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Document Title:	COMPLIANCE7-03-00, Mojave Solar Project 2019 Annual Compliance Report (09-AFC-5C) 2,1
Description:	COMPLIANCE7-03-00, Mojave Solar Project 2019 Annual Compliance Report (09-AFC-5C) part 2,1
Filer:	Jose Manuel Bravo Romero
Organization:	Mojave Solar Project
Submitter Role:	Applicant
Submission Date:	3/4/2020 9:19:34 AM
Docketed Date:	3/4/2020

Mojave Solar LLC

42134 Harper Lake Road
Hinkley, California 92347

Phone: 760 308 0400

SUBMITTED ELECTRONICALLY

Subject: 09-AFC-5C
Condition Number: Compliance 7
Description: Mojave Solar Project 2019 Annual Compliance Report
Submittal Number: COMPLIANCE7-03-00
Distribution: Keith Winstead, CEC; Kara Harris, US DOE; Dr. Sharma Shankar CDFW; Ray Bransfield, USFWS; Thomas Dietsch, USFWS

February 27, 2020

Keith Winstead
Compliance Project Manager
California Energy Commission
1516 Ninth Street, MS-2000
Sacramento, CA 95814
keith.winstead@energy.ca.gov

Dear Mr. Winstead,

The attached Mojave Solar Project 2019 Annual Compliance Report (09-AFC-5C) is submitted for your review as part of the ongoing reporting required by the California Energy Commission's Conditions of Certification for the Mojave Solar Project.

Sincerely,

Jose Manuel Bravo Romero
Manager
Compliance, Permitting, Quality and Environment Department
ASI Operations LLC
Mojave Solar Project
42134 Harper Lake Rd
Hinkley, CA 92347
(303) 378-7302
jmanuel.bravo@atlanticayield.com

Attachment: 09-AFC-5C Mojave Solar Project 2019 Annual Compliance Report.

**09-AFC-5C Mojave Solar Project
Annual Compliance Report
2019 reporting period**



Prepared by:

AS Industrial Operations LLC.

for

Mojave Solar LLC

42134 Harper Lake Road
Hinkley, California 92347

**BIO16 Tamarisk Eradication, Monitoring,
and Reporting Program Report for
Mojave Solar Project
San Bernardino County, California**

Annual Compliance Report 2019. This report represents Year IV of monitoring



Submitted
February 2020

Prepared for:
Mojave Solar LLC
42134 Harper Lake Road
Hinkley, California 92347

Prepared by:
AS Industrial Operations LLC
42134 Harper Lake Road
Hinkley, California 92347

Rowe Ecological Consulting
Phone number: 321-853-5709
sprowe@gmail.com

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1. Introduction

Condition of Certification (COC) BIO-16, Tamarisk Eradication, Monitoring, and Reporting Program, issued by the California Energy Commission (CEC) as a condition of licensing of the Abengoa Mojave Solar Project (MSP) requires the project owner to prepare and implement a Tamarisk Eradication, Monitoring, and Reporting Plan with the objective of preventing the re-invasion of undesirable weeds and/or invasive wildlife for a minimum of five years. The revised Mojave Solar Project Tamarisk Eradication, Monitoring, and Reporting Plan (Tamarisk Plan) was submitted on August 03, 2016.

BIO-16 and the Tamarisk Plan require monitoring and treatment of invasive species for five years after site development is complete, or until success criteria are met. The success criteria are as follows:

- The site shall not contain more than 5% exotic plant species.
- All plant species with rates of dispersal and establishment listed as "high" or "moderate" on the California Invasive Plant Inventory shall have documented absence or have been removed from the site for at least three years.
- The site shall not contain invasive wildlife species.

This report is submitted per Section 6.3 of the Tamarisk Plan, which specifies that annual monitoring reports will be prepared during the 5-year maintenance and monitoring period. This report represents year four of monitoring.

2. Post-Construction Status

The Tamarisk Plan, the Staff Assessment, Commission Decision, and guidance provided by CEC staff biologist Ann Crisp via email on May 28, 2014 provide two categories of weed species: invasive and exotic. The DB and BM surveyed for weed species throughout the year as conditions warranted and seasonal germination developed. Biologists coordinated with MSP and the weed control contractor for treatment.

2.1. Invasive Plant Species

Invasive species are defined as having a California Invasive Plant Council's (Cal-IPC) overall ranking of "high" or "moderate." According to BIO-16, all plant species with an overall ranking of high or moderate must be documented absent or have been removed from the site for at least three years for eradication to be deemed successful.

The Post-Construction Tamarisk Eradication, Monitoring and Reporting Program Report (June 2016) documented presence or absence of invasive weed species at the end of construction 2016 and their expected need for control during operations. Three invasive species, red brome (*Bromus madritensis* ssp. *rubens*), hare barley (*Hordeum murinum* ssp. *leporinum*), and London rocket (*Sisymbrium irio*) were listed as expected to need control during operations.

Only one invasive plant species was documented at MSP in 2018. A single tamarisk seedling that germinated near the Beta cooling tower was removed by hand. Table 1 summarizes the presence of invasive plant species at MSP from the end of construction 2016 through the current reporting period.

Species	Cal-IPC Rating	Present 2016*	Present 2017	Present 2018	Present 2019
Red Brome <i>Bromus madritensis</i> ssp. <i>rubens</i>	High	Yes	No	No	No
Bermuda Grass <i>Cynodon dactylon</i>	Moderate	Yes	No	No	No
Hare Barley <i>Hordeum murinum</i> ssp. <i>leporinum</i>	Moderate	Yes	No	No	No
London Rocket <i>Sisymbrium irio</i>	Moderate	Yes	No	No	No
Tamarisk <i>Tamarix ramosissima</i>	High	No	No	Yes	No

*at end of construction

2.2. Exotic Plant Species

The Post-Construction Tamarisk Eradication, Monitoring and Reporting Program Report (June 2016) documented presence or absence of exotic weed species at the end of construction 2016 and their expected need for control during operations. Four exotic species redstem filaree (*Erodium cicutarium*), barbed wire Russian thistle (*Salsola paulsenii*), Russian thistle (*S. tragus*), and Mediterranean grass (*Schismus arabicus*) were listed as expected to need control during operations.

Exotic species include species on the Cal-IPC list but that do not have an overall rating of "moderate" or "high". BIO-16 specifies that the site shall not have more than 5% exotic plant species to meet its success criteria goals.

Three exotic plant species were observed during this reporting period: Russian thistle (*Salsola tragus*), heron's bill (*Erodium cicutarium*) and Mediterranean grass (*Schismus arabicus*). Russian thistle occurred onsite as a few scattered individual plants that germinated during the current year. Mediterranean grass occurred onsite typically as small patches in the depressions between solar troughs and heron's bill occurred in a few small clusters in similar locations. Table 2 summarizes the presence of exotic plant species at MSP from the end of construction 2016 through the current reporting period.

Species	Cal-IPC Rating	Present 2016*	Present 2017	Present 2018	Present 2019
Redstem filaree <i>Erodium cicutarium</i>	Limited	No	Yes	Yes	Yes
Barbwire Russian Thistle <i>Salsola paulsenii</i>	Limited	Yes	No	No	No
Russian Thistle <i>Salsola tragus</i>	Limited	Yes	Yes	Yes	Yes
Mediterranean grass <i>Schismus arabicus</i>	Limited	Yes	Yes	Yes	Yes

*at end of construction

2.3. Other Non-native Plant Species

The definition of exotic and invasive plant species is based on Cal-IPC ratings, however, there remains the potential for additional non-native plant species to occur on site that are not on the Cal-IPC list. Two non-native plant species that are not ranked by Cal-IPC were present on site at the end of construction in 2016: cheeseweed (*Malva parviflora*) and nettle-leaved goosefoot (*Chenopodium murale*). These species were not observed during the current reporting period.

3. Discussion & Recommendations

The MSP does not yet meet the BIO-16 success criteria for invasive plant species due to the presence of three invasive plant species in 2016 as well as one species in 2018. Collectively the total cover of exotic plant species is less than 1%, which meets the success criteria of 5% or less.

Weeds present during construction are likely to have dispersed seed that may remain viable for several years and weed populations outside MSP boundaries will continue to provide a seed source for volunteer establishment onsite.

MSP has contracted with a California-licensed herbicide applicator and has been applying herbicide to weed species within the project approximately every six months. Herbicide application has shown to be effective in controlling weeds onsite. During 2019 post-emergent herbicide was applied during spring and pre-emergent during fall.

It is recommended that MSP continue its weed program using an adaptive management approach in consultation with a California-licensed herbicide applicator to continue to effectively reduce and eliminate invasive and exotic plant species on site.

Attachment 1

Representative Photographs of Invasive Plant Species.



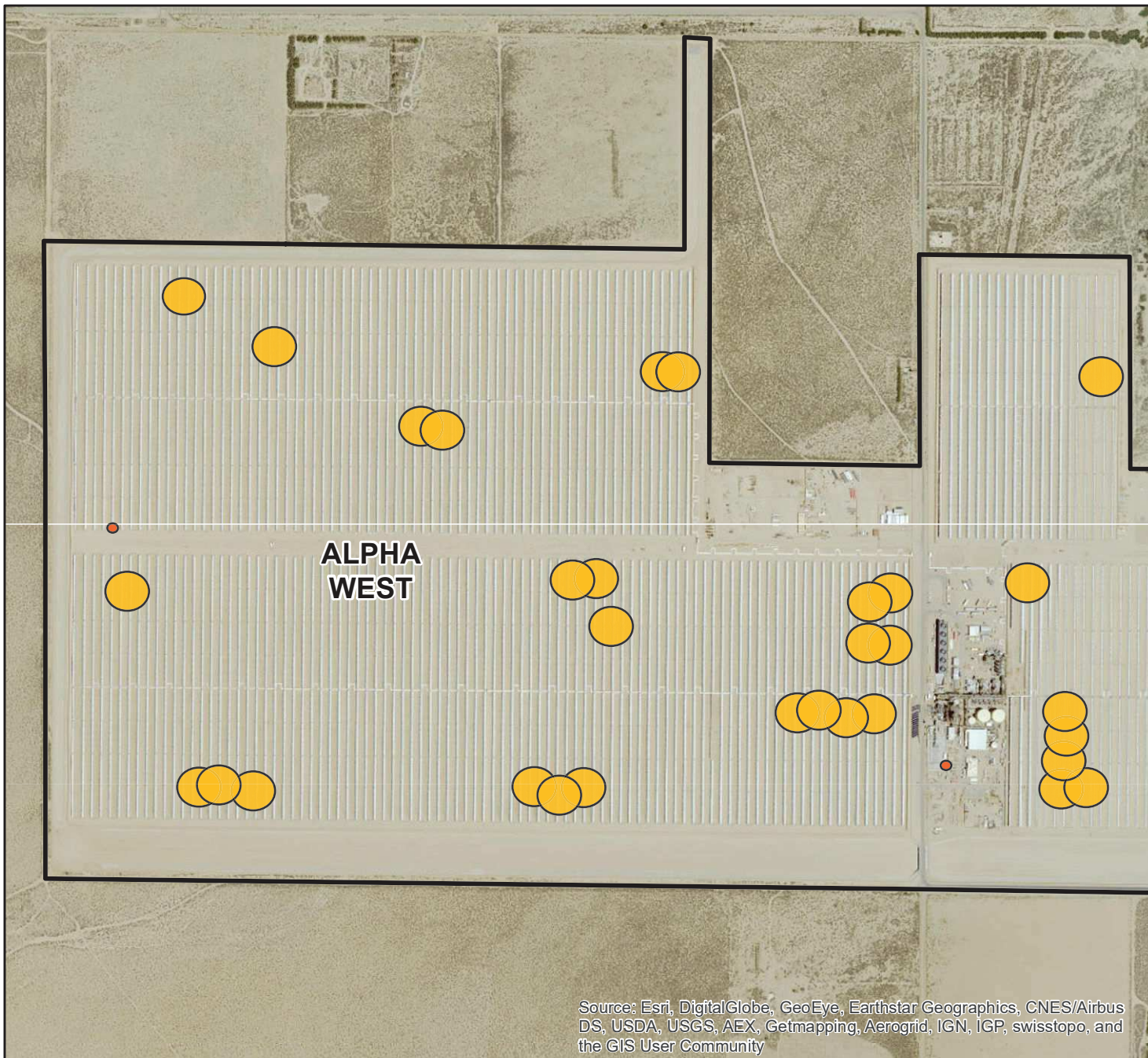
Russian Thistle. *Salsola tragus*



Mediterranean grass *Schismus arabicus*

Attachment 2

Mapped Locations of Invasive and Exotic Plant Species



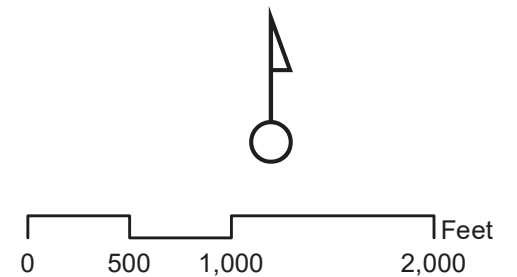
Number of Individual Plants

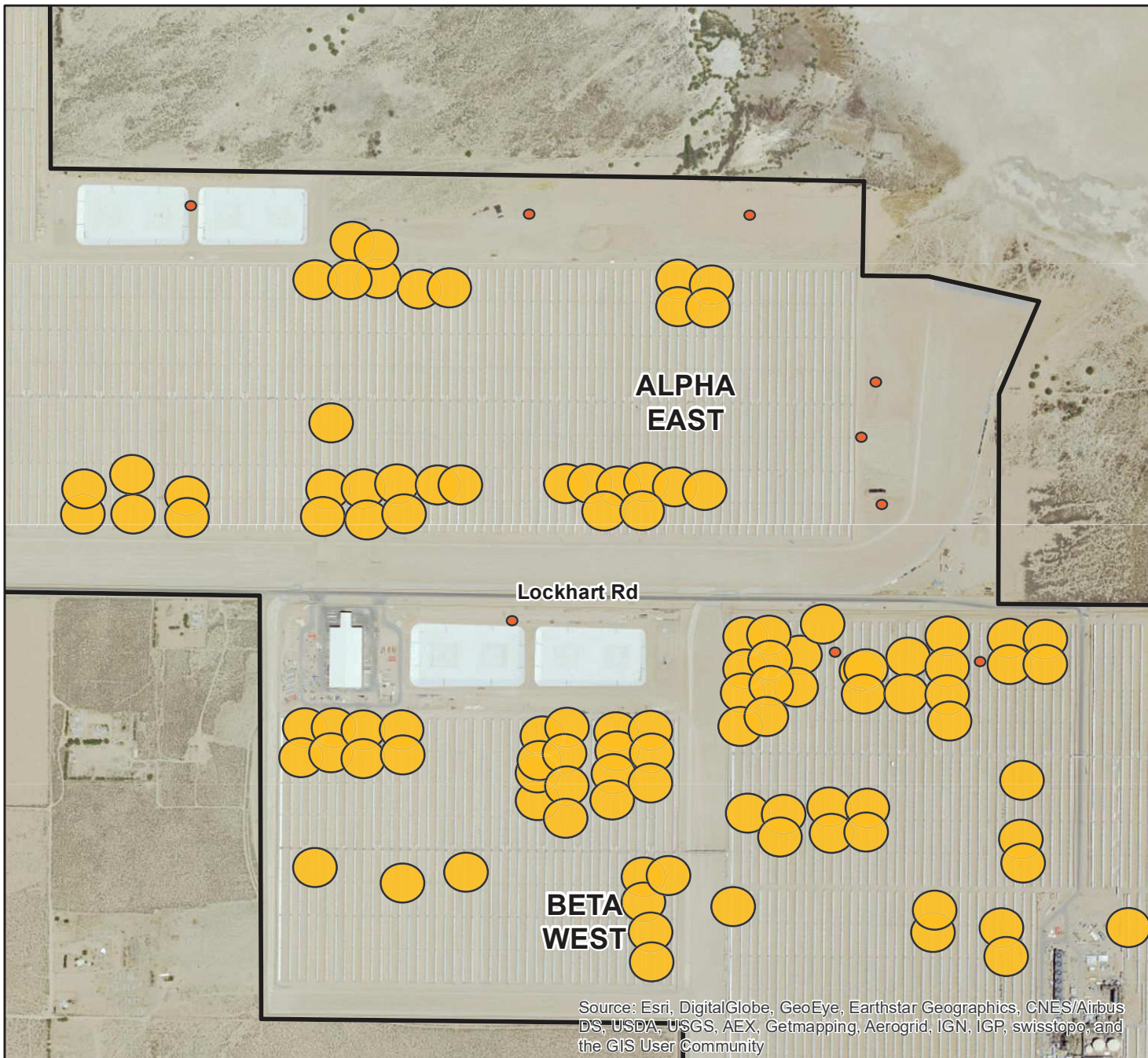
- 1 - 4
- 4 - 13
- 13 - 25
- 25 - 50
- 50 - 150

Exotic Species

- *Russian thistle*
- *Mediterranean grass*

Invasive Species





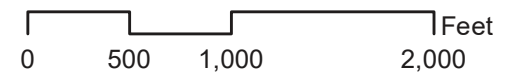
Number of Individual Plants

- 1 - 4
- 4 - 13
- 13 - 25
- 25 - 50
- 50 - 150

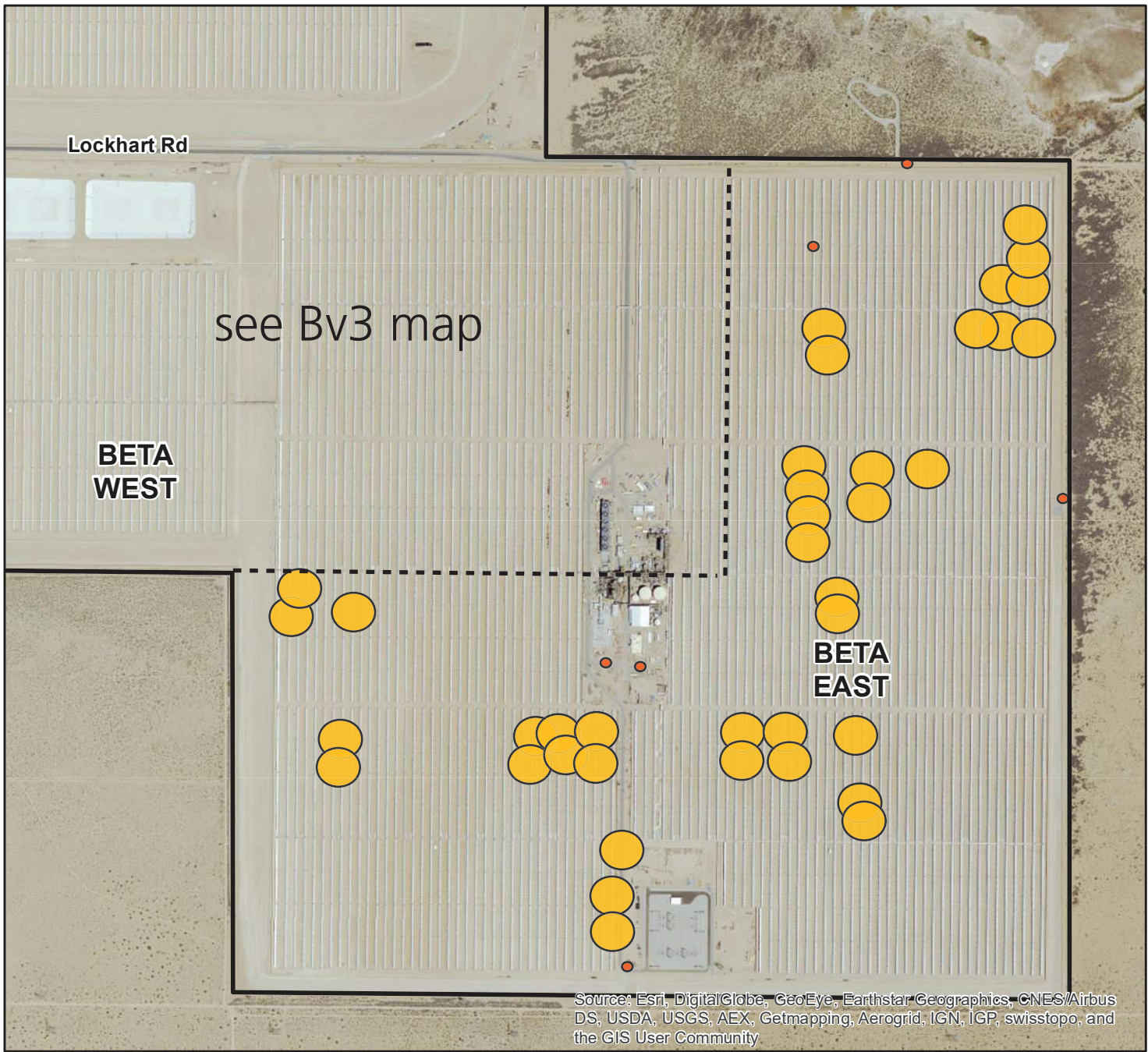
Exotic Species

- *Russian thistle*
- *Mediterranean grass*

Invasive Species



Bv3



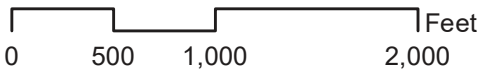
Number of Individual Plants

- 1 - 4
- 4 - 13
- 13 - 25
- 25 - 50
- 50 - 150

Exotic Species

- *Russian thistle*
- *Mediterranean grass*

Invasive Species



Cv3

**BIO-18, Common Raven Monitoring, Management and Control
Post-Construction Report for
Mojave Solar Project
San Bernardino County, California**

Annual Compliance Report 2019. This report represents Year IV of monitoring



Submitted

February 2020

Prepared for:

Mojave Solar LLC

42134 Harper Lake Road
Hinkley, California 92347

Prepared by:

AS Industrial Operations LLC

42134 Harper Lake Road
Hinkley, California 92347

Rowe Ecological Consulting

Phone number: 321-853-5709

sprowe@gmail.com

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1. Introduction

The California Energy Commission (CEC), in Condition of Certification BIO-18, requires the project owner to implement measures to manage its construction site in a manner to control Common Raven (*Corvus corax*) populations. In addition, the project owner must develop and implement a Common Raven Monitoring, Management, and Control Plan. The CEC approved the Common Raven Monitoring, Management, and Control Plan (Raven Plan) on March 26, 2012. The raven plan specifies that the project owner will report annually to the CEC, United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) during the operations phase of the project.

The final BIO-18 raven plan specifies that the Designated Biologist (DB) and/or Biological Monitor (BM) will perform monthly reconnaissance-level surveys for the first five years of the project, unless it is determined that fewer surveys are necessary. In addition, annual breeding season monitoring will be conducted for the life of the project.

This report summarizes BIO-18 raven monitoring and control efforts conducted during 2019. This report represents year four of monitoring.

2. Monitoring Activities

The raven plan specifies that MSP will incorporate project design features (PDFs), project-specific control measures and management practices to ensure that project activities do not create new subsidies that increase the presence or attraction of ravens to the project area. The raven plan specifically calls out the following PDFs and management practices that will be monitored to assess impacts on raven use of the site.

- Evaporation Ponds
- Raven Perching, Roosting, and Nesting Sites
- Ponding Water
- Raven Food Sources from Soil Disturbance and Roadkill
- Human Food and Waste Management

Mojave Solar Project personnel, the DB, and the BM are responsible for monitoring

The DB/BM routinely monitor MSP site conditions to ensure that the PDFs and management practices specified in the raven plan are implemented and carried out and to determine their effectiveness. In addition, MSP personnel are educated on raven control efforts and are requested to notify the DB/BM if they encounter raven nesting activity, roadkill, and human food or waste management issues.

3. Methods

3.1. Point Counts

The raven plan specifies that up to 12 permanent sampling points will be surveyed monthly. Point count locations (7) for the operation phase were submitted to the CEC, USFWS, and CDFW on June 17, 2016 and approved on June 24, 2016 (Figure 1). Point counts are conducted monthly. Each survey point is sampled twice for 15 minutes during the one-day survey effort. All point counts were conducted by DB, Sean Rowe. During each survey the biologist records all ravens observed. Data collected include date, time and weather conditions of survey, as well as time, location, number, age, sex, behavior, distance from the point location and any other pertinent details for each observation.

Breeding Season Monitoring

The raven plan specifies that nest search surveys will be conducted twice a month during the raven breeding season (March through June) for the life of the project. The plan also specifies that if nest building is observed, the DB/BM will actively remove inactive nests. Any existing inactive raven nests will be removed prior to the breeding season.

During March through June the DB systematically surveyed all project structures suitable for raven nesting at least twice monthly. Incidental observations of raven nesting behavior by the DB and BM were also used to focus nest search efforts. MSP personnel were requested to notify the DB if they observed any evidence of raven nesting.

4. Results

4.1. Point Counts

Monthly Common Raven point counts were conducted through the reporting period. A total of 70 Common Raven observations were recorded during systematic point count surveys during this reporting period. Table 1 summarizes dates, station number and number of ravens recorded during each survey. The raw data in excel format are provided in Attachment 1.

Table 1

Summary of Common Raven Point Count Observations				
Date	Station	Number of Ravens Observed	Location Description	Activity Observed
1/28/2019 AM	2,4,7	5	Power block, Transmission tower, vegetation	Perched, Flying
1/28/2019 PM	1,2,5,7	4	Camera Pole, Power Pole	Perched, Flying
2/27/2019 AM	2,7	3	Power block, Transmission Tower	Perched, Flying
2/27/2019 PM	3,5,6	3	Lockhart Road	Perched, Flying
3/25/2019 AM	1,2,5,6	4	Power block structure	Perched, Flying
3/25/2019 PM	1,5,7	5	Substation, SCA	Perched, Flying
4/30/2019 AM	2,3,7	3	Power block, Gen-tie	Perched, Flying
4/30/2019 PM	2,6,7	4	Power block, Power pole, Substation	Perched, Flying
5/31/2019 AM	2,5,7	3	Power pole, Lockhart Road	Perched, Flying
5/31/2019 PM	3	1	SCA	Flying
6/28/2019 AM	2,4	2		Flying
6/28/2019 PM	2,7	2		Flying
7/25/2019 AM	5,6,7	3	Power block, Power Pole	Flying, Perched
7/25/2019 PM	4,6,7	3	Power Pole	Perched, Flying
8/23/2019 AM	2,4	2	Power Pole	Perched, Flying
8/23/2019 PM	-	-	-	No Observations
9/18/2019 AM	2,6	3	Power Pole, Light Pole	Flying, Perched
9/18/2019 PM	1	1		Flying
10/16/2019 AM	4,5	3	Power Pole	Flying, Perched

10/16/2019 PM	6	3	Power Pole	Flying, Perched
11/14/2019 AM	2	1	Power Pole	Perched
11/13/2019 PM	2,6	4	Power Pole	Flying, Perched
12/14/2019 AM	1,3,4,5	6	Power Pole	Flying, Perched
12/13/2019 PM	1,3	2	SCA	Flying, Perched
Total # of observations		70		

5. Nest Monitoring

Nest surveys were conducted during the breeding season (February-June). On March 28, 2019, the DB observed ravens constructing a nest on a cable tray in the Alpha power block. Per Section 3.1.2 of the Raven Plan the DB removed the partially constructed nest on the same day. The ravens attempted to rebuild in the same location and the DB again removed the nesting material on 4/2/19. On 4/09/19 the DB discovered a new nest in different location in the Alpha East power block. The adults appeared to be incubating. Upon inspection on 4/11 the DB found the nest contained four eggs. The BM set up a non-disturbance buffer with a sign that read "No Loitering. Sensitive Environmental Resource Area", flagged off access to the location, and advised MSP staff to notify the DB and/or BM if any work needed be done in the area. The DB monitored the nest periodically through May. At least two young were observed in the nest and at least one fledged successfully (Table 2). The DB surveyed the area surrounding the nest site periodically for sign of desert tortoise predation and found none.

On April 20, 2019, the DB observed a pair of ravens carrying nesting material in the Beta SCA. On April 23, the nest was located in a rack between Beta East and Beta West. The nest was near completion and another, partially constructed nest, apparently abandoned, was located nearby. The DB removed all nesting material (Table 2). No pair abandoned the site and no additional sign of nesting was observed.

Mr. Tim Shields of Hardshell Labs has been working throughout the region using oiling techniques to prevent raven eggs from hatching in an effort to reduce raven predation on desert tortoises in tortoise critical habitat units. MSP and the DB coordinated with Mr. Shields, the CEC and USFWS to obtain permission to apply the oiling technique to raven nests on MSP. Although permission was not obtained in time for the 2019 nesting season, MSP has obtained permission to move forward with the use of this technique on future nests and is prepared to coordinate with Mr. Shields and the agencies on any nests discovered in 2020.

Table 2

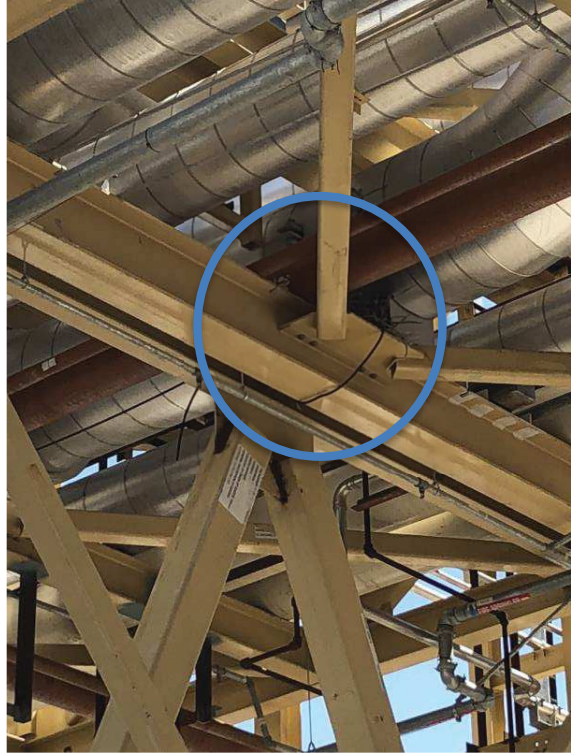
Summary of Common Raven Nesting			
Nest ID	Date Discovered	Location	Outcome
01-A-CORA	3/28/2019	Alpha Power Block	Removed by DB
02-A-CORA	4/09/2019	Alpha Power Block	Successful - Fledged
01-B-CORA	4/23/2019	Beta Wash	Removed by DB

6. Conclusions & Recommendations

BIO-17 point counts, BIO-18 raven point counts and anecdotal observations suggest that the evaporation ponds are not an attractant for ravens. Ravens are rarely noted at the ponds during point counts and when they are observed, they are typically flying through the area or offsite. The Harper Lake wetlands to the east of MSP offer a nearly permanent fresh water source for ravens and ravens are often seen flying in the direction of or away from the wetlands. On-site application of water is minimal as is ponding of water, which is typically associated with winter rain events.

The power block structures offer a nearly unlimited number of perching and nesting sites for ravens and ravens routinely use these structures for perching and nesting (pictures 1 and 2). Efforts to dissuade ravens from nesting in previously used nest sites by covering the nest substructure with wire mesh have proven ineffective as the ravens simply nest somewhere else on the structure. Ravens are persistent in their nesting efforts and are able to rebuilt a nest and lay eggs within a few days if necessary. Continued diligent efforts to ensure prior season's nest are removed and to locate nesting attempts and remove nesting material before commencement of egg laying each season are recommended. MSP is coordinating with researchers and appropriate agencies to try an egg-oiling technique on future nests. This technique has been shown to reduce nesting success and re-nesting of ravens elsewhere in the region.

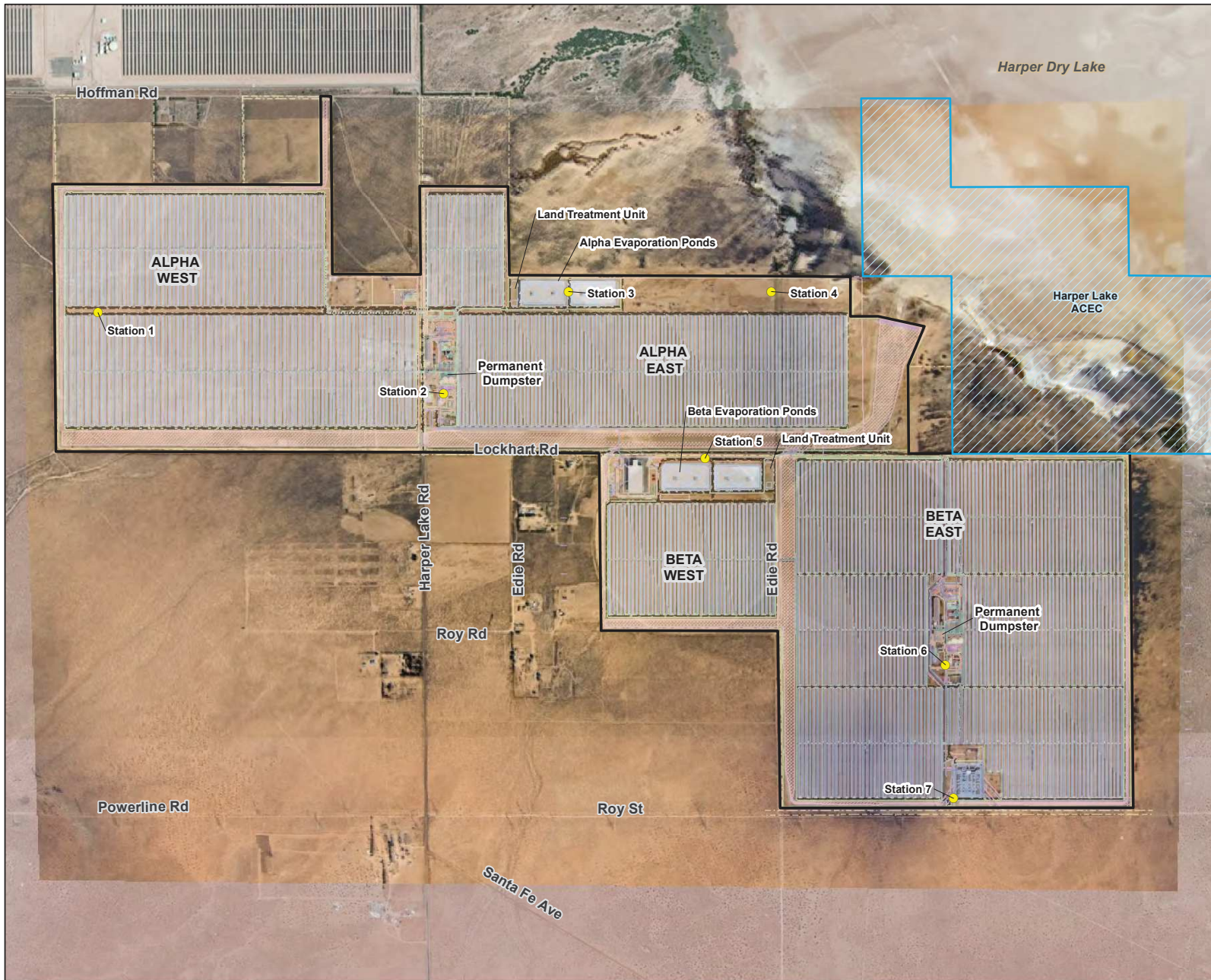
Project associated food sources for ravens include roadkill, primarily along Lockhart Road, and chicken and quail carcasses used for BIO-17 study trials. MSP personnel routinely contact the DB/BM when roadkill is observed in the vicinity of the project. Roadkill is either disposed of or buried so that it is not available to ravens. BIO-17 avian mortality study carcasses provide ample food supply for ravens. Placement of study carcasses ceased in August 2019 and as such will no longer be a food source.



Pictures 1 and 2 Common raven nest in Alpha's piping Rack 2 structure.

**4th Annual Common Raven Monitoring Results
2019**

7. Supplement 1— Common Raven Point Count Stations



- LEGEND**
- Project Boundary
 - Common Raven Station
 - BLM Area of Critical Environmental Concern (ACEC)
 - Harper Lake ACEC

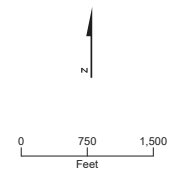


FIGURE 1
Operations Common Raven Permanent Point Count Stations
 Abengoa Mojave Solar Project
 San Bernardino County, California

8. Supplement 2 – Common Raven Fixed-Point Observation Data Sheets

Mojave Solar

Common Raven Fixed Point Observation Data Sheet

Date (mm/dd/yy) 4-30-19

Observer (init.) SK

Start Time 0704

End Time 0719

Obs Pt 4

Visibility: ☉ or Min _____ Max _____ (m)

Page _____ of _____

Wind Direction from (circle one): Calm N NE E SE S ☉ W NW Variable Speed: Low 0 High 5 (km/h)

Precipitation (circle one): ☉ light rain rain snow sleet hail fog other Temp: 62 (°F) Cloud Cover 0 %

Obs #	Time	Sex	Age	# of birds	Activity (circle 1, X others)		Flight Dir (30)	Horizontal Distance (m)		Habitat Type/ Facet Structure	Alt? (ft)	Vib?	Notes
					WA	PE		FL	OT				
1					WA	PE							
					FL	OT							
2					WA	PE							
					FL	OT							
3					WA	PE							
					FL	OT							
4					WA	PE							
					FL	OT							
5					WA	PE							
					FL	OT							
6					WA	PE							
					FL	OT							
7					WA	PE							
					FL	OT							
8					WA	PE							
					FL	OT							
9					WA	PE							
					FL	OT							
10					WA	PE							
					FL	OT							
11					WA	PE							
					FL	OT							
12					WA	PE							
					FL	OT							

Activity Codes: WA-walking on ground, PE-perched above ground, FL-flying, OT-other (please specify)

Habitat Codes: CBS-Creosote Bush Scrub, S2/S3-Sand Dunes/Sand Sheets, DP-Desert Pavement, OT-other (please specify, provide details of Project structure/facility)

OBS. # (Time)	ADDITIONAL NOTES

770
739

Mojave Solar

Common Raven Fixed Point Observation Data Sheet

Date (m/d/yyyy) 10-17-19

Observer (init) SL

Start Time 0734

End Time 0749

Obs Pt 2

Visibility: ☉ Cr Min Max (mi)

Page 1 of 1

Wind Direction from (circle one): ☉ N NE E SE S ☉ W NW Variable

Speed Low Hgt 4 (km/h)

Precipitation (circle one): ☉ light rain rain snow sleet hail fog other

Temp: 55 °F

Cloud Cover 100 %

Obs #	Time	Sex	Age	# of Obs	Activity (circle 1st, X others)	Flight (circle)	Horizontal Distance (m)	Habitat Type/ Farm Structure	Acc. Vis	Notes
1					WA PE					
					FL OT					
2					WA PE					
					FL OT					
3					WA PE					
					FL OT					
4					WA PE					
					FL OT					
6					WA PE					
					FL OT					
8					WA PE					
					FL OT					
7					WA PE					
					FL OT					
9					WA PE					
					FL OT					
10					WA PE					
					FL OT					
11					WA PE					
					FL OT					
12					WA PE					
					FL OT					

Activity Codes: WA-walking on ground, PE-perched above ground, FL-flying, OT-other (please specify)

Habitat Codes: OSS-Oreocelia Bush Scrub, S2/S3-Sand Covered Sand Shrub, DS-Desert Pavement, OT-other (please specify, provide details of Project structure/facility)

OCS #
(Time)

ADDITIONAL NOTES

Mojave Solar

Common Raven Fixed Point Observation Data Sheet

Date (mm/dd/yy) 10/16/19

Observer (init) ER

Start Time 0630 End Time 1845

Obs Pt 7

Visibility: ~~0.5~~ or ~~1.0~~ or ~~2.0~~ or ~~3.0~~ or ~~4.0~~ or ~~5.0~~ or ~~6.0~~ or ~~7.0~~ or ~~8.0~~ or ~~9.0~~ or ~~10.0~~

Page of

Wind Direction (from (circle one)) ~~0~~ N NE E SE S ~~W~~ NW Variable Speed Low High (km/h)

Precipitation (circle one): ~~0~~ light rain rain snow sleet hail fog other Temp: 86 °F Cloud Cover 100 %

Obs #	Time	Sex	Age	# of Birds	Activity (circle 1st, X others)	Flight Cir (dot)	Horizontal Distance (m)	Postural Type/ Feath Structure	Alt (m)	Wind	Notes
1					WA PE FL OT						
2					WA PE FL OT						NO OBSERVATIONS
3					WA PE FL OT						
4					WA PE FL OT						
5					WA PE FL OT						
6					WA PE FL OT						
7					WA PE FL OT						
8					WA PE FL OT						
9					WA PE FL OT						
10					WA PE FL OT						
11					WA PE FL OT						
12					WA PE FL OT						

Activity Codes: WA-walking on ground, PE-petrol above ground, FL-flying, OT-other (please specify)

Habitat Codes: CB-Creosote Bush Scrub, SD/SB-Sand Dunes/Sand Sheets, DP-Coarse Pavement, CT-Terrain (please specify) provide details of Place or Structural Facility

OCS # (Time)

ADDITIONAL NOTES

Mojave Solar

Common Raven Fixed Point Observation Data Sheet

Date (mm/dd/yy) 11-13-19

Observer (init) SN

Start Time 0107

End Time 1626

Obs Pt 3

Visibility: Cr Mf Max (mi) 4

Page 3 of 3

Wind Direction from (circle one): N NE E SE S W NW Variable

Speed Low Hgt 4 (kmh)

Precipitation (circle one): light rain rain snow sleet hail fog other

Temp: 75 °F

Cloud Cover 90 %

Obs #	Time	Sex	Age	# of Obs	Activity (circle 14, Keyhole)	Flight (circle)	Horizontal Distance (m)	Habitat Type/ Feeding Structure	Acc	Wgt	Notes
1					WA PE FL OT						<u>NO OBSERVATIONS</u>
2					WA PE FL OT						
3					WA PE FL OT						
4					WA PE FL OT						
5					WA PE FL OT						
6					WA PE FL OT						
7					WA PE FL OT						
8					WA PE FL OT						
9					WA PE FL OT						
10					WA PE FL OT						
11					WA PE FL OT						
12					WA PE FL OT						

Activity Codes: WA-walking on ground, PE-perched above ground, FL-flying, OT-other (please specify)

Habitat Codes: CRB-Desert Bush Scrub, SC/SB-Sand Dunes Sand Shrub, DP-Desert Pavement, OT-Other (please specify, provide details of Plot or structure (if any))

OBS #
(Time)

ADDITIONAL NOTES

Wojave Solar

Common Raven Fixed Point Observation Data Sheet

Date (mm/dd/yy) 11/13/19 Observer (init) SR Start Time 01553 End Time 1601 Obs Pt. 4
 Visibility: ☉ ☁ ☁ ☁ ☁ ☁ ☁ ☁ ☁ ☁ ☁ ☁ ☁ ☁ ☁ ☁ ☁ ☁ ☁ ☁
 Wind Direction from (circle one): ☁ N NE E SE S ☉ W NW Variable Speed Low High (km/h)
 Precipitation (circle one): ☉ light rain rain snow sleet hail fog other Temp: 75 °F Cloud Cover 90 %

Obs #	Time	Sex	Age	# of birds	Activity (circle 1-8, X others)	Flight Dir(s)	Perch/Distance (m)	Perch Type/ Feeder Structure	Alt	Vis	Notes
1					WA PE						
					FL CT						
2					WA PE						
					FL CT						
3					WA PE						
					FL CT						
4					WA PE						
					FL CT						
5					WA PE						
					FL CT						
6					WA PE						
					FL CT						
7					WA PE						
					FL CT						
8					WA PE						
					FL CT						
9					WA PE						
					FL CT						
10					WA PE						
					FL CT						
11					WA PE						
					FL CT						
12					WA PE						
					FL CT						

NO OBSERVATIONS

Activity Codes: WA-walking on ground PE-perched above ground FL-flying CT-dive (please specify)
 Habitat Codes: CB-creosote bush SB-sage scrub SD/SS-Sand Dunes/Sand Steeps DP-Desert Pavement CT-other (please specify) provide details of Ridge at site (more facility)
 OBS # (Time) ADDITIONAL NOTES

Mojave Solar

Common Raven Fixed Point Observation Data Sheet

Date (m/d/yyyy) 11-13-19

Observer (init.) JA

Start Time 01433 End Time 1448

Obs Pt 6

Visibility CE 0 Miles Max 2 Miles

Page 1 of 1

Wind Direction (from circle one): N NE E SE S W NW Variable | Speed Low 4 High 4 (knots)

Precipitation (Circle one): light rain snow sleet hail fog other | Temp: 77 °F | Cloud Cover 90 %

Obs #	Time	Sex	Age	# of Eggs	Activity (circle 1-4) Key: WA, PE, FL, OT	Flight Cir. (0-1)	Horizontal Distance (m)	Habitat Type/ Perch Structure	Acc. 1'	Acc. 1/2'	Notes
1					WA, PE FL, OT						
2					WA, PE FL, OT						
3					WA, PE FL, OT						
4					WA, PE FL, OT						
5					WA, PE FL, OT						
6					WA, PE FL, OT						
7					WA, PE FL, OT						
8					WA, PE FL, OT						
9					WA, PE FL, OT						
10					WA, PE FL, OT						
11					WA, PE FL, OT						
12					WA, PE FL, OT						

Activity Codes: WA-walking on ground, PE-searches above ground, FL-flying, OT-other (please specify)

Habitat Codes: CB3-Creosote Bush Scrub, SC33-Sand Dunes Sand Shrub, DP-Desert Pavement, OT-other (please specify, provide details of Perch or structure faculty)

Obs #
(Time)

ADDITIONAL NOTES

Mojave Solar

Common Raven Fixed Point Observation Data Sheet

Date (mm/dd/yyyy) 12-13-19

Observer (init) SL

Start Time 0 1726 End Time 1341

Obs Pt. Z

Visibility: ~~Clear~~ or ~~0~~

Min _____ Max _____ (mi)

Page _____ of _____

Wind Direction from (circle one): ~~N~~ N NE E SE S ~~W~~ W NW Variable

Speed Low _____ High _____ (mph)

Precipitation (circle one): ~~0~~ light rain - rain snow s/sat hail fog other

Temp: 64 37

Cloud Cover: 10 1/4

Obs #	Time	Sex	Age	# of birds	Activity (circle 1-4, X others)	Flight Dir (C)	Horizontal Distance (m)	Vertical Distance (m)	Habitat Type/Perch Structure	Adj. Dist.	Notes
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1					WA PE						No OBSERVATION
					FL OT						
2					WA PE						
					FL OT						
3					WA PE						
					FL OT						
4					WA PE						
					FL OT						
5					WA PE						
					FL OT						
6					WA PE						
					FL OT						
7					WA PE						
					FL OT						
8					WA PE						
					FL OT						
9					WA PE						
					FL OT						
10					WA PE						
					FL OT						
11					WA PE						
					FL OT						
12					WA PE						
					FL OT						

Activity Codes: WA-watching on ground PE perched above ground FL-flying OT-other (please specify)
 Habitat Codes: CBS-Creosote Bush Scrub SD/SB-Sand Dunes/Sand Shrub DP-Desert Pavement OT-other (please specify) provide details of Perch structure (if any)

OCS #	ADDITIONAL NOTES
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

