSED CONDITIONS OF CERTIFICATION

SOIL&WATER-1: Groundwater Water Use For Project Construction: The project owner may use up to 8,086 acre feet of onsite groundwater for project construction. Groundwater use and potential impacts will be monitored and mitigated as outlined in items A. ~~and B.~~ and C. below.

Groundwater Use For Project Operation: The project owner may use up to 153 acre feet per year (AFY) of onsite groundwater to meet non-cooling operational needs. The project owner may also use 47 AFY of groundwater for emergency purposes. For the purpose of this condition, the term “emergency” shall mean the inability for BSEP to receive, or for the recycled water supplier to deliver, recycled water to BSEP due to Acts of God, natural disaster or other circumstances beyond the control of the project owner in a quantity sufficient for BSEP to operate at its normal operational level ~~for the season in which the emergency occurred.~~

The project owner shall use recycled water for ~~all~~ power plant cooling needs. On a temporary basis, groundwater may ~~only~~ be used for cooling purposes while the California City recycled water option, discussed below, is being developed and until it becomes fully implemented. Groundwater use and potential impacts during operation will be monitored and mitigated as outlined in items A. and C. below.

California City Recycled Water Supply – If the California City Recycled Water supply is developed for project operation, then groundwater may be used in accordance with the table presented below:

Operations Water Use – California City Alternative

California City Collection System Construction Year	Maximum Volume of Site Groundwater Extracted for BSEP Operation ^{1,2}
1 (end of month 12)	1,353AFY
2 (end of month 24)	1053 AFY
3 (end of month 36)	753 AFY
4 (end of month 48)	453 AFY
5 (end of collection system construction)	153 AFY

¹Includes potable demand

²Excludes yearly emergency supply

Rosamond Community Services District Recycled Water Supply – If the Rosamond Community Services District Recycled Water Supply is developed for project use groundwater shall be limited to ~~a volume of no more than~~ up to 153 AFY.

Monitoring and Mitigation for Groundwater Use

The project owner shall also develop and implement a groundwater ~~impact~~ monitoring and mitigation program. The monitoring and mitigation program shall be consistent with the intent of **Soil ~~and~~ & Water APPENDIX I**, attached to this FSA. The primary objective for the monitoring is to

establish pre-construction and project related water level trends that can be quantitatively compared against observed and simulated trends near the project pumping wells, at the property boundary, and near potentially impacted existing wells. Specifically, the project owner shall do all of the following:

A. Prior to construction:

- 1 In accordance with the provisions set forth in **Soil and Water Appendix I**, create the Fremont Valley Groundwater Monitoring Committee to monitor project pumping impacts during construction and (if recycled water is incrementally delivered to the site) the “phase-in” period during initial project operation. The purpose of the Fremont Valley Groundwater Monitoring Committee is to provide for land owner protection and include stakeholder participation in evaluation of project impacts. The monitoring committee’s function will be to implement and oversee the project owner’s groundwater monitoring program and to confer with the CPM to verify that there are no unacceptable impacts to groundwater levels, water quality or well performance in water supply wells affected by the proposed pumping during construction of the BSEP and during project operation. The committee will review the applicability of the groundwater monitoring and mitigation program on a recurring 5 year basis following project construction. During their review of the monitoring data, the committee will recommend to the CPM whether the program should be expanded or if some or all of the monitoring should be terminated. In the event that a committee cannot be formed or maintained the CPM will continue to implement and oversee the groundwater monitoring program.
- 2 Initially identify and secure access to representative water supply wells predicted by the groundwater model “Zero Recharge” simulation run (see Groundwater Impacts section of this FSA), to allow monitoring of groundwater levels and water quality of those wells. Wells shall be identified by comparison to the “No” Project and Project pumping simulation. Wells that show a water level change of 5 feet or more at the end of construction and after the first five years of operation will be included in the monitoring program. Any new wells within the potentially impacted area not previously identified shall also be included in the monitoring network. Abandoned wells, or wells no longer in use, that are accessible and provide reliable water level data within the monitoring area may also be included as part of the monitoring network. Based on the annual monitoring data, additional wells outside the monitoring network developed from the groundwater model may be added should the perimeter wells within the network show a statistically verifiable trend of 5 feet or more caused by Project pumping.

Rationale

Regardless of what scenario modeled (i.e., base condition, zero recharge or no Cantil Fault), Project impacts should be defined by a comparison between a “No” Project and Project pumping simulations. The difference in the predicted water levels between the two model runs provides the most appropriate measure of Project-induced pumping “impacts”. The potential for impacts within the identified monitoring network should be established on a criterion of a difference of 5 feet or more at the end of construction and at the end of the first five years of operation. Given that compensation for increased pumping lift is predicated on a difference of 10 feet (Soil & Water - 1.C.3.a), a value of 5 feet provides an adequate buffer of additional area to account for uncertainty in the model prediction. Additional text has been added to provide a contingency to add additional wells beyond the model-predicted network should perimeter monitoring wells predicted by the model

show a change of 5 feet or more. The last sentence has been added to provide flexibility and introducing a further mechanism to account for uncertainty in the pumping response.

~~3—In addition to the Zero Recharge wells discussed above, identify all available wells between the BSEP site and California City, in both the Koehn and California City sub-basins, and include representative wells into the monitoring network. Inclusion of these well into the monitoring network is necessary to assess the potential changes in hydraulic gradients and subsurface flow between sub-basins.~~

Rationale

The proposal to monitor all available wells between and in the California City sub-basin is not warranted under the revised operational volume of 153 AFY (~95 gpm). The base condition evaluated in the AFC using the calibrated numerical groundwater model running at the full operational pumping rate of 1,600 AFY for 30 years did not predict impacts in the California City area. The Project operational supply has been reduced to about 10% of the AFC volume. Given this significant reduction of groundwater supply, including this specific condition in addition to what is required under Condition Soil & Water-1.A.2 this request is not warranted and excessive. Soil & Water-1.Condition A.2 should be sufficient to establish the monitoring well program to assess project pumping impacts. Lastly, if the intent is to monitor changes in recharge from the removal of residential septic and leach fields in California City, the City currently has an ongoing monitoring program that would be sufficient to assess this change, and are available to the public.

- 4 At least 30-days prior to project construction, accessible abandoned or unused wells within the monitoring network shall be instrumented with recorders to track groundwater levels during project construction. The water level recorders shall continuously collect and store the data every four hours and shall be serviced at least quarterly.
- 5 Obtain all historic water level and water quality data for each water supply well within the monitoring network as defined by the groundwater model where access to monitor groundwater conditions can be obtained. Additionally, conduct a well reconnaissance and identify all wells within the monitoring area as defined by the groundwater model. Obtain well construction information (completion depth, well screen depth interval, and pump intake depth), historic well performance data, including pumping and non-pumping water levels, and pump specifications for each of those wells.
- 6 Update the groundwater database presented in the AFC, and updated in January 2009, with all new information obtained from the wells where access to monitor groundwater conditions has been obtained.
- 7 Prepare time series graphs for water level and total dissolved solids (TDS) concentrations data for each well within the monitoring network where information is available.
- 8 Perform statistical trend analysis using Mann-Kendall Trend Test and Sen's Slope Estimator for water levels and the TDS data to statistically analyze the data. Determine the significance of an apparent trend and estimate the magnitude of that trend.
- 9 At least once prior to construction, collect groundwater levels from the off-site and on-site monitoring network wells and collect and analyze groundwater samples for TDS

concentrations to provide baseline groundwater levels and TDS concentrations for both on-site and off-site monitoring network wells. Groundwater samples shall be analyzed for TDS by a California Certified Analytical Laboratory in accordance with Standard Methods 2540C.

- 10 Map TDS data and groundwater levels within the Koehn and California City Sub-basins from the groundwater data collected prior to construction. Update trend plots and statistical analyses, as data is available.

B. During Construction:

- 1 Collect static water levels and TDS data from the monitoring network wells on a quarterly basis throughout the construction period, and at the end of the construction period. The continuous monitoring discussed in Condition Soil & Water-1.item A.4, above shall continue a minimum of 30-days after completion of project construction. Perform statistical trend analysis using Mann-Kendall Trend Test and Sen's Slope Estimator for water levels and the TDS data to statistically analyze the data. Determine the significance of an apparent trend and estimate the magnitude of that trend.

C. During Operation:

- 1 On a quarterly basis, collect static water level measurements and TDS data from the wells in the groundwater monitoring network to evaluate operational influence from the project. Quarterly operational parameters (i.e., pumping rate) of the water supply wells shall be monitored. Additionally, quarterly groundwater-use in the Koehn sub-basin shall be estimated and the values submitted to the Fremont Valley Basin Groundwater Monitoring Committee for evaluation and consultation with the CPM.
- 2 On an annual basis, perform statistical trend analyses using Mann-Kendall Trend Test and Sen's Slope Estimator for water levels and the TDS data to statistically analyze the data. The significance of an apparent trend shall be determined and the magnitude of that trend estimated. Based on the results of the statistical trend analyses, the project owner shall determine if the project pumping has induced a drawdown (i.e. reduction in the static water level) in the water supply at a level of ten feet or more below the baseline trend.
- 3 If water levels have been lowered below pre-site operational trends, and monitoring data provided by the project owner show the water level changes are different from background trends and are solely caused by project pumping, then the project owner shall provide mitigation to the well owner(s) consistent with the following Soil & Water-1.C.3.a through C.3.i. Mitigation shall be provided if the CPM's inspection of the well monitoring data confirms changes to water levels and water level trends relative to measured pre-project water levels, and the well yield has been lowered by project pumping. The type and extent of mitigation shall be determined by the amount of water level decline and site specific well construction and water use characteristics. The mitigation of impacts will be determined as follows:
 - a. If project pumping has lowered water levels and increased pumping lifts by 10 feet or more, increased energy costs shall be calculated in accordance with item **SOIL & WATER-1.C.3.e** below. The compensation and payment schedule for the increased costs shall be provided at the option of the affected well owner as provided in **SOIL & WATER-1.C.3.g**.

- b. If groundwater monitoring data indicate project pumping has lowered water levels below the top of the well screen, and the well yield is shown to have decreased by 10-percent or more of the average seasonal yield, compensation shall be provided for the diagnosis and maintenance to treat and remove encrustation from the well screen. Reimbursement shall be provided at an amount equal to the customary local cost of performing the necessary diagnosis and maintenance for well screen encrustation. ~~Should well yield reductions be occurring, the project owner shall provide periodic diagnosis of the well screen to assess the rate of encrustation caused by project pumping and the frequency of required maintenance to maintain well yield to levels above the significance criteria is discussed in SOIL & WATER-1.C.3c. The project owner shall use these findings to provide reimbursement equal to the customary local cost of performing the necessary maintenance at the determined frequency for the life of the project or replace the well.~~ Should the well yield reductions be reoccurring, the project owner shall provide payment or reimbursement for periodic maintenance throughout the life of the Pproject. If with treatment the well yield is incapable of meeting 110% of the well owner's maximum daily demand, dry season demand, or annual demand the well owner should be compensated by reimbursement or well replacement as described under Ccondition Soil & Water-1.C.3.c.

Rationale

The condition contains redundant text from a prior version. It appears that this text was not removed and entirely replaced with the suggested text that was provided on January 15, 2010, which has been inserted as the last two sentences of the condition. It is suggested that this text be removed as it is redundant with the last two sentences. The suggested text in the last two sentences provides the same level of accountability for diagnosis and maintenance of the well and ties the replacement of the well to the specific conditions of Soil & Water-1.C.3. This text is preferred over that which is stricken as the conditions for well replacement are not explicitly stated.

- c. If project pumping has lowered water levels to significantly impact well yield below property water supply requirements or cause casing collapse, payment or reimbursement of an amount equal to the cost of deepening or replacing the well shall be provided to accommodate these effects. Compensation shall be at an amount equal to the customary local cost of deepening the existing well or constructing a new well. The demand for water, which determines the required well yield, shall be determined on a per well basis using historic seasonal yield data, well owner interviews and field verification of property conditions and historical seasonal water requirements compiled as part of the pre-project well reconnaissance. Well yield shall be considered significantly impacted if it is incapable of meeting 110-percent of the well owner's maximum daily demand, dry-season demand, or annual demand – assuming the pre-project well yield documented by the well reconnaissance met or exceeded these yield levels.
- d. Electrical cost reimbursement – Through a statistical analysis of the water level data, if the pumping water level falls below a depth of 10 feet from the baseline trend, and is shown to be caused by project pumping, the well owner shall be compensated by the project owner for the additional electrical costs commensurate with the additional lift required to pump. The water level in the well will be assessed relative to the pumping rate established during the pre-site development period.

- e. Where it is determined by the CPM that the project owner shall reimburse a private well owner for increased energy costs, the project owner shall calculate the compensation owed to the owner of any impacted well as described below.

$$\frac{\text{Increased cost for energy}}{\text{costs/unit of energy}} = \text{change in lift/total system head} \times \text{total energy consumption}$$

Where:

change in lift (ft) = calculated change in water level in the well resulting from project pumping

total system head (ft) = elevation head + discharge pressure head

elevation head (ft) = difference in elevation between wellhead discharge pressure gauge and water level in well during pumping.

discharge pressure head (ft) = pressure at wellhead discharge gauge (psi) X 2.31

- f. The project owner shall notify all owners of the impacted wells within one month of CPM approval of the compensation analysis for increased energy costs.
- g. Compensation shall be provided on an annual basis, as described below:

Annual Compensation- Compensation provided on an annual basis shall be calculated prospectively for each year by estimating energy costs that will be incurred to provide the additional lift required as a result of the project. With the permission of the impacted well owner, the project owner shall provide energy meters for each well or well field affected by the project, as described under 3e above. The impacted well owner to receive compensation must provide documentation of energy consumption in the form of meter readings or other verification of fuel consumption. For each year after the first year of operation, the project owner shall include an adjustment for any deviations between projected and actual energy costs for the previous calendar year.

- h. Pump lowering – If pumps are exposed but well screens remain submerged, the pumps shall be lowered to maintain production in the well. All costs associated with lowering pumps shall be borne by the project owner. Reimbursement shall be provided at an amount equal to the customary local cost of performing the lowering of the pump.
- i. Deepening of wells – If the groundwater is lowered enough that the well screen is exposed, and lowering of the pump cannot be done to maintain well yield above a level of significance described in **Soil & Water OIL & WATER-1.C.3c**, the well shall be deepened or a new well constructed. The well shall be completed in a manner that provides water to the property in consideration of historic seasonal use requirements. All costs associated with deepening existing wells or constructing new wells shall be borne by the project owner. Reimbursement shall be provided at an amount equal to the customary local cost of installing a new well.

- 4 During or after the first five-year operational and monitoring period, the CPM, after consultation with the Fremont Valley Basin Groundwater Monitoring Committee, shall evaluate the data and determine if the monitoring program water level measurements and

TDS sampling frequencies should be revised or eliminated. Revision or elimination of any monitoring program elements shall be based on the consistency of the data collected. The determination of whether the monitoring program should be revised or eliminated shall be made by the CPM after consultation with the Fremont Valley Basin Groundwater Monitoring Committee.

- 5 At the end of each subsequent five-year monitoring period, the collected data shall be evaluated by the CPM after consultation with the Fremont Valley Basin Groundwater Monitoring Committee and the CPM shall determine if the sampling frequency and TDS sampling should be revised or eliminated.
- 6 If the applicant Project elects to utilize the California City option, ~~monitoring of groundwater in the California City area shall be required due to the anticipated reduction in groundwater recharge resulting from collection and elimination of return flows from leachfields. The~~ Project owner shall also implement the compensate California City for implementation of a Tamarisk Removal Program identified as described in Appendix I.

Rationale

The condition for monitoring California City wells was addressed under Soil & Water-1.A.3 above, and is not warranted given there is already a groundwater monitoring program for California City that is available to the public. Further, concerns over pumping influence from the Project in the area of California City are not warranted, as the prior modeling for the AFC using site groundwater for the entirety of the Project demand did not show a significant impact in the area of California City. Subsequently, there could be no concern over Project pumping influence, given that the groundwater volume has been reduced to 10% of the AFC volume. The wording has also been revised to match Appendix I revisions.

- 7 If the Rosamond option is implemented, all off site groundwater monitoring will likely be eliminated within the five year post construction period. Consideration of the need to continue the groundwater monitoring program will be given, in accordance with ~~item~~ Condition Soil & Water - 1.C.4 above.
- 8 If the California City option is implemented, all off site groundwater monitoring may be eliminated within the five year post construction period. Consideration of the need to continue the groundwater monitoring program will be given in accordance with Condition Soil & Water-1.C.4 above.

Rationale

The condition for termination should be tied to the 5-year reoccurrence interval equally between recycled water options.

- 9 Comply with Condition of Certification **SOIL & WATER -19**, which requires metering of water used for power plant construction and operation.

Verification: The project owner shall do all of the following:

- 1 At least 60 days prior to start of construction, the project owner shall submit to the CPM a list identifying the members of the Fremont Valley Basin Groundwater Monitoring Committee and each member's written agreement to participate in accordance with the Committee's stated purpose and function and assist the project owner in implementing the groundwater monitoring program.
- 2 At least 30 days prior to project construction, the project owner shall submit to the CPM, a comprehensive report presenting all the data and information required in items **SOIL & WATER -1.A.2** through **-1.A.910**.

The project owner shall submit to the CPM all calculations and assumptions made in development of the report data and interpretations, along with comments to the draft report made by Committee members or well owners within the monitoring network on the data, calculations and assumptions used in development of the report. The project owner shall also provide documentation of communications and negotiation for securing access and inclusion of a well in the monitoring program. Further, documentation shall be provided that shows adequate inquiry of each well owner in the monitoring network, and any subsequent refusal by the well owner to be included in the monitoring network.

- 3 During project construction, the project owner shall submit to the CPM quarterly reports presenting all the data and information required in items **SOIL & WATER -1.B.1** through **1.B.2**.

The project owner shall submit to the CPM all calculations and assumptions made in development of the report data and interpretations, along with comments to the draft report made by Committee members or local well owners within the monitoring network on the data, calculations, and assumptions used in development of the report.

- 4 No later than March 31 of each year of construction and 60 days following completion of construction, the project owner shall provide to the CPM for review and approval, documentation showing that any mitigation to private well owners during project construction was satisfied, based on the requirements of the property owner as determined by the CPM.
- 5 During project operation, the project owner shall submit to the CPM, applicable quarterly and annual reports presenting all the data and information required in items **SOIL & WATER - 1.C.1** through **-1.C.78**.

The project owner shall submit to the CPM all calculations and assumptions made in development of report data and interpretations, along with any agreement or dissenting opinions voiced by Committee members or local well owners on the data, calculations, and assumptions used in development of any reports.

- 6 After the first five year operational and monitoring period, the project owner shall submit a 5 year monitoring report to the Fremont Valley Basin Groundwater Monitoring Committee and to the CPM that submits all monitoring data collected and provides a summary of the findings. After consultation with the Fremont Valley Basin Groundwater Monitoring Committee, the CPM will determine if the water level measurements and TDS sampling frequencies should be revised or eliminated.
- 7 The project owner shall provide mitigation as described in **SOIL & WATER-1.C.43**, if the

CPM's inspection of the monitoring information confirms changes to water levels and water level trends relative to measured pre-project water levels, and well yield has been lowered by project pumping. The type and extent of mitigation shall be determined by the amount of water level decline and site specific well construction and water use characteristics. The mitigation of impacts will be determined as set forth in **SOIL & WATER-1.C.3**.

- 8 Eliminated, redundant with #4
- 9 During the life of the project, the project owner shall provide to the CPM and Fremont Valley Basin Groundwater Monitoring Committee, all monitoring reports, complaints, studies and other relevant data within 30 days of being received by the project owner.

ATTACHMENT 2

SOIL AND WATER - APPENDIX I

GROUNDWATER MITIGATION PLAN

Groundwater Monitoring

This groundwater monitoring program was provided in Attachment 5 of the Project Design Refinements (DB2009r) submitted to the CEC by the applicant in June 2009. As proposed by the applicant, the following describes the groundwater mitigation plan to be incorporated if the use of site groundwater is approved by CEC for power plant operation.

Proposed Groundwater Monitoring Program

To provide for land owner protection and participation in evaluation of project impacts, a Fremont Valley Groundwater Monitoring Committee will be formed. The committee will include a representative from the following:

- California City
- Community of Cantil
- Rancho Seco
- Honda
- Beacon Solar LLC

The monitoring committee's function will be to implement and oversee the groundwater monitoring program and to verify that there are no unacceptable impacts to groundwater levels or quality in water supply wells adjacent to the BSEP.

Gather Historic Water Level and Water Quality Data

- Secure access, if authorized by the land owner, for the purpose of monitoring of water levels and water quality for those water supply wells predicted by the numerical groundwater model to experience a change of ~~5~~ 10 feet or more in its water level by comparison to the ~~"Non-~~Project" condition at the end of construction and at the end of 5 years of operation over the term of the project (30 years).
- Through the access agreement, obtain all historic water level and water quality data for each water supply well identified by the model. Additionally, obtain well completion information, historic well performance data, including pumping and non-pumping water levels and pump specifications for each well to be monitored.
- Update the application for certification (AFC) water level and geochemical and water level database with all new information.
- Prepare time series graphs (i.e., trend plots) for water level and total dissolved solids (TDS) data, as information is available for each well.
- Perform statistical trend analysis using Mann-Kendall Trend Test and Sen's Slope Estimator for

water levels and the TDS data. The Mann-Kendall Trend Test and the Sen's Slope Estimator are proposed to statistically analyze the data because they are the accepted non-parametric trend analysis methods for data that are not normally distributed. Use trend analysis to determine the significance of an apparent trend and to estimate the magnitude of that trend. Further, use adjacent well data to evaluate local effects from pumping in water level trends.

Establish Pre-Project Baseline Water Quality and Water Level Database

- To the extent possible, prior to project construction collect groundwater levels from the off-site and on-site wells to evaluate groundwater levels in the area of wells that could be impacted by project pumping as indicated by the model. Additionally, collect groundwater samples to provide baseline TDS data for both on-site and off-site wells. Analyze TDS samples using Standard Methods 2540C by a California Certified Analytical Laboratory.
- Map TDS data and groundwater levels within the Koehn Sub-basin from the groundwater data collected prior to construction. Update trend plots and statistical analyses, as data is available.

Groundwater Monitoring During Construction

- During construction, collect water levels on a quarterly basis for a period of one year or on a quarterly basis through the construction period, and collect TDS data at the end of the construction period and prior to site operations.

Groundwater Monitoring During Operation

- On a quarterly basis for the first five years, collect water level measurements from the wells and collect TDS data to evaluate operational influence from the project. Additionally, monitor quarterly operational parameters (i.e., pumping rate) of the water supply wells.
- After a period of five years, on a well-by-well basis, evaluate the data and determine if the sampling frequency and TDS sampling should be revised or eliminated.
- Subsequently, evaluate the data set every five years and determine if the sampling frequency and TDS sampling should be revised or eliminated.

Proposed Mitigation Options

Water Level Offset Mitigation Options

Based on the results of the statistical trend analyses, determine if the project pumping has induced a drawdown in the water supply at a level of ten feet or more below the baseline trend. If water levels have been lowered below pre-site operational trends, then implement any of the following options, as appropriate and considering the cost effectiveness of each option.

- Electrical cost reimbursement – If the pumping water level falls below a depth of 5 feet from an average of the baseline measurements, the well owner will be compensated for the additional electrical costs commensurate with the additional lift required to pump. The water level in the well will be assessed relative to the pumping rate during pre-site operational period.
- Pump lowering – In the event that groundwater is lowered and existing pumps are day lighted,

pumps can be lowered to maintain production in the well.

- Deepening of wells – If the groundwater is lowered enough that there is insufficient water in the well and pump lowering is not an option, then wells can be deepened.

Groundwater Storage Mitigation Options

Maximum expected groundwater usage during BSEP operation is estimated to be no more than 153 acre feet per year (AFY) (excluding annual emergency allotment of 47 acre-feet). Initially, the applicant proposed to use 1388 AFY of groundwater for power plant operation and provided options to offset that water consumption which included implementation of a partial ZLD and tamarisk removal program, which are described in the Project Design Refinements (DB 2009r).

If the California City option is selected, the project owners shall provide funding to California City for the implementation of a tamarisk removal program to address infestation within the City in the initial amount of \$100,000 at the start of construction and \$10,000 on the commercial operation date (COD) and for a period of 4 years thereafter on the anniversary of the COD.

~~The project owners shall develop in coordination with Bureau of Land Management and other stakeholders, a voluntary tamarisk removal program designed to offset the collection of return flows from conversion of individual septic disposal systems in California City for the project recycled water supply. This program will initially identify areas of tamarisk infestation, provide annual funding for tamarisk eradication and will be implemented in the Fremont Valley Groundwater Basin.~~

ATTACHMENT 3

FIGURE R-1



WATER SUPPLY WELLS IN THE KOEHN SUBBASIN

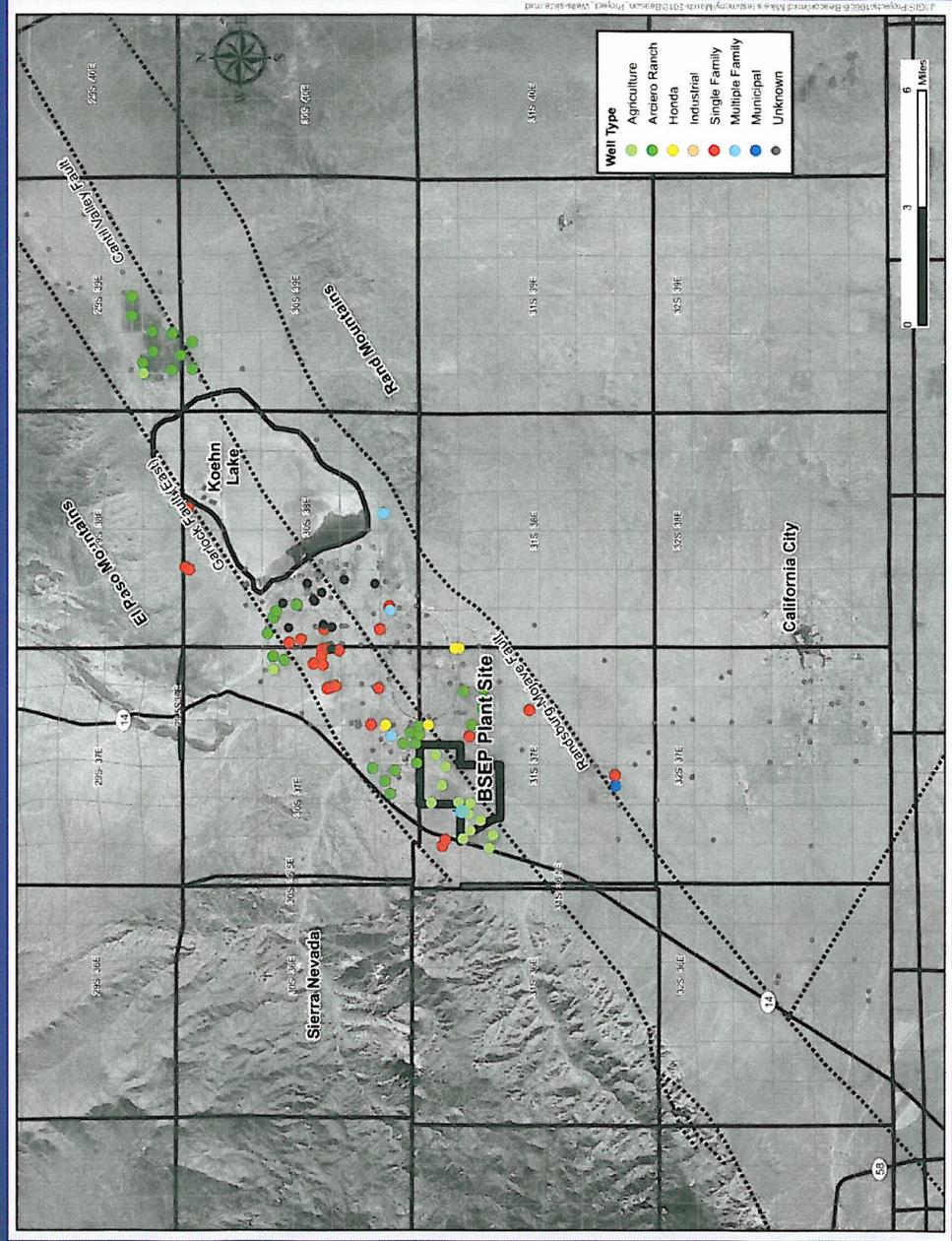


Figure R1

FIGURE R-2



ZERO RECHARGE SIMULATION

Numerical Simulation of Project Pumping Influence – End of 30 years

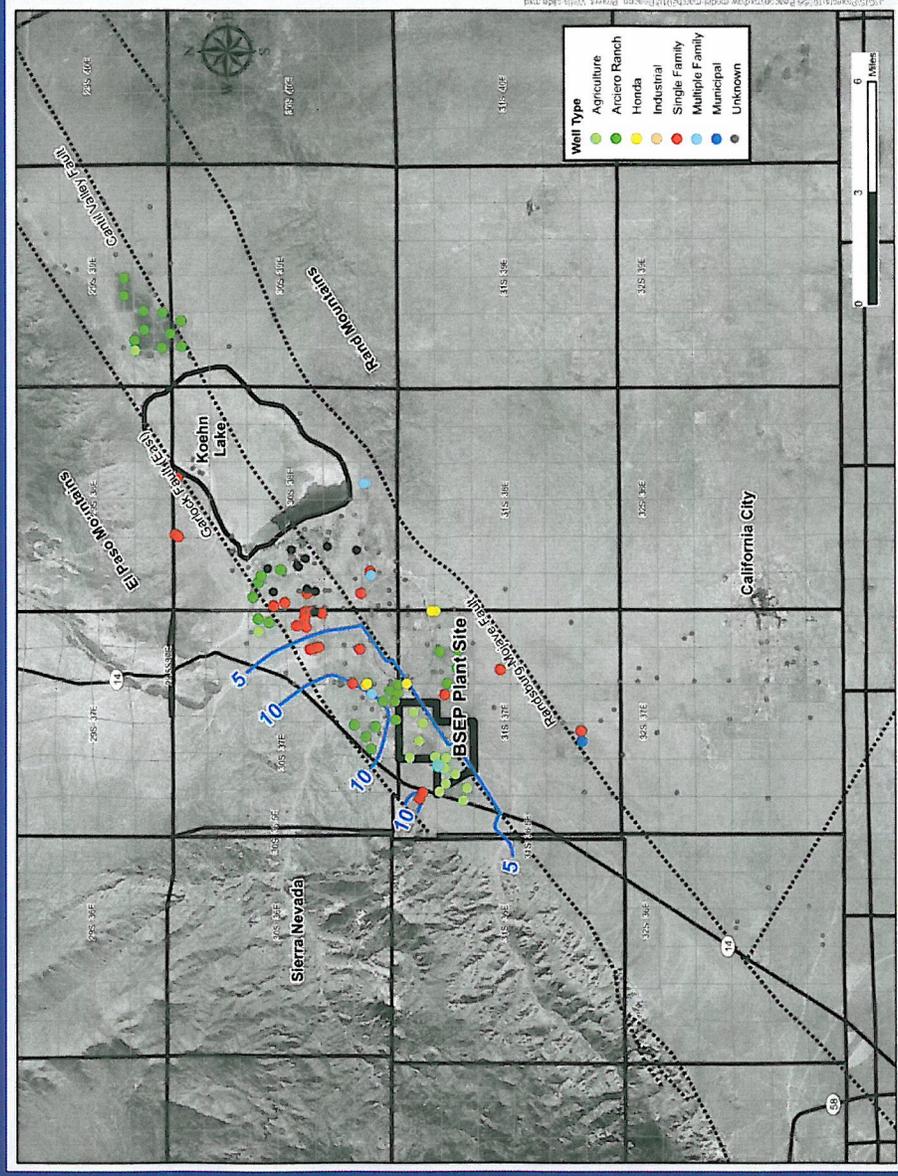


FIGURE R2

FIGURE R-3



CONSTRUCTION WATER SUPPLY

Numerical Simulation of Project Pumping Influence –
Construction Water Supply (8,086 AF – 5 Months)

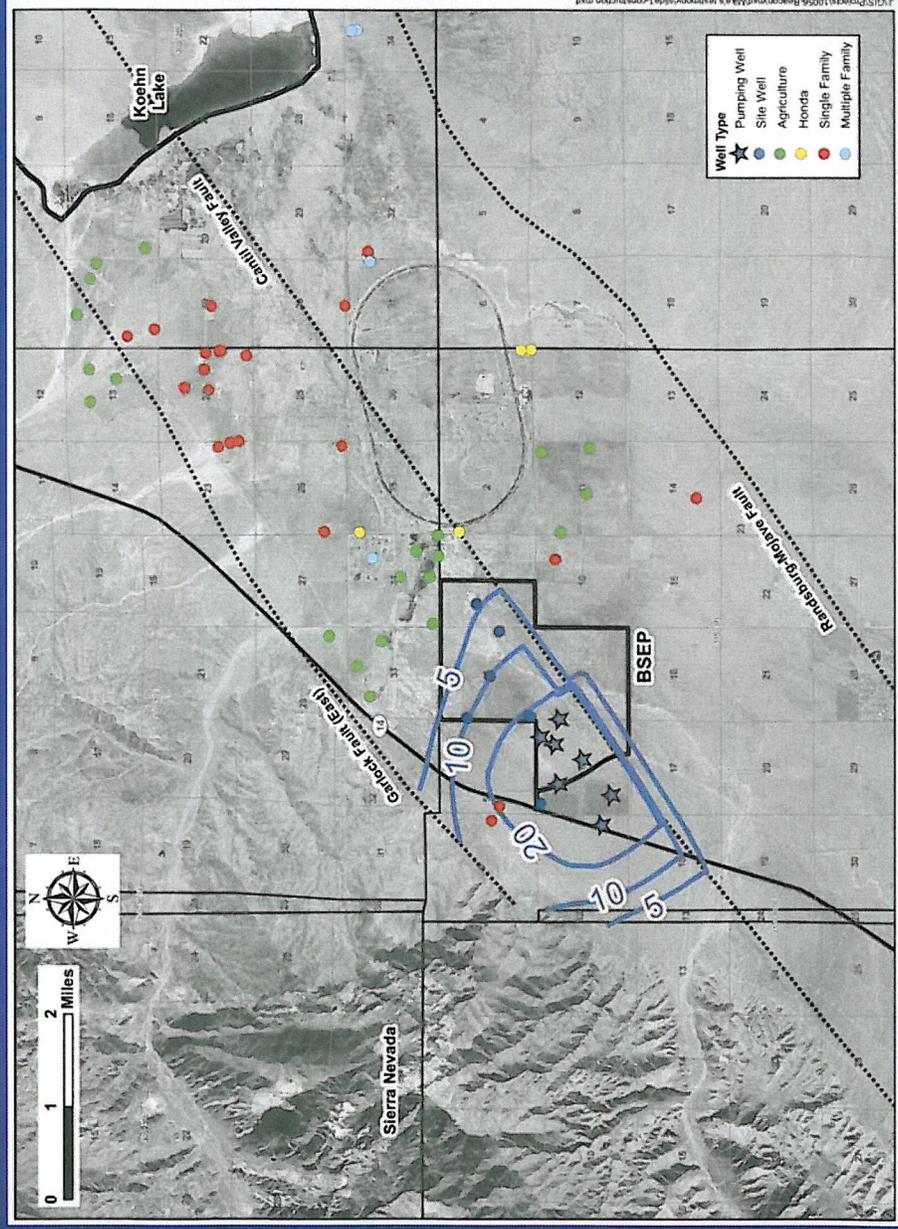


FIGURE R3

FIGURE R-4



CALIFORNIA CITY OPTION

Numerical Simulation of Project Pumping Influence –
End of 5 year Phase in Period

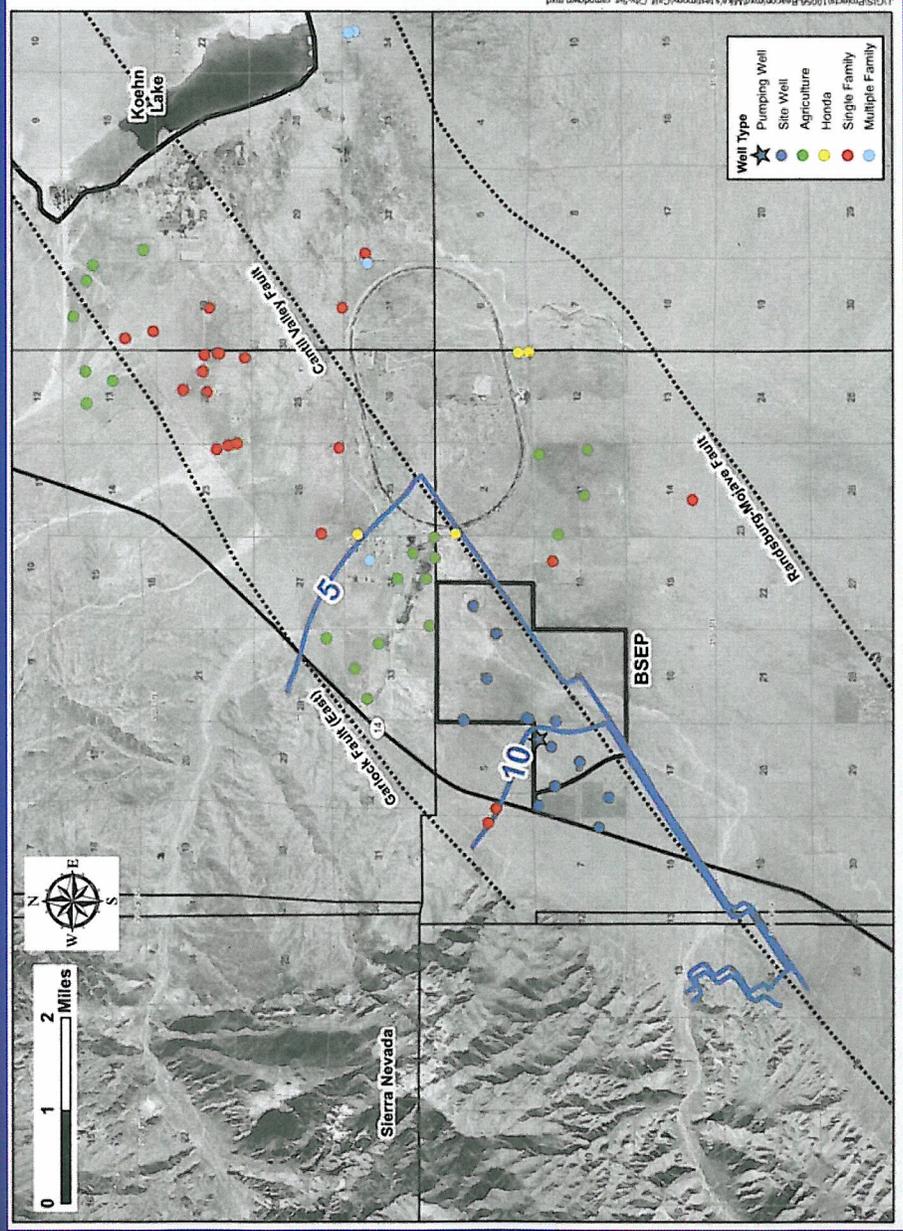


FIGURE R4

FIGURE R-5



CALIFORNIA CITY

Numerical Simulation of Project Pumping Influence – End of 30 years

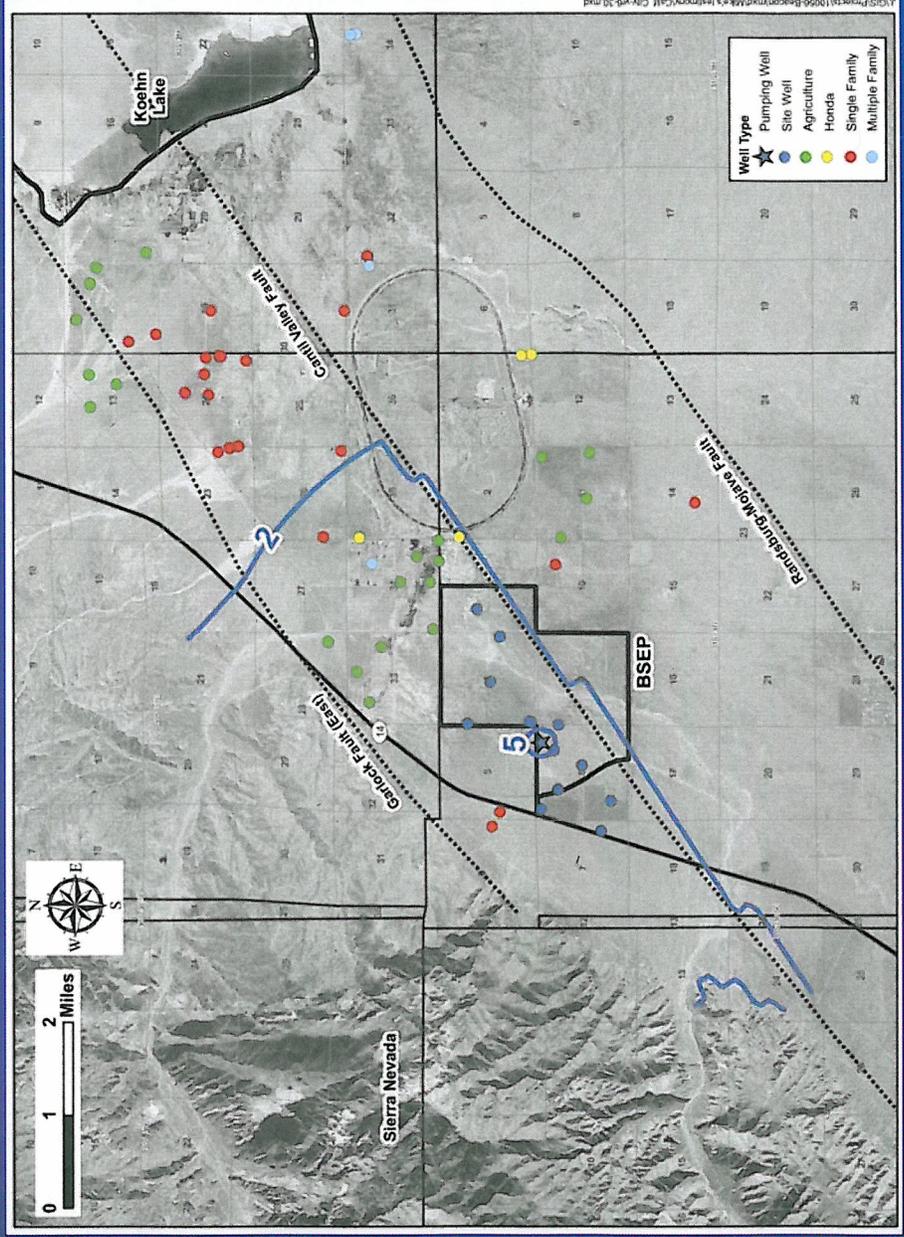


FIGURE R5

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

In the Matter of:

Beacon Solar, LLC's)
Application for Certification of the)
Beacon Solar Energy Project)
_____)

Docket No. 08-AFC-2

**BEACON SOLAR, LLC'S WATER RESOURCES REBUTTAL TESTIMONY OF
SCOTT BUSA**

March 9, 2010

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Sophia Rowlands
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Sacramento, California 95814
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FAX: (916) 444-2100

EXHIBIT 336

BEACON SOLAR ENERGY PROJECT

WATER RESOURCES REBUTTAL TESTIMONY

WATER RESOURCES TESTIMONY OF SCOTT A BUSA ON BEHALF OF BEACON SOLAR ENERGY, LLP IN RESPONSE TO QUESTION RAISED DURING DECEMBER 1, 2009 STATUS CONFERENCE

Q1. Please state your name and title for the record.

A1. My name is Scott A Busa, and I am a Director—Business Development for NextEra Energy Resources, LLC.

Q2. Is your resume attached to Exhibit 309, your declaration for your testimony in the area of Executive Summary previously filed in this proceeding?

A2. Yes, it is.

Q3. Please provide a summary of your qualifications highlighting those areas that apply to the testimony you provide below.

A3. I am responsible for the licensing and development of the Beacon Solar Energy Project (“Beacon”). I am currently managing the development of both the Beacon and Genesis projects for NextEra Energy Resources in California. I also managed the permitting of the first repowering of a wind farm in California’s highly sensitive Altamont Pass Wind Resource Area. In addition, I managed the development of the Tesla power plant.

Q4. Were you at the December 1, 2009 status conference when Hearing Officer Celli requested clarification of the following issue?

Hearing Officer Celli:

...

4.9-64 there was some mention of unresolved water issues having to do with the rights, the groundwater rights.

(Reporter’s Transcript, Beacon Solar Energy Project, at 120 [December 1, 2009].)

A4. Yes, I was.

Q5. Did Beacon Solar, LLC respond to the question of water rights on the properties that make up the Beacon site?

A5. Yes. Mr. John Musick sent a letter to Mr. Eric Solorio that was filed with the Docket Office on August 12, 2009 questioning Beacon Solar, LLC’s water rights. In response to the claims made by Mr. Musick, I requested the preparation of and we prepared the attached letter from Mikel Greene (enclosed as Attachment 1 with the pertinent reference documents).

Furthermore, as part of Beacon Solar, LLC’s due diligence we reviewed the water rights of the parcels we acquired for Beacon. This analysis was critical because the project initially proposed

BEACON SOLAR ENERGY PROJECT

WATER RESOURCES REBUTTAL TESTIMONY

using groundwater for cooling. So, it was very important to ensure Beacon Solar, LLC obtained the water rights when the parcels were purchased.

Q6. What is the conclusion of Mr. Greene's analysis and of First American Title Insurance Company's analysis of water rights?

A6. All of our due diligence and analysis concludes that there has been no severance of water rights on the properties that make up the Beacon site.

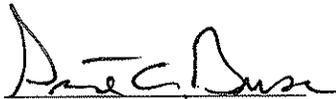
Q11. Where this testimony includes your professional judgment does it represent your best professional judgment?

A11. Yes it does.

Q12. Where this testimony includes statements of fact is it true and correct to the best of your knowledge?

Q12. Yes it is.

Executed at Juno Beach, Florida on March 9, 2010.



Scott A Busa

ATTACHMENT 1



700 Universe Blvd., Juno Beach, FL 33408

August 21, 2009

California Energy Commission
Attn: Eric Solorio via email to ESolorio@energy.state.ca.us

Re: Beacon Solar Energy Project
California Energy Commission ("CEC") Docket #08-AFC-02

Dear Mr. Solorio:

This is the response of Beacon Solar, LLC ("Beacon") to the letter from John Musick docketed on August 12, 2009 ("Letter") in the above referred to CEC Docket number.

Mr. Musick does not specify whom he represents in his Letter. He refers to the "Arciero and Rudnick families". Beacon infers he represents the family of Frank Arciero, also known as Frank Arciero, Sr. ("Arciero") and the family of Elynor Rudnick ("Rudnick"), who is now deceased. Beacon would request that Mr. Musick be required to specifically identify whom he represents in this matter and that he provide evidence of representation.

Beacon disputes Arciero has any mineral or water rights in the real property conveyed to Beacon ("Beacon Property") as described in the deed dated January 2, 2008 and recorded as Document # 0208006777 Kern County Recorder ("Beacon Deed").

The claimed mineral rights of Arciero arise out a reservation in a deed from Arciero and Robert O. Reynolds doing business as Fremont Valley Ranch, dated July 15, 1981 and recorded in Book 5389, Page 733 Kern County Recorder ("Reservation Deed") which states:

RESERVING UNTO THE GRANTOR from the above described Parcels 1 through 23, an undivided 50% of all remaining minerals, oil, gas, petroleum and other hydrocarbon substances within or underlying said land.

One of the attachments to the Letter is a Quitclaim Deed from Frank Arciero, also known as Frank Arciero, Sr. and his wife, dated October 1, 1990 and recorded in Book 6475, Page 2092 Kern County Recorder ("Quitclaim Deed"), in which they remise, release and quitclaim all interest, which would include all mineral rights, in the real property described in the Quitclaim Deed. The real property described in the Quitclaim Deed includes the Beacon Property and also the real property described in the Reservation Deed.

As a result of this Quitclaim Deed, Arciero has no mineral rights in the Beacon Property. The fact that the Reservation Deed is referred to in the Beacon Deed does not constitute a new reservation or conveyance of mineral rights into Arciero.

Another attachment to the Letter is a Grant Deed from Elynor Rudnick dated January 23, 1959 and recorded in Book 3088, Page 122 Kern County Recorder ("Rudnick Deed"). In the Rudnick Deed, Elynor Rudnick reserves a one half or entire interest in the minerals, oil, gas, petroleum and other hydrocarbon substances within or underlying the West Half of Section 3 (Parcel 12 in Beacon Deed), Section 8 (Parcels 13 and 19 in Beacon Deed) and a three-fourths interest in Section 9 (Parcel 14 in Beacon Deed).

In each of these reservations, Elynor Rudnick has no right to conduct drilling or operations on the surface of the land or within the first 500 feet of subsurface without the prior written consent of the surface owner. Beacon has not consented to any drilling or operations on the surface. Whoever now owns these mineral rights have no right to conduct mineral drilling or operations on the surface or within the first 500 feet of subsurface of these portions of the Beacon Property.

The other deeds attached to the Letter do not convey or reserve any mineral rights into Arciero, Elynor Rudnick or the "Rudnick family".

As a result of the Beacon Deed, Beacon received at least 50% of the mineral, oil and gas rights over and under the portions of the Beacon Property described as Parcels 1-10 and 15-18 in Beacon Deed and 100% of the rights over the surface and the first 500 feet of subsurface over the portions of the Beacon Property described as Parcels 12, 13, 14 and 19 in Beacon Deed.

Beacon disputes Mr. Musick's contention that the Arciero and Rudnick families' mineral estate includes "the right to all water encountered in the development of those mineral rights." None of the mineral reservations in the deeds attached to the Letter included a reservation of water rights.

The term "minerals" does not include groundwater or surface water unless those rights have been expressly reserved, excepted, or granted. (*Geothermal Kinetics, Inc. v. Keystone Copper Corporation* (1964) 224 Cal.App.2d 523, 526-527.) It is well-settled law in California that water rights are a separate property interest from mineral rights, and like mineral rights, water rights must be reserved and excepted from a conveyance of real property (*Burr v. Maclay Rancho Water Co.* (1911) 160 Cal. 268) or they will pass with the deed (*Holmes v. Nay* (1921) 186 Cal. 231, 236-237). Additionally, in the construction of a grant or reservation of an interest in real property, courts do not generally imply an exception or reservation of water rights. (*Holmes v. Nay* (1921) 186 Cal. 231, 236-237.)

The Reservation Deed and the Rudnick Deed are silent as to water rights and thus there is no reservation of water. Therefore, Elynor Rudnick does not possess any express or implied right to any surface water or groundwater appurtenant to the Beacon Property. As stated above

Arciero has no mineral rights, but even if he did, he does not possess any express or implied right to any surface water or groundwater appurtenant to the Beacon Property.

Beacon and First American Title Insurance Company have conducted a search of the Beacon Property back to the patents and there has been no severance of water rights. The Beacon Deed did not contain a reservation of water rights. First American has issued an owner's title insurance policy to Beacon insuring said water rights and insuring Beacon against damage to the surface caused by anyone claiming to have water rights. Therefore, because the water rights were not expressly reserved in the deeds attached to the Letter, any water rights appurtenant to the Beacon Property passed with the Beacon Deed. Thus, contrary to Mr. Musick's assertion, Beacon is the holder of the water rights on the Beacon Property.

Beacon has addressed and denied the mineral and water right claims of Mr. Musick and the Arciero family for over a year. Beacon welcomes their cooperation but denies its solar project is not possible without their cooperation.

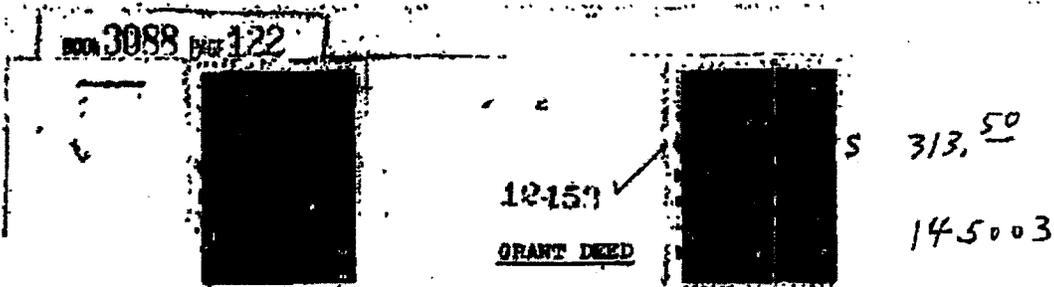
Please contact me at 561.304.5934, 561.691.7765 (fax) or mikel.d.greene@fpl.com if you have any questions or comments.

Sincerely,



Mikel D. Greene
Senior Attorney

Copy: Scott Busa
Jane Luckhardt



FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, ELYNOR RUDNICK, a single woman, hereby grants to LEO C. SMITH, a married man, as his separate property, an undivided 1/2 interest; and WENDELL D. STEVENS, a married man, as his separate property, an undivided ^{one-half} interest, in and to the following described real property in the county of Kern, state of California, to wit:

PARCEL 1: The west half of Section 3, Township 31 South, Range 37 East, Mount Diablo Meridian, according to the official plat of the survey of said land approved by the Surveyor General on January 9, 1856.

EXCEPTING THEREFROM an undivided 1/2 interest of all mineral rights, including oil and its by-products, as reserved in the deed from Ulyde Houasels, et al, recorded July 21, 1952 in Book 1965, page 345 Official Records.

ALSO EXCEPTING THEREFROM and reserving to the Grantor herein, the entire remaining undivided 1/2 interest in and to all oil, gas, hydrocarbon substances and minerals within and underlying said lands, but the Grantor herein shall not conduct drilling or other operations on the surface of said lands or within the first 500 feet of the subsurface without the prior written consent of the surface owner, but nothing herein contained shall be deemed to prevent the Grantor, her successors and assigns, from extracting or capturing said minerals by drilling or conducting subsurface drilling operations at depths below 500 feet from the surface of the ground from surface locations on adjacent or neighboring lands.

PARCEL 2: Section 8, Township 31 South, Range 37 East, Mount Diablo Meridian, according to the official plat of the survey of said land approved by the Surveyor General on January 9, 1856.

EXCEPT THEREFROM a 200 foot right of way located and selected by the Nevada and California Railway Company and The Central Pacific Railway Company (the constructed line of railroad being operated by the Southern Pacific Company, as its Oweyno Branch), under the provisions of the Act of Congress approved March 3, 1875, for a railroad from Mojave to Oweyno, in Kern County.

ALSO EXCEPTING THEREFROM and reserving to the Grantor herein, all oil, gas, hydrocarbon substances and other minerals within and underlying said lands, but the Grantor herein shall not conduct

BOOK 3088 PAGE 123

drilling or other operations on the surface of said lands or within the first 500 feet of the subsurface without the prior written consent of the surface owner, but nothing herein contained shall be deemed to prevent the Grantor, her successors and assigns, from extracting or capturing said minerals by drilling or conducting subsurface drilling operations at depths below 500 feet from the surface of the ground from surface locations on adjacent or neighboring lands.

PARCEL 3: An undivided three-fourths interest in Section 9, Township 31 South, Range 37 East, Mount Diablo Meridian, according to the official plat of the survey of said land approved by the Surveyor General on January 9, 1856,

EXCEPTING THEREFROM and reserving to the Grantor herein, all oil, gas, hydrocarbon substances and other minerals within and underlying said lands, but the Grantor herein shall not conduct drilling or other operations on the surface of said lands or within the first 500 feet of the subsurface without the prior written consent of the surface owner, but nothing herein contained shall be deemed to prevent the Grantor, her successors and assigns, from extracting or capturing said minerals by drilling or conducting subsurface drilling operations at depths below 500 feet from the surface of the ground from surface locations on adjacent or neighboring lands.

Dated: January 23, 1959.

Elynor Rudnick
Elynor Rudnick

State of California }
County of Kern } ss

On this 23rd day of January, 1959, before me, the undersigned, a Notary Public in and for said county and state, personally appeared Elynor Rudnick, known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that she executed the same.

WITNESS my hand and official seal.

12450

RECORDED AT REQUEST OF
TITLE INSURANCE AND TRUST CO.
FEB 25 1959

Jacqueline Tull
Notary Public in and for said county
and state



At _____ on _____
in Book _____ of Official Records
Page _____ Kern County Records

Ray A. Wescammon
Alice J. [unclear]

112.30

RECORDED BY
First American Title Company

Order No.
Escrow No. 994979-V
Loan No. 988306

BOOK 5389 PAGE 733

1981 JUL 15 AM 8:00

004522

WHEN RECORDED MAIL TO:
BUTTES FARMS
P.O. BOX 1206
Delano Calif.
93216

RECORDED
RAY A. VECAMMEN
KERN COUNTY RECORDER
9:00 AM
10000000
85423 A 07/15/81

SPACE ABOVE THIS LINE FOR RECORDER'S USE

MAIL TAX STATEMENTS TO:

DOCUMENTARY TRANSFER TAX \$ 3920.40

Computed on the consideration or value of property conveyed; OR
Computed on the consideration or value less here or encumbrances
existing at time of sale.

SAME
K 2

First American Title Company
Suppliers of California and Nevada documentary tax - Farm Home

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
ROBERT O. REYNOLDS and FRANK ARCIERO, married men as their separate property, doing
business as FREMONT VALLEY RANCH, a joint venture

hereby GRANT(S) to
BUTTES FARMS, a California corporation

the real property in the XXXXXX unincorporated area
County of Kern

State of California, described as

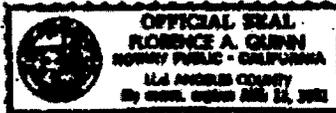
FOR LEGAL DESCRIPTION SEE ATTACHED ADDENDUM MARKED EXHIBIT "A", PAGES 1 THROUGH 6,
INCORPORATED HEREIN BY THIS REFERENCE AND MADE A PART HEREIN.

STATE OF CALIFORNIA
COUNTY OF Los Angeles
On July 14, 1981 before me, the undersigned, a Notary Public in and for
said State, personally appeared Frank Arciero and Robert O. Reynolds

known to me to be the person whose name is subscribed to the within instrument and acknowledged to me
that they executed the same.

WITNESS my hand and official seal.

Signature Florence A. Quinn
Name (Typed or Printed)



Dated July 13, 1981

Robert O. Reynolds
ROBERT O. REYNOLDS

STATE OF CALIFORNIA
COUNTY OF

Frank Arciero
FRANK ARCIERO

On before me, the undersigned, a Notary Public in and for said
State, personally appeared

known to me to be the person whose name subscribed to the within instrument and acknowledged that
they executed the same.
WITNESS my hand and official seal.

DESCRIPTION:

PARCEL 1:

The $\frac{N}{2}$ of the $\frac{N}{2}$ of the $\frac{SW}{4}$ of the $\frac{NE}{4}$ of Section 7, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the County Recorder of said County.

EXCEPTING THEREFROM that portion thereof lying within a strip of land 250 feet in width, the sidelines of said strip of land being parallel with and distant southeasterly 75 feet and northwesterly 175 feet, measured at right angles, from that certain line described in Lis Pendens of Superior Court Case No. 52961, recorded in Book 1598, Page 429 of Official Records, a portion of that said certain line being more particularly described as follows:

Beginning at a point on the south line of said Section 7, distant thereon North $89^{\circ}36'51''$ east, 1388.86 feet from a brass cap set to mark the southwest corner of said Section 7; thence from said point of beginning North $23^{\circ}57'13''$ east, 11,717.64 feet; thence North $41^{\circ}34'13''$ east, 282.32 feet to a point on the north line of Section 5, Township 31 South, Range 37 East, M.D.B.M., distant thereon South $89^{\circ}58'02''$ east, 819.50 feet from a brass cap set to mark the northwest corner of said Section 5, as conveyed to the City of Los Angeles, in deed recorded December 17, 1969 in Book 4347, Page 438 of Official Records.

PARCEL 2:

The $\frac{S}{4}$ of the $\frac{N}{2}$ of the $\frac{SW}{4}$ of the $\frac{NE}{4}$ of Section 7, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the County Recorder of said County.

EXCEPTING THEREFROM that portion thereof lying within a strip of land 250 feet in width, the sidelines of said strip of land being parallel with and distant southeasterly 75 feet and northwesterly 175 feet, measured at right angles, from that certain line described in Lis Pendens of Superior Court Case No. 52961, recorded in Book 1598, Page 429 of Official Records, a portion of that said certain line being more particularly described as follows:

Beginning at a point on the south line of said Section 7, distant thereon North $89^{\circ}36'51''$ east, 1388.86 feet from a brass cap set to mark the southwest corner of said Section 7; thence from said point of beginning North $23^{\circ}57'13''$ east, 11,717.64 feet; thence North $41^{\circ}34'13''$ east, 282.32 feet to a point on the north line of Section 5, Township 31 South, Range 37 East, M.D.B.M., distant thereon South $89^{\circ}58'02''$ east, 819.50 feet from a brass cap set to mark the northwest corner of said Section 5, as conveyed to the City of Los Angeles, in deed recorded December 17, 1969 in Book 4347, Page 438 of Official Records.

PARCEL 3:

The NE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 7, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the County Recorder of said County.

PARCEL 4:

The SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 7, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the County Recorder of said County.

PARCEL 5:

The NE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 7, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the County Recorder of said County.

EXCEPTING THEREFROM that portion thereof lying within a strip of land 250 feet in width, the sidelines of said strip of land being parallel with and distant southeasterly 75 feet and northwesterly 175 feet, measured at right angles, from that certain line described in Lis Pendens of Superior Court Case No. 52961, recorded in Book 1598, Page 429 of Official Records, a portion of that said certain line being more particularly described as follows:

Beginning at a point on the south line of said Section 7, distant thereon North 89°36'51" east, 1388.86 feet from a brass cap set to mark the southwest corner of said Section 7; thence from said point of beginning North 23°57'13" east, 11,717.64 feet; thence North 41°34'13" east, 282.32 feet to a point on the north line of Section 5, Township 31 South, Range 37 East, M.D.B.M., distant thereon South 89°58'02" east, 819.50 feet from a brass cap set to mark the northwest corner of said Section 5, as conveyed to the City of Los Angeles, in deed recorded December 17, 1969 in Book 4347, Page 438 of Official Records.

PARCEL 6:

The NE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 7, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the County Recorder of said County.

EXCEPTING THEREFROM that portion thereof lying within a strip of land 250 feet in width, the sidelines of said strip of land being parallel with and distant southeasterly 75 feet and northwesterly 175 feet, measured at right angles, from that certain line described in Lis Pendens of Superior Court Case No. 52961, recorded in Book 1598, Page 429 of Official Records, a portion of that said certain line being more particularly described as follows:

Beginning at a point on the south line of said Section 7, distant thereon North 89°36'51" east, 1388.86 feet from a brass cap set to mark the southwest corner of said Section 7; thence from said point of beginning North 23°57'13" east, 11,717.64 feet; thence North 41°34'13" east, 282.32 feet to a point on the north line of Section 5, Township 31 South, Range 37 East, M.D.B.M., distant thereon South 89°58'02" east, 819.50 feet from a brass cap set to mark the northwest corner of said Section 5, as conveyed to the City of Los Angeles, in deed recorded December 17, 1969 in Book 4347, Page 438 of Official Records.

PARCEL 7:

The SW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 7, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the County Recorder of said County.

EXCEPTING THEREFROM that portion thereof lying within a strip of land 250 feet in width, the sidelines of said strip of land being parallel with and distant southeasterly 75 feet and northwesterly 175 feet, measured at right angles, from that certain line described in Lis Pendens of Superior Court Case No. 52961, recorded in Book 1598, Page 429 of Official Records, a portion of that said certain line being more particularly described as follows:

Beginning at a point on the south line of said Section 7, distant thereon North 89°36'51" east, 1388.86 feet from a brass cap set to mark the southwest corner of said Section 7; thence from said point of beginning North 23°57'13" east, 11,717.64 feet; thence North 41°34'13" east, 282.32 feet to a point on the north line of Section 5, Township 31 South, Range 37 East, M.D.B.M., distant thereon South 89°58'02" east, 819.50 feet from a brass cap set to mark the northwest corner of said Section 5, as conveyed to the City of Los Angeles, in deed recorded December 17, 1969 in Book 4347, Page 438 of Official Records.

PARCEL 8:

The SE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 7, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the County Recorder of said County.

PARCEL 9:

The E $\frac{1}{2}$ of the NE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 7, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the County Recorder of said County.

PARCEL 10:

The E $\frac{1}{2}$ of the SW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 7, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the County Recorder of said County.

PARCEL 11:

An undivided $\frac{1}{4}$ th interest in and to all of Section 9, Township 31 South, Range 37 East, N.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the Surveyor General.

PARCEL 12:

The $\frac{1}{2}$ of Section 3, Township 31 South, Range 37 East, N.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the Surveyor General.

EXCEPTING THEREFROM an undivided $\frac{1}{4}$ interest of all mineral rights, including oil and its by-products, as reserved in the deed from Clyde Houseale, et al, recorded July 21, 1952 in Book 1965, Page 345 of Official Records.

PARCEL 13:

Section 8, Township 31 South, Range 37 East, N.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the Surveyor General.

EXCEPTING THEREFROM the $\frac{1}{2}$ of the $\frac{1}{4}$ of the $\frac{1}{4}$ of the $\frac{1}{4}$ of said Section 8.

ALSO EXCEPTING THEREFROM a 200 foot right of way located and selected by the Nevada and California Railway Company and the Central Pacific Railway Company (the constructed line of railroad being operated by the Southern Pacific Company, as its Oweyno Branch), under the provisions of the Act of Congress approved March 3, 1875, for a railroad from Mojave to Oweyno, in Kern County.

ALSO EXCEPTING THEREFROM all oil, gas, hydrocarbon substances and other minerals within and underlying said lands, but the grantor herein shall not conduct drilling or other operations on the surface of said lands or within the first 500 feet of the subsurface without the prior written consent of the surface owner, but nothing herein contained shall be deemed to prevent the grantor, her successors and assigns, from extracting or capturing said minerals by drilling or conducting sub-surface drilling operations at depths below 500 feet from the surface of the ground from surface locations on adjacent or neighboring lands, as reserved by Elymor Rodnick, by deed dated January 23, 1959, recorded February 25, 1959 in Book 3088, Page 122 of Official Records.

PARCEL 14:

An undivided $\frac{3}{4}$ interest in and to all of Section 9, Township 31 South, Range 37 East, N.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the Surveyor General.

EXCEPTING THEREFROM an undivided $\frac{1}{4}$ th interest in all oil, gas and other hydrocarbon substances and minerals, as excepted in deed dated February 24, 1953, recorded March 3, 1953 in Book 2047, Page 343 of Official Records.

PARCEL 15:

The $\frac{S}{4}$ of Fractional Section 4, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the Surveyor General.

PARCEL 16:

The $\frac{W}{4}$ of Lots 1 and 2 of the NE $\frac{1}{4}$ of Fractional Section 4, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the Surveyor General.

PARCEL 17:

That portion of the $\frac{S}{4}$ of the NE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 7, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the Surveyor General, lying easterly of the east line of State Highway Route 23.

PARCEL 18:

All of that portion of the $\frac{S}{4}$ of the SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 7, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the Surveyor General, lying easterly of State Highway Route 6.

PARCEL 19:

The $\frac{E}{2}$ of the SW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 8, Township 31 South, Range 37 East, M.D.B.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the Surveyor General.

EXCEPTING THEREFROM a 200 foot right of way located and selected by the Nevada and California Railway Company and the Central Pacific Railway Company (the constructed line of railroad being operated by the Southern Pacific Company, as its Owyego Branch), under the provisions of the Act of Congress approved March 3, 1875, for a railroad from Mojave to Owyego, in Kern County.

ALSO EXCEPTING THEREFROM all oil, gas, hydrocarbon substances and other minerals within and underlying said lands, but the grantor herein shall not conduct drilling or other operations on the surface of said lands or within the first 500 feet of the subsurface without the prior written consent of the surface owner, but nothing herein contained shall be deemed to prevent the grantor, her successors and assigns, from extracting or capturing said minerals by drilling or conducting sub-surface drilling operations at depths below 500 feet from the surface of the ground from surface locations on adjacent or neighboring lands, as reserved by Elynor Kudsick, by deed dated January 23, 1959, recorded February 25, 1959 in Book 3088, Page 122 of Official Records.

PARCEL 20:

The $\frac{S}{4}$ of the $\frac{NW}{4}$ of Fractional Section 4, Township 31 South, Range 37 East, M.D.S.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the Surveyor General.

Said $\frac{S}{4}$ being that portion of said $\frac{NW}{4}$ lying southerly of a line running east and west through said $\frac{NW}{4}$ and dividing equally the acreage in the $\frac{NW}{4}$ so that one half of the acreage in said $\frac{NW}{4}$ lies north of said line and one half of the acreage in said $\frac{NW}{4}$ lies south of said line.

EXCEPTING THEREFROM all oil, gas, minerals and other hydrocarbons.

PARCEL 21:

An undivided $\frac{1}{2}$ interest in and to all oil, gas, minerals and other hydrocarbon substances lying in and under the $\frac{NW}{4}$ of Section 4, Township 31 South, Range 37 East, M.D.S.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the Surveyor General.

PARCEL 22:

The $\frac{N}{4}$ of the $\frac{NW}{4}$ of Fractional Section 4, Township 31 South, Range 37 East, M.D.S.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the Surveyor General, said $\frac{N}{4}$ being that portion of said $\frac{NW}{4}$ lying northerly of a line running east and west through said $\frac{NW}{4}$ and dividing equally the acreage in said $\frac{NW}{4}$ so that one-half of the acreage in said $\frac{NW}{4}$ lies north of said line and one-half of the acreage in said $\frac{NW}{4}$ lies south of said line.

EXCEPTING THEREFROM $\frac{1}{2}$ of all oil, gas, minerals and other hydrocarbons.

PARCEL 23:

One-half of all oil, gas, minerals and other hydrocarbon substances within and underlying the following described property:

The $\frac{S}{4}$ of the $\frac{NW}{4}$ of Fractional Section 4, Township 31 South, Range 37 East, M.D.S.M., in the unincorporated area of the County of Kern, State of California, as per the Official Plat thereof on file in the Office of the Surveyor General, said $\frac{S}{4}$ being that portion of said $\frac{NW}{4}$ lying southerly of a line running east and west through said $\frac{NW}{4}$ and dividing equally the acreage in said $\frac{NW}{4}$ so that one-half of the acreage in said $\frac{NW}{4}$ lies north of said line and one-half of the acreage in said $\frac{NW}{4}$ lies south of said line.

RESERVING UNTO THE GRANTOR from the hereinabove described Parcels 1 through 23, an undivided 50% of all remaining minerals, oil, gas, petroleum and other hydrocarbon substances within or underlying said land.

James W. Fitch, Assessor - Recorder
Kern County Official Records

SABRINA
1/15/2008
10:28 AM

RECORDING REQUESTED BY:
North American Title Company

Recorded at the request of
Title Court Service

AND WHEN RECORDED MAIL TO:

DOC#: 0208006777

Stat Types: 1 Pages: 13

Beacon Solar LLC
Att: Michael O' Sullivan
700 Universe Blvd
Juno Beach, Florida 33408



Fees	44.00
Taxes	** Conf **
Others	0.00
PAYD	\$44.00

THIS SPACE FOR RECORDER'S USE ONLY:

Title Order No.: 0018872-62

Escrow No.: 07-52404-RZ

GRANT DEED

THE UNDERSIGNED GRANTOR(S) DECLARE(S)

DOCUMENTARY TRANSFER TAX is \$ NOT OF PUBLIC RECORD.

- computed on full value of property conveyed, or
 computed on full value less value of liens or encumbrances remaining at time of sale.
 Unincorporated area City of AND

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

Amona Investments, Inc, a California corporation

hereby GRANT(s) to:

Beacon Solar, LLC, a Delaware limited liability company

the following described real property in the County of Kern, State of California, described as:
LEGAL DESCRIPTION ATTACHED HERETO AS EXHIBIT "A" AND MADE A PART HEREOF

APN#: 469-082-16-00, 469-091-28-00, 469-092-13-00, 469-092-27-00, 469-022-09-00, 469-050-01-00,
469-050-02-00, 469-050-05-00, 469-050-06-00, 469-050-09-00, 469-050-17-00, 469-050-18-00,
469-060-01-00, 469-060-02-00, 469-060-12-00, 469-060-13-00, 469-080-16-00, 469-060-17-00
469-022-02-00, 469-022-03-00, 469-022-06-00, 469-021-10-00, 469-021-02-00, 469-082-14-00,
469-082-26-00, 469-022-01-00, 469-021-05-00, 469-021-01-00

SUBJECT TO:

1. Taxes and assessments.
2. All matters shown on Exhibit "B" attached hereto and incorporated herein by this reference.

DATE: January 2, 2008

PLEASE SEE PAGE TWO FOR GRANTOR'S SIGNATURE.

MAIL TAX STATEMENTS TO PARTY SHOWN BELOW; IF NO PARTY SHOWN, MAIL AS DIRECTED ABOVE:

GRANT DEED - PAGE TWO

GRANTOR'S SIGNATURE:

Amora Investments, Inc. a California Corporation

By: 
Solomon Rastegar, President

1-09-08

STATE OF CALIFORNIA)
COUNTY OF _____)SS

On _____ Before me, _____ A
Notary Public in and for said State, personally appeared _____

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California }
County of Los Angeles } SS.

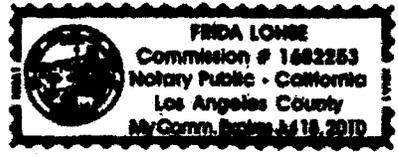
On 1-09-08 before me, Frida Lohse, Notary Public
personally appeared Solomon Rastegar

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/henr/their authorized capacity(ies), and that by his/henr/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Of Notary Public



Place Notary Seal Above

OPTIONAL

Though the data is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

DESCRIPTION OF ATTACHED DOCUMENT

Title or Type of Document: Grant Deed
Document Date: 1-02-08 / 1-09-08 Number of Pages: 2
Signer(s) Other Than Named Above: none

CAPACITY(IES) CLAIMED BY SIGNER

Signer's Name: Solomon Rastegar
Individual
Corporate Officer - Title(s):
Partnership - Limited General
Attorney in Fact
Trustee
Guardian or Conservator
Other: President
Signer Is Representing:

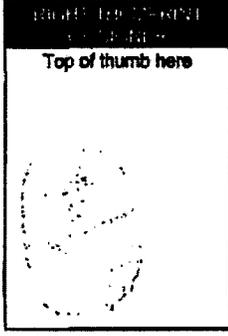


EXHIBIT "A"
TO
GRANT DEED

LEGAL DESCRIPTION

PARCEL 1: (PORTION OF APN 469-082-16)

THE NORTH HALF OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THAT PORTION THEREOF LYING WITHIN A STRIP OF LAND 250 FEET IN WIDTH, THE SIDELINES OF SAID STRIP OF LAND BEING PARALLEL WITH AND DISTANT SOUTHEASTERLY 75 FEET AND NORTHWESTERLY 175 FEET, MEASURED AT RIGHT ANGLES, FROM THAT CERTAIN LINE DESCRIBED IN LIS PENDENS OF SUPERIOR COURT CASE NO. 52961, RECORDED IN BOOK 1598, PAGE 429 OF SAID OFFICIAL RECORDS, A PORTION OF THAT SAID CERTAIN LINE BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTH LINE OF SAID SECTION 7 DISTANT THEREON NORTH 89° 36' 51" EAST, 1,388.86 FEET FROM A BRASS CAP SET TO MARK THE SOUTHWEST CORNER OF SAID SECTION 7; THENCE FROM SAID POINT OF BEGINNING NORTH 23° 57' 13" EAST, 11,717.64 FEET; THENCE NORTH 41° 34' 13" EAST, 282.32 FEET TO A POINT ON THE NORTH LINE OF SECTION 5, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, DISTANT THEREON SOUTH 89° 58' 02" EAST, 819.50 FEET FROM A BRASS CAP SET TO MARK THE NORTHWEST CORNER OF SAID SECTION 5, AS CONVEYED TO THE CITY OF LOS ANGELES IN DEED RECORDED DECEMBER 17, 1989 IN BOOK 4347, PAGE 438, OF OFFICIAL RECORDS.

EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 2: (PORTION OF APN 469-082-16)

THE SOUTH HALF OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THAT PORTION THEREOF LYING WITHIN A STRIP OF LAND 250 FEET IN WIDTH, THE SIDELINES OF SAID STRIP OF LAND BEING PARALLEL WITH AND DISTANT SOUTHEASTERLY 75 FEET AND NORTHWESTERLY 175 FEET, MEASURED AT RIGHT ANGLES, FROM THAT CERTAIN LINE DESCRIBED IN LIS PENDENS OF SUPERIOR COURT CASE NO. 52961, RECORDED IN BOOK 1598, PAGE 429 OF SAID OFFICIAL RECORDS, A PORTION OF THAT SAID CERTAIN LINE BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTH LINE OF SAID SECTION 7 DISTANT THEREON NORTH 89° 36' 51" EAST, 1,388.86 FEET FROM A BRASS CAP SET TO MARK THE SOUTHWEST CORNER OF SAID SECTION 7; THENCE FROM SAID POINT OF BEGINNING NORTH 23° 57' 13" EAST, 11,717.64 FEET; THENCE NORTH 41° 34' 13" EAST, 282.32 FEET TO A POINT ON THE NORTH LINE OF SECTION 5, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, DISTANT THEREON SOUTH 89° 58' 02" EAST, 819.50 FEET FROM A BRASS CAP SET TO MARK THE NORTHWEST CORNER OF SAID SECTION 5, AS CONVEYED TO THE CITY OF LOS ANGELES IN DEED RECORDED DECEMBER 17, 1969 IN BOOK 4347, PAGE 438, OF OFFICIAL RECORDS.

EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 3: (PORTION OF APN 469-082-16)

THE NORTH HALF OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF THE SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE PLAT THEREOF.

EXCEPT THAT PORTION CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED APRIL 1, 1992 IN BOOK 6654, PAGE 439, OF OFFICIAL RECORDS.

EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 4: (PORTION OF APN 469-082-16)

THE SOUTH HALF OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THAT PORTION CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED APRIL 1, 1992 IN BOOK 6654, PAGE 439, OF OFFICIAL RECORDS.

EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 5: (PORTION OF APN 469-091-28)

THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 7, TOWNSHIP 37 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THAT PORTION THEREOF LYING WITHIN A STRIP OF LAND 250 FEET IN WIDTH, THE SIDELINES OF SAID STRIP OF LAND BEING PARALLEL WITH AND DISTANT SOUTHEASTERLY 75 FEET AND NORTHWESTERLY 175 FEET, MEASURED AT RIGHT ANGLES, FROM THAT CERTAIN LINE DESCRIBED IN LES PENDENS OF SUPERIOR COURT CASE NO. 52961, RECORDED IN BOOK 1598, PAGE 429 OF SAID OFFICIAL RECORDS, A PORTION OF THAT SAID CERTAIN LINE BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTH LINE OF SAID SECTION 7 DISTANT THEREON NORTH 89° 36' 51" EAST, 1388.86 FEET FROM A BRASS CAP SET TO MARK THE SOUTHWEST CORNER OF SAID SECTION 7; THENCE FROM SAID POINT OF BEGINNING NORTH 23° 57' 13" EAST, 11,717.64 FEET, THENCE NORTH 41° 34' 13" EAST, 282.32 FEET TO A POINT ON THE NORTH LINE OF SECTION 5, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, DISTANT THEREON SOUTH 89° 58' 02" EAST, 819.50 FEET FROM A BRASS CAP SET TO MARK THE NORTHWEST CORNER OF SAID SECTION 5, AS CONVEYED TO THE CITY OF LOS ANGELES IN DEED RECORDED DECEMBER 17, 1969 IN BOOK 4347, PAGE 438, OF OFFICIAL RECORDS.

EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 6: (PORTION OF APN 469-091-28)

THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THAT PORTION THEREOF LYING WITHIN A STRIP OF LAND 250 FEET IN WIDTH, THE SIDELINES OF SAID STRIP OF LAND BEING PARALLEL WITH AND DISTANT SOUTHEASTERLY 75 FEET AND NORTHWESTERLY 175 FEET, MEASURED AT RIGHT ANGLES, FROM THAT CERTAIN LINE DESCRIBED IN LIS PENDENS OF SUPERIOR COURT CASE NO. 52961, RECORDED IN BOOK 1598, PAGE 429 OF SAID OFFICIAL RECORDS, A PORTION OF THAT SAID CERTAIN LINE BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTH LINE OF SAID SECTION 7 DISTANT THEREON NORTH 89° 36' 51" EAST, 1388.86 FEET FROM A BRASS CAP SET TO MARK THE SOUTHWEST CORNER OF SAID SECTION 7; THENCE FROM SAID POINT OF BEGINNING NORTH 23° 57' 13" EAST, 11,717.64 FEET; THENCE NORTH 41° 34' 13" EAST, 282.32 FEET TO A POINT ON THE NORTH LINE OF SECTION 5, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, DISTANT THEREON SOUTH 89° 58' 02" EAST, 819.50 FEET FROM A BRASS CAP SET TO MARK THE NORTHWEST CORNER OF SAID SECTION 5, AS

CONVEYED TO THE CITY OF LOS ANGELES IN DEED RECORDED DECEMBER 17, 1969 IN BOOK 4347, PAGE 438, OF OFFICIAL RECORDS.

EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 7: (PORTION OF APN 469-091-28)

THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THAT PORTION THEREOF LYING WITHIN A STRIP OF LAND 250 FEET IN WIDTH, THE SIDELINES OF SAID STRIP OF LAND BEING PARALLEL WITH AND DISTANT SOUTHEASTERLY 75 FEET AND NORTHWESTERLY 175 FEET, MEASURED AT RIGHT ANGLES, FROM THAT CERTAIN LINE DESCRIBED IN LIS PENDENS OF SUPERIOR COURT CASE NO. 52961, RECORDED IN BOOK 1598, PAGE 429 OF SAID OFFICIAL RECORDS, A PORTION OF THAT SAID CERTAIN LINE BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTH LINE OF SAID SECTION 7 DISTANT THEREON NORTH 89° 36' 51" EAST, 1388.86 FEET FROM A BRASS CAP SET TO MARK THE SOUTHWEST CORNER OF SAID SECTION 7; THENCE FROM SAID POINT OF BEGINNING NORTH 23° 57' 13" EAST, 11,717.64 FEET; THENCE NORTH 41° 34' 13" EAST, 282.32 FEET TO A POINT ON THE NORTH LINE OF SECTION 5, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, DISTANT THEREON SOUTH 89° 58' 02" EAST, 819.50 FEET FROM A BRASS CAP SET TO MARK THE NORTHWEST CORNER OF SAID SECTION 5, AS CONVEYED TO THE CITY OF LOS ANGELES IN DEED RECORDED DECEMBER 17, 1969 IN BOOK 4347, PAGE 438, OF OFFICIAL RECORDS.

EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 8: (PORTION OF APN 469-091-28)

THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 9: (PORTION OF APN 469-092-13)

THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THAT PORTION CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED APRIL 1, 1992 IN BOOK 6654, PAGE 439, OF OFFICIAL RECORDS.

EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 10: (PORTION OF APN 469-092-27)

THE SOUTH HALF OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THAT PORTION CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED JUNE 8, 1992 IN BOOK 6684, PAGE 1483 OF OFFICIAL RECORDS.

EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 11: (APN 469-022-09)

AN UNDIVIDED 1/4TH INTEREST IN AND TO ALL OF SECTION 9, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM AN UNDIVIDED 1/4 INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED MARCH 3, 1953 AS INSTRUMENT NO. 9987 IN BOOK 2047, PAGE 343, OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 12: (APN 469-050-01-02-05-06-09-17-18 AND 469-060-01-02-12-13-16 AND 17)

THE WEST HALF OF SECTION 3, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM AN UNDIVIDED 1/2 INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN THE DEED RECORDED JULY 21, 1952 AS INSTRUMENT NO. 33622 IN BOOK 1965, PAGE 345, OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM AN UNDIVIDED 1/2 INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN THE DEED RECORDED FEBRUARY 25, 1959 AS INSTRUMENT NO. 12453 IN BOOK 3088, PAGE 122, OF OFFICIAL RECORDS.

PARCEL 13: (APN 469-022-02-03-AND 06)

SECTION 8, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THE EAST HALF OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 8.

ALSO EXCEPT A 200 FOOT RIGHT OF WAY LOCATED AND SELECTED BY THE NEVADA AND CALIFORNIA RAILWAY AND THE CENTRAL PACIFIC RAILWAY COMPANY (THE CONSTRUCTED LINE OF RAILROAD BEING OPERATED BY THE SOUTHERN PACIFIC COMPANY, AS ITS OWEYNO BRANCH), UNDER THE PROVISIONS OF THE ACT OF CONGRESS APPROVED MARCH 3, 1875, FOR A RAILROAD FROM MOJAVE TO OWEYNO, IN KERN COUNTY.

ALSO EXCEPT THAT PORTION CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED APRIL 1, 1992 IN BOOK 6654, PAGE 439, OF OFFICIAL RECORDS.

EXCEPTING THEREFROM ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN THE DEED RECORDED FEBRUARY 25, 1959 AS INSTRUMENT NO. 12453 IN BOOK 3088, PAGE 122, OF OFFICIAL RECORDS.

PARCEL 14: (APN 469-022-09)

AN UNDIVIDED 3/4TH INTEREST IN AND TO ALL OF SECTION 9, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM AN UNDIVIDED 1/4TH INTEREST IN ALL MINERALS, OIL, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED MARCH 3, 1953 IN BOOK 2047, PAGE 343, OF OFFICIAL RECORDS.

ALSO EXCEPTING THE REMAINING ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN THE DEED RECORDED FEBRUARY 25, 1959 AS INSTRUMENT NO. 12453 IN BOOK 3088, PAGE 122, OF OFFICIAL RECORDS.

PARCEL 15: (APN 469-021-10)

THE SOUTH HALF OF FRACTIONAL SECTION 4, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 16: (APN 469-021-02)

THE WEST HALF OF LOTS 1 AND 2 OF THE NORTHEAST QUARTER OF FRACTIONAL SECTION 4, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 17: (APN 469-082-14)

THAT PORTION OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING EASTERLY OF STATE HIGHWAY ROUTE 23.

EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 18: (APN 469-082-26)

ALL THAT PORTION OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING EASTERLY OF STATE HIGHWAY ROUTE 6.

EXCEPTING THEREFROM AN UNDIVIDED 50% INTEREST IN ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN DEED RECORDED JULY 15, 1981 AS INSTRUMENT NO. 004522 IN BOOK 5389, PAGE 733, OF OFFICIAL RECORDS.

PARCEL 19: (APN 469-022-01)

THE EAST HALF OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT

DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT A 200 FOOT RIGHT OF WAY LOCATED AND SELECTED BY THE NEVADA AND CALIFORNIA RAILWAY AND THE CENTRAL PACIFIC RAILWAY COMPANY (THE CONSTRUCTED LINE OF RAILROAD BEING OPERATED BY THE SOUTHERN PACIFIC COMPANY, AS ITS OWEYNO BRANCH), UNDER THE PROVISIONS OF THE ACT OF CONGRESS APPROVED MARCH 3, 1875, FOR A RAILROAD FROM MOJAVE TO OWEYNO, IN KERN COUNTY.

EXCEPTING THEREFROM ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN THE DEED RECORDED FEBRUARY 25, 1959 AS INSTRUMENT NO. 12453 IN BOOK 3088, PAGE 122, OF OFFICIAL RECORDS.

PARCEL 20: (APN 469-021-05)

THE SOUTH HALF OF THE NORTHWEST QUARTER OF FRACTIONAL SECTION 4, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

SAID SOUTH HALF BEING THAT PORTION OF SAID NORTHWEST QUARTER LYING SOUTHERLY OF A LINE RUNNING EAST AND WEST THROUGH SAID NORTHWEST QUARTER AND DIVIDING EQUALLY THE ACREAGE IN THE NORTHWEST QUARTER SO THAT 1/2 OF THE ACREAGE IN SAID NORTHWEST QUARTER LIES NORTH OF SAID LINE AND 1/2 OF THE ACREAGE IN SAID NORTHWEST QUARTER LIES SOUTH OF SAID LINE.

EXCEPTING THEREFROM ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN A DEED RECORDED JANUARY 2, 1973 AS INSTRUMENT NO. 100314 IN BOOK 4763, PAGES 856 THROUGH 864, OF OFFICIAL RECORDS.

PARCEL 21: (APN 469-021-01)

THE NORTH HALF OF THE NORTHWEST QUARTER OF FRACTIONAL SECTION 4, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO MERIDIAN, IN THE COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, SAID NORTH HALF BEING THAT PORTION OF SAID NORTHWEST QUARTER LYING NORTHERLY OF A LINE RUNNING EAST AND WEST THROUGH SAID NORTHWEST QUARTER AND DIVIDING EQUALLY THE ACREAGE IN THE NORTHWEST QUARTER SO THAT 1/2 OF THE ACREAGE IN SAID NORTHWEST QUARTER LIES NORTH OF SAID LINE AND 1/2 OF THE ACREAGE IN SAID NORTHWEST QUARTER LIES SOUTH OF SAID LINE.

EXCEPTING THEREFROM ALL MINERALS, OILS, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN A DEED RECORDED JANUARY 2, 1973 AS INSTRUMENT NO. 100311 IN BOOK 4763, PAGES 801 THROUGH 809, OF OFFICIAL RECORDS.

EXHIBIT "B"
TO
GRANT DEED

PERMITTED EXCEPTIONS

AN EASEMENT AFFECTING PARCEL 16 IN FAVOR OF ANNIE L. SEALY, A WIDOW RECORDED JULY 23, 1938 IN BOOK 802, PAGE 484, OF OFFICIAL RECORDS.

AN EASEMENT AFFECTING PARCELS 13 AND 19 IN FAVOR OF INTERSTATE TELEGRAPH COMPANY AND THE CALIFORNIA ELECTRIC POWER COMPANY NOW SOUTHERN CALIFORNIA EDISON COMPANY RECORDED MARCH 16, 1953 IN BOOK 2054, PAGE 4, OF OFFICIAL RECORDS.

AN EASEMENT AFFECTING PARCEL 12 IN FAVOR OF INTERSTATE TELEGRAPH COMPANY AND THE CALIFORNIA ELECTRIC POWER COMPANY NOW SOUTHERN CALIFORNIA EDISON COMPANY RECORDED MARCH 16, 1953 IN BOOK 2054, PAGE 6, OF OFFICIAL RECORDS AS AFFECTED BY THAT PARTIAL QUITCLAIM OF EASEMENT RECORDED JUNE 19, 1973 AS INSTRUMENT NO. 44723 IN BOOK 4790 PAGE 1798 OF OFFICIAL RECORDS.

AN EASEMENT AFFECTING PARCEL 15 IN FAVOR OF: INTERSTATE TELEGRAPH COMPANY AND THE CALIFORNIA ELECTRIC POWER COMPANY NOW SOUTHERN CALIFORNIA EDISON COMPANY RECORDED MARCH 16, 1953 IN BOOK 2054, PAGE 18, OF OFFICIAL RECORDS AS AFFECTED BY A PARTIAL QUITCLAIM OF EASEMENT RECORDED DECEMBER 6, 1972 AS INSTRUMENT NO. 39460 IN BOOK 4753 PAGE 678 OF OFFICIAL RECORDS.

AN IRREVOCABLE OFFER OF DEDICATION FOR ROAD AND INCIDENTAL PURPOSES AFFECTING PARCEL 12, RECORDED FEBRUARY 5, 1971 AS BOOK 4483, PAGE 741 OF OFFICIAL RECORDS TO THE PUBLIC IN GENERAL. SAID IRREVOCABLE OFFER WAS ACCEPTED BY THE BOARD OF SUPERVISORS BY RESOLUTION NO. 71-70.

AN EASEMENT AFFECTING PARCEL 13 IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION SYSTEMS RECORDED NOVEMBER 1, 1973 IN BOOK 4811, PAGE 40, OF OFFICIAL RECORDS.

AN EASEMENT AFFECTING PARCELS 11, 13 14 16 AND 19 IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION RECORDED JANUARY 23, 1974 IN BOOK 4822, PAGE 1328, OF OFFICIAL RECORDS

AN EASEMENT AFFECTING PARCELS 12 AND 15 IN FAVOR OF CONTINENTAL TELEPHONE COMPANY OF CALIFORNIA-NOW VERIZON CALIFORNIA, INC. RECORDED AUGUST 16, 1974 IN BOOK 4855, PAGE 2256, OF OFFICIAL RECORDS.

AN EASEMENT AFFECTING PARCELS 9 AND 13 IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION RECORDED SEPTEMBER 9, 1974 IN BOOK 4859, PAGE 484, OF OFFICIAL RECORDS.

AN EASEMENT AFFECTING PARCEL 12 IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION RECORDED SEPTEMBER 19, 1974 IN BOOK 4859, PAGE

485, OF OFFICIAL RECORDS THE INTENT OF THE EASEMENT IS TO BE IN THE LOCATION IN WHICH THE ELECTRICAL SYSTEM WAS CONSTRUCTED.

AN EASEMENT AFFECTING PARCEL 20 IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION RECORDED MARCH 8, 1976 IN BOOK 4943, PAGE 579, OF OFFICIAL RECORDS.

THAT CERTAIN SETTling FIRST AND FINAL ACCOUNT OF EXECUTRIX AND FOR FINAL DISTRIBUTION AFFECTING PARCEL 21 IN WHICH THE ESTATE OF MABEL J. HOLUM, ALSO KNOWN AS MABEL HOLUM PURPORTS TO DISTRIBUTE 100 PERCENT OF ALL MINERALS UNDERLYING THE NORTHWEST 1/4 OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 4, TOWNSHIP 31 SOUTH, RANGE 37 WEST, MOUNT DIABLO BASE AND MERIDIAN, RECORDED OCTOBER 9, 1979 IN BOOK 5235, PAGE 25 OF OFFICIAL RECORDS.

AN EASEMENT AFFECTING PARCELS 11 AND 14 IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION RECORDED APRIL 20, 1982 IN BOOK 5453, PAGE 775, OF OFFICIAL RECORDS.

AN EASEMENT AFFECTING PARCELS 12, 13 AND 15 IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION RECORDED MAY 13, 1982 IN BOOK 5458, PAGE 2255, OF OFFICIAL RECORDS.

ABUTTER'S RIGHTS OF INGRESS AND EGRESS TO OR FROM HIGHWAY HAVE BEEN RELINQUISHED TO THE STATE OF CALIFORNIA AND THE RIGHT TO ACCESS TO THE FRONTAGE ROAD HAS BEEN RESERVED FOR THE SUBJECT PARCEL IN THE DOCUMENT RECORDED APRIL 1, 1992 AS BOOK 6654, PAGE 439 OF OFFICIAL RECORDS.

A WAIVER OF ANY CLAIMS FOR DAMAGES BY REASON OF THE LOCATION, CONSTRUCTION, LANDSCAPING OR MAINTENANCE OF A CONTIGUOUS FREEWAY, HIGHWAY OR ROADWAY, AS CONTAINED IN THE DOCUMENT RECORDED APRIL 1, 1992 AS BOOK 6654, PAGE 439 OF OFFICIAL RECORDS.

ABUTTER'S RIGHTS OF INGRESS AND EGRESS TO OR FROM HIGHWAY HAVE BEEN RELINQUISHED TO THE STATE OF CALIFORNIA AND THE RIGHT FOR ACCESS TO THE FRONTAGE ROAD HAS BEEN RESERVED FOR THE SUBJECT PARCEL IN THE DOCUMENT RECORDED JUNE 8, 1992 AS BOOK 6684, PAGE 1483 OF OFFICIAL RECORDS.

A WAIVER OF ANY CLAIMS FOR DAMAGES BY REASON OF THE LOCATION, CONSTRUCTION, LANDSCAPING OR MAINTENANCE OF A CONTIGUOUS FREEWAY, HIGHWAY OR ROADWAY, AS CONTAINED IN THE DOCUMENT RECORDED JUNE 8, 1992 AS BOOK 6684, PAGE 1483 OF OFFICIAL RECORDS.

RECORDING REQUESTED BY:
CENTURY TITLE & GUARANTEE CO.

RECORDED BY
GALE S. ENSTAD
KERN COUNTY, RECORDER

When Recorded Mail to: 003702
ALVIN D. ROSENBLOOM, ESQ.
MAIDEN, ROSENBLOOM, WINTROUB & FRIDKIS
1925 Century Park East, Suite 950
Los Angeles, CA 90067

1991 JAN -9 AM 8:01

ORS 13.00
MDEP 1.00
REC.FE 11.00
CE CHARGE 25.00

There is no change in the assessed owner, and no change in the mailing address for tax statements.

HT99:110 C001 R01 T09:13

S.01

13	OR
1	MD
	LN
11	RF
	NA

Space Above This Line
For Recorder's Use

QUITCLAIM DEED

THE UNDERSIGNED GRANTORS DECLARE that the Documentary Transfer Tax due hereon is None for the reasons stated below.

The Tax Assessor's parcels are listed below; however, there is no "change in ownership" under the California Revenue & Taxation Code for the reason hereinafter stated.

All property is in the unincorporated area of the County.

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, FRANK ARCIERO, also known as Frank Arciero, Sr., and ANGIE ARCIERO, Husband and Wife, hereby

REMISE, RELEASE AND FOREVER QUITCLAIM to the following persons, to the extent of and in confirmation of the interests which each of said Grantees now have in said property, the real property hereinafter described in Exhibit "A" hereto:

Fremont 2270, a General Partnership, as owner of the fee title to said property.

Christopher O. Reynolds, Daniel O. Reynolds and Kirkwood Reynolds, Trustees of the Robert O. Reynolds Trust, as Beneficiaries under that certain Deed of Trust dated January 3, 1990, and recorded January 16, 1990 as Instrument No. 005729, in Book 6335, Page 1258, Official Records of Kern County, California.

PCL'S
1-21

Banner Land Development West, Inc., as Beneficiary under that certain Deed of Trust dated February 4, 1990, recorded February 20, 1990 as Instrument No. 022354, in Book 6348, Page 901, Official Records of Kern County, California.

Namco Capital Group, Inc., a California corporation, as Assignee of said last mentioned Deed of Trust pursuant to an assignment recorded August 23, 1990 as Instrument No. 027138, in Book 6422, Page 2307, Official Records of Kern County, California.

This Quitclaim Deed is given to evidence the Grantors' ratification and confirmation of their relinquishment of any and all interest in the real property hereinafter described, and their release of any claims thereto; provided, however, that by this Quitclaim Deed, and in particular by the inclusion of the Trustees of the Robert O. Reynolds Trust, Grantors do not intend to, and do not waive any rights or claims they may have against Robert O. Reynolds individually and personally, and his successors in interest, not related to or affecting the subject real property, but growing out of or in any way related to the former joint venture between said Robert O. Reynolds and the undersigned Frank Arciero (reflected by that certain Joint Venture Agreement dated May 6, 1974) and its dissolution.

The real property herein mentioned as to which this Quitclaim Deed is to be effective is described in Exhibit A, attached hereto and made a part hereof.

The Assessor's parcel numbers for the real property so described in Exhibit A are set forth on Exhibit B, attached hereto and made a part hereof.

No reassessment of said real property is required because this transfer is exempt under Revenue & Taxation Code Section 62(b), as a transfer only for the purpose of perfecting title to property already in the Grantee(s).

No documentary transfer tax is payable by reason of this Quitclaim Deed because this deed confirms title already vested in the Grantees by reason of deeds heretofore recorded in Book 6220, Page 0678, Official Records, Book 4851, Page 670, Official

Records, Book 4855, Page 338, Official Records, Book 4864, Page 519, Official Records, Book 4900, Page 643, Official Records, and Book 4983, Page 795, Official Records, all of Kern County, California.

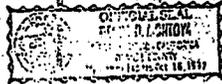
Dated: October 1, 1990

Frank Arciero
Frank Arciero, also known as
Frank Arciero, Sr.

Angie Arciero
Angie Arciero

STATE OF CALIFORNIA)
) SS.
COUNTY OF ORANGE)

On this 1st day of October, 1990, before me, the under-
signed, a Notary Public in and for said County and State, per-
sonally appeared FRANK ARCIERO, also known as Frank Arciero, Sr.,
and ANGIE ARCIERO, personally known to me (or proved to me on the
basis of satisfactory evidence) to be the persons whose names are
subscribed to the within instrument, and acknowledged that they
executed the same.



Denise D. Montoya
Notary Public
Denise D. Montoya
Notary Name Typed or Printed

PARCEL 1:

THE NORTH HALF OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM THAT PORTION THEREOF LYING WITHIN A STRIP OF LAND 250 FEET IN WIDTH, THE SIDELINES OF SAID STRIP OF LAND BEING PARALLEL WITH AND DISTANT SOUTHEASTERLY 75 FEET AND NORTHWESTERLY 175 FEET, MEASURED AT RIGHT ANGLES, FROM THAT CERTAIN LINE DESCRIBED IN LIS PENDENS OF SUPERIOR COURT CASE NO. 52961, RECORDED IN BOOK 1598 PAGE 429 OF OFFICIAL RECORDS, A PORTION OF THAT SAID CERTAIN LINE BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTH LINE OF SAID SECTION 7, DISTANT THEREON NORTH 89°36'51" EAST, 1388.86 FEET FROM A BRASS CAP SET TO MARK THE SOUTHWEST CORNER OF SAID SECTION 7; THENCE FROM SAID POINT OF BEGINNING NORTH 23°57'13" EAST, 11,717.64 FEET; THENCE NORTH 41°34'13" EAST, 282.32 FEET TO A POINT ON THE NORTH LINE OF SECTION 5, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, DISTANT THEREON SOUTH 89°38'02" EAST, 819.50 FEET FROM A BRASS CAP SET TO MARK THE NORTHWEST CORNER OF SAID SECTION 5, AS CONVEYED TO THE CITY OF LOS ANGELES, IN DEED RECORDED DECEMBER 17, 1969 IN BOOK 4347, PAGE 438 OF OFFICIAL RECORDS.

PARCEL 2:

THE SOUTH HALF OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM THAT PORTION THEREOF LYING WITHIN A STRIP OF LAND 250 FEET IN WIDTH, THE SIDELINES OF SAID STRIP OF LAND BEING PARALLEL WITH AND DISTANT SOUTHEASTERLY 75 FEET AND NORTHWESTERLY 175 FEET, MEASURED AT RIGHT ANGLES, FROM THAT CERTAIN LINE DESCRIBED IN LIS PENDENS OF SUPERIOR COURT CASE NO. 52961, RECORDED IN BOOK 1598, PAGE 429 OF OFFICIAL RECORDS, A PORTION OF THAT SAID CERTAIN LINE BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTH LINE OF SAID SECTION 7, DISTANT THEREON NORTH 89°36'51" EAST, 1388.86 FEET FROM A BRASS CAP SET TO MARK THE SOUTHWEST CORNER OF SAID SECTION 7; THENCE FROM SAID POINT OF BEGINNING NORTH 23°57'13" EAST, 11,717.64 FEET; THENCE NORTH 41°34'13" EAST, 282.32 FEET TO A POINT ON THE NORTH LINE OF SECTION 5, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, DISTANT THEREON SOUTH 89°38'02" EAST, 819.50 FEET FROM A BRASS CAP SET TO MARK THE NORTHWEST CORNER OF SAID SECTION 5, AS CONVEYED TO THE CITY OF LOS ANGELES, IN DEED RECORDED DECEMBER 17, 1969 IN BOOK 4347, PAGE 438 OF OFFICIAL RECORDS.

PARCEL 3:

THE NORTH HALF OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL 4:

THE SOUTH HALF OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL 5:

THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM THAT PORTION THEREOF LYING WITHIN A STRIP OF LAND 250 FEET IN WIDTH, THE SIDELINES OF SAID STRIP OF LAND BEING PARALLEL WITH AND DISTANT SOUTHEASTERLY 75 FEET AND NORTHWESTERLY 175 FEET, MEASURED AT RIGHT ANGLES, FROM THAT CERTAIN LINE DESCRIBED IN LIS PENDENS OF SUPERIOR COURT CASE NO 52961, RECORDED IN BOOK 1599 PAGE 429 OF OFFICIAL RECORDS, A PORTION OF THAT SAID CERTAIN LINE BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTH LINE OF SAID SECTION 7, DISTANT THEREON NORTH 89°36'51" EAST, 1388.86 FEET FROM A BRASS CAP SET TO MARK THE SOUTHWEST CORNER OF SAID SECTION 7; THENCE FROM SAID POINT OF BEGINNING NORTH 23°57'13" EAST, 11,717.64 FEET; THENCE NORTH 41°34'13" EAST, 282.32 FEET TO A POINT ON THE NORTH LINE OF SECTION 5, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, DISTANT THEREON SOUTH 89°58'02" EAST, 819.50 FEET FROM A BRASS CAP SET TO MARK THE NORTHWEST CORNER OF SAID SECTION 5, AS CONVEYED TO THE CITY OF LOS ANGELES, IN DEED RECORDED DECEMBER 17, 1969 IN BOOK 4347, PAGE 438 OF OFFICIAL RECORDS.

PARCEL 6:

THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM THAT PORTION THEREOF LYING WITHIN A STRIP OF LAND 250 FEET IN WIDTH, THE SIDELINES OF SAID STRIP OF LAND BEING PARALLEL WITH AND DISTANT SOUTHEASTERLY 75 FEET AND NORTHWESTERLY 175 FEET,

MEASURED AT RIGHT ANGLES, FROM THAT CERTAIN LINE DESCRIBED IN LIS PENDENS OF SUPERIOR COURT CASE NO 52961, RECORDED IN BOOK 1598 PAGE 429 OF OFFICIAL RECORDS, A PORTION OF THAT SAID CERTAIN LINE BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTH LINE OF SAID SECTION 7, DISTANT THEREON NORTH 89°36'51" EAST, 1388.86 FEET FROM A BRASS CAP SET TO MARK THE SOUTHWEST CORNER OF SAID SECTION 7; THENCE FROM SAID POINT OF BEGINNING NORTH 23°57'13" EAST, 11,717.64 FEET; THENCE NORTH 41°34'13" EAST, 282.32 FEET TO A POINT ON THE NORTH LINE OF SECTION 5, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, DISTANT THEREON SOUTH 89°58'02" EAST, 819.50 FEET FROM A BRASS CAP SET TO MARK THE NORTHWEST CORNER OF SAID SECTION 5, AS CONVEYED TO THE CITY OF LOS ANGELES, IN DEED RECORDED DECEMBER 17, 1969 IN BOOK 4347, PAGE 438 OF OFFICIAL RECORDS.

PARCEL 7:

THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM THAT PORTION THEREOF LYING WITHIN A STRIP OF LAND 250 FEET IN WIDTH, THE SIDELINES OF SAID STRIP OF LAND BEING PARALLEL WITH AND DISTANT SOUTHEASTERLY 75 FEET AND NORTHWESTERLY 175 FEET, MEASURED AT RIGHT ANGLES, FROM THAT CERTAIN LINE DESCRIBED IN LIS PENDENS OF SUPERIOR COURT CASE NO 52961, RECORDED IN BOOK 1598 PAGE 429 OF OFFICIAL RECORDS, A PORTION OF THAT SAID CERTAIN LINE BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTH LINE OF SAID SECTION 7, DISTANT THEREON NORTH 89°36'51" EAST, 1388.86 FEET FROM A BRASS CAP SET TO MARK THE SOUTHWEST CORNER OF SAID SECTION 7; THENCE FROM SAID POINT OF BEGINNING NORTH 23°57'13" EAST, 11,717.64 FEET; THENCE NORTH 41°34'13" EAST, 282.32 FEET TO A POINT ON THE NORTH LINE OF SECTION 5, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, DISTANT THEREON SOUTH 89°58'02" EAST, 819.50 FEET FROM A BRASS CAP SET TO MARK THE NORTHWEST CORNER OF SAID SECTION 5, AS CONVEYED TO THE CITY OF LOS ANGELES, IN DEED RECORDED DECEMBER 17, 1969 IN BOOK 4347, PAGE 438 OF OFFICIAL RECORDS.

PARCEL 8:

THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL 9:

THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL 10:

THE SOUTH HALF OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL 11:

AN UNDIVIDED 1/4TH INTEREST IN AND TO ALL OF SECTION 9, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE SURVEYOR GENERAL.

PARCEL 12:

THE WEST HALF OF SECTION 3, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE SURVEYOR GENERAL.

EXCEPTING THEREFROM AN UNDIVIDED 1/2 INTEREST OF ALL MINERAL RIGHTS, INCLUDING OIL, AND ITS BY-PRODUCTS, AS RESERVED IN THE DEED FROM CLYDE HOUSSELS, ET AL, RECORDED JULY 21, 1952 IN BOOK 1965 PAGE 345 OF OFFICIAL RECORDS.

PARCEL 13:

SECTION 8, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE SURVEYOR GENERAL.

EXCEPTING THEREFROM THE EAST HALF OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 8.

ALSO EXCEPTING THEREFROM A 200 FOOT RIGHT OF WAY LOCATED AND SELECTED BY THE NEVADA AND CALIFORNIA RAILWAY COMPANY AND THE CENTRAL PACIFIC RAILWAY COMPANY (THE CONSTRUCTED LINE OF RAILROAD BEING OPERATED BY THE SOUTHERN PACIFIC COMPANY, AS ITS OWEYNO BRANCH), UNDER THE PROVISIONS OF THE ACT OF CONGRESS APPROVED MARCH 3, 1875, FOR A RAILROAD FROM NOJAVE TO OWEYNO, IN KERN COUNTY.

ALSO EXCEPTING THEREFROM ALL OIL, GAS, HYDROCARBON SUBSTANCES AND OTHER MINERALS WITHIN AND UNDERLYING SAID LANDS, BUT THE GRANTOR HEREIN SHALL

NOT CONDUCT DRILLING OR OTHER OPERATIONS ON THE SURFACE OF SAID LANDS OR WITHIN THE FIRST 500 FEET OF THE SUBSURFACE WITHOUT THE PRIOR WRITTEN CONSENT OF THE SURFACE OWNER, BUT NOTHING HEREIN CONTAINED SHALL BE DEEMED TO PREVENT THE GRANTOR, HER SUCCESSORS AND ASSIGNS, FROM EXTRACTING OR CAPTURING SAID MINERALS BY DRILLING OR CONDUCTING SUBSURFACE DRILLING OPERATIONS AT DEPTHS BELOW 500 FEET FROM THE SURFACE OF THE GROUND FROM SURFACE LOCATIONS ON ADJACENT OR NEIGHBORING LANDS, AS RESERVED BY ELYNOR RUDNICK, BY DEED DATED JANUARY 23, 1959, RECORDED FEBRUARY 25, 1959 IN BOOK 3088 PAGE 122 OF OFFICIAL RECORDS.

PARCEL 14:

AN UNDIVIDED 3/4 INTEREST IN AND TO ALL OF SECTION 9, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE SURVEYOR GENERAL.

EXCEPTING THEREFROM AN UNDIVIDED 1/4TH INTEREST IN ALL OIL, GAS AND OTHER HYDROCARBON SUBSTANCES AND MINERALS, AS EXCEPTED IN DEED DATED FEBRUARY 24, 1953, RECORDED MARCH 3, 1953 IN BOOK 2047 PAGE 343 OF OFFICIAL RECORDS.

PARCEL 15:

THE SOUTH HALF OF FRACTIONAL SECTION 4, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE SURVEYOR GENERAL.

PARCEL 16:

THE WEST HALF OF LOTS 1 AND 2 OF THE NORTHEAST QUARTER OF FRACTIONAL SECTION 4, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE SURVEYOR GENERAL.

PARCEL 17:

THAT PORTION OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE SURVEYOR GENERAL, LYING EASTERLY OF THE EAST LINE OF STATE HIGHWAY ROUTE 23.

PARCEL 18:

ALL OF THAT PORTION OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 7, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE SURVEYOR GENERAL, LYING EASTERLY OF STATE HIGHWAY ROUTE 6.

PARCEL 19:

THE EAST HALF OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE SURVEYOR GENERAL.

EXCEPTING THEREFROM A 200 FOOT RIGHT OF WAY LOCATED AND SELECTED BY THE NEVADA AND CALIFORNIA RAILWAY COMPANY AND THE CENTRAL PACIFIC RAILWAY COMPANY (THE CONSTRUCTED LINE OF RAILROAD BEING OPERATED BY THE SOUTHERN PACIFIC COMPANY, AS ITS OWENYO BRANCH), UNDER THE PROVISIONS OF THE ACT OF CONGRESS APPROVED MARCH 3, 1875, FOR A RAILROAD FROM MOJAVE TO OWENYO, IN KERN COUNTY.

ALSO EXCEPTING THEREFROM ALL OIL, GAS, HYDROCARBON SUBSTANCES AND OTHER MINERALS WITHIN AND UNDERLYING SAID LANDS, BUT THE GRANTOR HEREIN SHALL NOT CONDUCT DRILLING OR OTHER OPERATIONS ON THE SURFACE OF SAID LANDS, WITHIN THE FIRST 500 FEET OF THE SUBSURFACE WITHOUT THE PRIOR WRITTEN CONSENT OF THE SURFACE OWNER, BUT NOTHING HEREIN CONTAINED SHALL BE DEEMED TO PREVENT THE GRANTOR, HER SUCCESSORS AND ASSIGNS, FROM EXTRACTING OR CAPTURING SAID MINERALS BY DRILLING OR CONDUCTING SUBSURFACE DRILLING OPERATIONS AT DEPTHS BELOW 500 FEET FROM THE SURFACE OF THE GROUND FROM SURFACE LOCATIONS ON ADJACENT OR NEIGHBORING LANDS, AS RESERVED BY ELYNOR RUDNICK BY DEED DATED JANUARY 23, 1959, RECORDED FEBRUARY 25, 1959 IN BOOK 3088, PAGE 122 OF OFFICIAL RECORDS.

PARCEL 20:

THE SOUTH HALF OF THE NORTHWEST QUARTER OF FRACTIONAL SECTION 4, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE SURVEYOR GENERAL.

SAID SOUTH HALF BEING THAT PORTION OF SAID NORTHWEST QUARTER LYING SOUTHERLY OF A LINE RUNNING EAST AND WEST THROUGH SAID NORTHWEST QUARTER AND DIVIDING EQUALLY THE ACREAGE IN THE NORTHWEST QUARTER SO THAT ONE HALF OF THE ACREAGE IN SAID NORTHWEST QUARTER LIES NORTH OF SAID LINE AND ONE HALF OF THE ACREAGE IN SAID NORTHWEST QUARTER LIES SOUTH OF SAID LINE.

EXCEPTING THEREFROM 1/2 OF ALL OIL, GAS, MINERALS AND OTHER HYDROCARBONS.

PARCEL 21:

THE NORTH HALF OF THE NORTHWEST QUARTER OF FRACTIONAL SECTION 4, TOWNSHIP 31 SOUTH, RANGE 37 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER THE OFFICIAL PLAT THEREOF ON FILE IN THE OFFICE OF THE SURVEYOR GENERAL, SAID NORTH HALF BEING THAT PORTION OF SAID NORTHWEST QUARTER LYING NORTHERLY OF A LINE RUNNING EAST AND WEST THROUGH SAID NORTHWEST QUARTER AND DIVIDING EQUALLY THE ACREAGE IN SAID NORTHWEST QUARTER SO THAT

EXHIBIT "A" CONTINUED...

BOOK 6475 PAGE 2101

ONE-HALF OF THE ACREAGE IN SAID NORTHWEST QUARTER LIES NORTH OF SAID
LINE AND ONE-HALF OF THE ACREAGE IN SAID NORTHWEST QUARTER LIES SOUTH OF
SAID LINE.

EXCEPTING THEREFROM 1/2 OF ALL OIL, GAS, MINERALS AND OTHER HYDROCARBONS.

EXHIBIT "B"
ASSESSOR'S PARCEL NUMBERS

333-024-19-00-7C

333-025-14-00-9C

333-012-10-00-3C

333-040-02-00-5C

333-040-04-00-1C

333-040-07-00-0C

333-040-29-00-4C

333-040-31-00-9C

333-040-33-00-5C

333-012-02-00-0C

333-012-06-00-2C

333-011-40-00-3C

333-024-28-00-3C

333-011-50-00-2C

333-026-23-00-2C

333-025-21-00-9C

333-040-01-00-2C

333-040-03-00-8C

333-040-05-00-4C

333-040-08-00-3C

333-040-30-00-6C

333-040-32-00-2C

333-040-34-00-8C

333-012-03-00-3C

333-011-46-00-1C

333-024-37-00-9C

333-012-01-00-7C

333-011-49-00-0C

**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION
OF THE STATE OF CALIFORNIA**

**APPLICATION FOR CERTIFICATION FOR
THE BEACON SOLAR ENERGY PROJECT**

DOCKET NO. 08-AFC-2

PROOF OF SERVICE
(Revised 2/8/10)

<u>APPLICANT</u>	<u>COUNSEL FOR APPLICANT</u>	<u>ENERGY COMMISSION</u>
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<p>Bill Pietrucha, Project Manager Jared Foster, P.E. Worley Parsons 2330 E. Bidwell, Suite 150 Folsom, CA 95630 Bill.Pietrucha@worleyparsons.com Jared.Foster@worleyparsons.com</p>	<p><u>INTERVENORS</u></p> <p>Tanya A. Gulesserian Marc D. Jacobs Adams Broadwell Joseph & Cardozo 601 Gateway Boulevard, Suite 1000 South San Francisco, CA 94080 E-MAIL PREFERRED tgulesserian@adamsbroadwell.com</p>	<p>Jennifer Jennings Public Adviser's Office publicadviser@energy.state.ca.us</p>

Declaration of Service

I, Lois Navarrot, declare that on March 9, 2010, I served and filed copies of the attached **Beacon Solar, LLC's Rebuttal Testimony**. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: www.energy.ca.gov/sitingcases/beacon. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service List) and to the Commission's Docket Unit, in the following manner:

Dockets:	1 hard copy	2 CDs
Ken Celli	2 hard copies	
Eric Solorio	1 hard copy	1 CD
Jared Babula		1 CD
CURE	1 hard copy	1 CD
AECOM	1 hard copy	
CURE	E-Mail Copy in several e-mails	

For Service to All Other Parties

 X sent electronically as indicated above to email addresses on the Proof of Service list;

 X by personal delivery or by depositing in the United States mail at Sacramento, California, as indicated above, with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service List above to those addresses **NOT** marked "email preferred."

AND

For Filing with the Energy Commission

 X sending an original paper copy and two electronic copies, hand delivered to the address below;

OR

_____ depositing in the mail an original and 12 paper copies as follow:

California Energy Commission
Attn: Docket No. 08-AFC-2
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

/s/

Lois Navarrot