

DOCKETED

Docket Number:	07-AFC-05C
Project Title:	Ivanpah Solar Electric Generating System (Compliance)
TN #:	212098
Document Title:	2015 Annual Compliance Report
Description:	N/A
Filer:	Cenne Jackson
Organization:	NRG Energy Services on behalf of Solar Partners I, II, and VIII, LLCs
Submitter Role:	Applicant
Submission Date:	7/5/2016 11:55:26 AM
Docketed Date:	7/5/2016



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

January 25, 2016

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C)
Conditions of Certification, COMPLIANCE-04 and COMPLIANCE-07; 2015 Annual Compliance Report

Dear Mr. Douglas and Mr. Ahrens,

Pursuant to the requirements of CEC Conditions of Certification, COMPLIANCE-04 and COMPLIANCE-07, the 2015 Annual Compliance Report for Ivanpah Solar Electric Generating System that covers from January 1, 2015 to December 31, 2015 is being submitted on behalf of Solar Partners I, II, and VIII, LLCs for your review.

Please feel free to contact me with any questions or concerns.

Thank you.

A handwritten signature in black ink that reads "William Dusenbury". The signature is written in a cursive style with a large, sweeping "W" and "D".

William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364

CC: Doug Davis, NRG, Ivanpah
Tim Fisk, NRG, Houston, TX
Paul Zavesoff, NRG, Carlsbad, CA
Mitch Samuelian, NRG, Ivanpah
Tim Sisk, NRG
Document Control Specialist – NRG.



Ivanpah Solar Electric Generating System

**California Energy Commission (07-AFC-5C)
Bureau of Land Management
(CACA-48668, 49502, 49503, and 49504)
Condition of Certification COMPLIANCE-07**

2015 Annual Compliance Report

**January 1, 2015 – December 31, 2015
Reporting Period**

**Submitted
January 29, 2016**

**Prepared by: Doug Davis (NRG Energy Services)
on behalf of Solar Partners I, II, and VIII, LLCs**

**100302 Yates Well Road
Nipton, CA 92364**

Table of Contents

1.0 Annual Compliance Report Summary..... Exhibit 1

- Section 1. COMP-07: Summary of Current Project Operating Status and Changes to Facility Operations
- Section 2. COMP-07: Post Certification Changes by the CEC, BLM ROW Grant or Approved POD by BLM
- Section 3. COMP-07: Explanation for any Submittal Deadlines that were missed
- Section 4. COMP-07: List of Filings Submitted and Permits Issued During the Reporting Year.
- Section 5. COMP-07: Projection of Project Compliance Activities Scheduled During the Next Year
- Section 6. COMP-07: Listing of the Year’s Addition to the On-site Compliance File
- Section 7. COMP-07: Evaluation of the On-site Contingency Plan for Unplanned Facility Closure
- Section 8. COMP-07: Listing of Complaints, Notices of Violations, Official Warnings and Citations Received During the Year
- Section 9. COMP-07: Table 1 – List of Conditions of Certifications that were Satisfied during the Reporting Period

2.0 COMP-07: Ivanpah SEGS Compliance Matrix..... Exhibit 2

3.0 COMP-07: COCs Required to be Submitted with the Annual Compliance Report

- Air Quality (AQ-01/AQ-27, AQ-02/AQ-28, AQ-03/AQ-29, AQ-12/AQ-34, and AQSC-06)..... Exhibit 3
 - Appendix A: AQ-01/AQ-27_ Project Owner Statement Pertaining to Equipment Non-Compliant Operations
 - Appendix B: AQ-02/AQ-28_ Project Owner Statement Pertaining to Equipment Non-Compliant Operations
 - Appendix C: AQ-03/AQ-29_ Project Owner Statement Pertaining to Use of Natural Gas as Fuel for the Boilers
 - Appendix D: AQ-12/AQ-34_Boiler Gas Consumption Record
 - Appendix E: AQSC-06_ Dedicated Off-road Vehicles for Mirror Washing Activities Plan

- Appendix F: AQSC-07_Site Operations Dust Control Annual Report
- Appendix G: BIO-02, BIO-04, BIO-10, BIO-11, BIO-18, BIO-21_2014 Annual Biological Report
 - Appendix H: BIO-13_ Weed Management Plan Annual Report
 - Appendix I: BIO-14_ 2014 Revegetation Annual Monitoring Report
 - Appendix J: BIO-17_Desert Tortoise Compensatory Mitigation
 - Appendix K: BIO-18_ Special Status Plants Annual Report
 - Appendix L: BIO-18_ Special Status Plants Natural Gas Line Monitoring Report
 - Appendix L-1: Mojave Milkweed Land Acquisition (Hudgen’s Parcel) Annual Report
 - Appendix M: BIO-19_SCBS Nelson’s Bighorn Sheep Annual Report
 - Appendix N: BIO-20_Streambed Impact Minimization Measure
- Appendix O: HAZ-01_ List of Hazardous Materials Contained in the Facility
 - Appendix P: HAZ-05_ Operations Security Plan Background Investigations for All Employees and Contractors
- Appendix Q: LAND-03/REC-01_ Solar/Ecological Interpretive Center
- Appendix R: S&W-01_ Storm Water BMP Monitoring and Maintenance Activities Report
 - Appendix S: S&W-02_ Storm Water Pollution Prevention Plan Annual Report
 - Appendix T: S&W-04_ Annual Groundwater Consumption Record
 - Appendix U: S&W-05_ Storm Water Damage Monitoring and Response Plan Annual Report

- Traffic & Transportation (TRANS-03)..... Exhibit 8
 - Appendix V: TRANS-03_ Heliostat Positioning Plan Update
- Transmission Line Safety & Nuisance (TLSN-03)..... Exhibit 9
 - Appendix W: TLSN-03_ Summary of Inspection Results and Fire Prevention Activities Along the Right-of-Way
- Visual Resources (VIS-01, VIS-02)..... Exhibit 10
 - Appendix X: VIS-01_ Surface Treatment of Project Structures and Buildings Status Report
 - Appendix Y: VIS-02_ Golf Course Landscape Screening Maintenance Activities
- Waste Management (WASTE-06)..... Exhibit 11
 - Appendix Z: WASTE-06_ Waste Management Annual Report

Exhibit 1

Annual Compliance Report Summary

2015 Annual Compliance Report

Section 1

Summary of Current Operating Status and Changes to Facility Operations

(COMP-07 Item 2)



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

January 7, 2016

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C) Summary of Current Project Operating Status to fulfill California Energy Commission Conditions of Certification, COMPLIANCE-07 Item 2

Dear Mr. Douglas and Mr. Ahrens,

Pursuant to the requirements of Conditions of Certification COMPLIANCE-07 Item 5 of the Commission's approval of the Ivanpah Solar Electric Generating System, we are providing the following summary of current project operating status during the reporting period as a requirement in the Annual Compliance Report:

- ***Ivanpah has completed all punch list items in the fourth quarter of 2014 and the facility received the Certificate of Occupancy on January 22, 2015.***
- ***Ivanpah has been operational for two (2) years and there have been no OSHA recordable or Notice of Violations issued to the project, nor there has been a spill.***
- ***Natural gas consumption for each power block is below the annual limit of 525 mmscf. Ivanpah 1 used 404 mmscf, Ivanpah 2 used 399 mmscf, and Ivanpah 3 used 418 mmscf.***
- ***Ivanpah used 58% of the allotted 100 acre-feet of ground water extraction/drawn from Well #1 and Well #2, of which, approximately 82% was used by the three (3) units for electricity generation. About 70% of the water usage in the Common Area in December 2015 was used for dust control during the soil stabilization and drainage rehabilitation along Colosseum Road between Unit 1 and Unit 2.***
- ***All three units are stable and able to attain and sustain full load.***
- ***The solar field software (SFINCS) has been upgraded in 2015 to improve plant performance and to reduce glint and glare issues.***
- ***Ivanpah had requested and received approval from CEC on November 19, 2015 to amend and update several Conditions of Certifications related to equipment descriptions and operation requirements.***



NRG Ivanpah Solar Electric Generating System
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Ph: 702-815-2021 Fax: 702-815-2030

- ***There were no significant changes to the facility operations during the reporting period.***

Please feel free to contact me with any questions.

Thank you.

A handwritten signature in black ink that reads "William Dusenbury". The signature is written in a cursive, flowing style.

William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364

CC: Doug Davis, NRG
Tim Sisk, NRG
Tim Fisk, NRG
Mitch Samuelian, NRG
Document Control Specialist – NRG.

Section 2

**Post Certification Changes by the
CEC, BLM ROW Grants or Approved
POD by BLM
(COMP-07 Item 4)**

LIST OF POST CERTIFICATION CHANGES BY CEC OR BLM ROW GRANT OR APPROVED POD BY BLM

In accordance with COC COMP-07 Item 4, the following include cumulative listing of all post-certification changes by the Energy Commission or changes to the BLM ROW grant or approved POD by BLM, or cleared by BLM's Authorized Officer and the CPM

PTA No.	Description	Submittal Date	Approval Date
1	Petition To Amend - Equipment Change to Reduce Emissions and modify several Air Quality Conditions of certifications. The Petition to Amend modified, deleted and added several Air Quality Conditions of Certification. The modifications proposed in the petition include several equipment changes to make the project operations more effective and efficient.	3/8/2012	2/13/2015
2	Petition To Amend - Condition of Certification BIO-20. The modifications proposed in the petition would amend Condition of Certification BIO-20 to allow the owner to pay in-lieu fees to the California Department of Fish and Game (DFG) for acquisition and/or restoration of habitat under DFG's Advanced Mitigation Land Acquisition Grants program.	11/26/2012	2/13/2013
3	Petition To Amend - CEC Condition of Certification AQ-12, AQ-34 and AQSC-10. The modifications proposed in the petition would allow ISEGS to increase the maximum allowable annual fuel usage limit for boilers from 328 to 525 million standard cubic feet (MMSCF) per power block. The requested change would require modification of the annual fuel use limits in Air Quality Conditions of Certification AQ-12 and AQ-34. Additionally, the petition requests conforming changes to Air Quality Condition of Certification AQ-SC10, which limits total annual natural gas fuel heat input to each of the three ISEGS power plants to no more than 5 percent of the total heat input from the sun. According to the petition, the proposed revisions to condition AQSC-10 are necessary to make the condition consistent with the proposed changes to conditions AQ-12 and AQ-34.	3/26/2014	9/15/2014
4	Petition To Amend - to modify several Air Quality Conditions of Certifications. The modifications proposed include minor alterations to the ISEGS Air Quality Conditions of Certification to revise the description of engines used for emergency generators and fire pumps to match the existing engines. The Mojave Desert Air Quality Management District (District or MDAQMD) has reviewed the proposed changes and has incorporated the revised descriptions into district permit language. The purpose of this application is to update the equipment descriptions contained in the Air Quality Conditions of Certification to reflect the as-built engine information. Additionally, the District has made minor changes to permit conditions, consolidating redundant conditions, eliminating obsolete conditions, and making minor simplifications and corrections - those changes are reflected in the amended Decision.	3/17/2015	11/19/2015

ISEGS LIST OF BLM ROW GRANTS

Right-of-Way Grant No.	LOCATION	DATE ISSUED	TOTAL ACREAGE
CACA 049502	Construction Logistics Area	07-Oct-2010	245.89
CACA 049504	Ivanpah 1	07-Oct-2010	914.03
CACA 048668	Ivanpah 2	07-Oct-2010	1,076.51
CACA 049503	Ivanpah 3	07-Oct-2010	1,234.93
CACA 049502 Amendment #1	CLA - Modify certain boundaries of the CLA and shared ancillary facilities (Amend. #1)	14-Mar-2011	29.70
CACA 049502 Amendment #2	CLA - Construction of a Tortoise Pen along I-15 (Amend. #2)	09-Mar-2012	9.70
CACA 049502 Amendment #3	CLA - Installation of additional tortoise exclusion fence, two tortoise guards on Yates Well Rd from PVGC to I-15 and 3 tortoise guards along Colosseum Rd. (Amend. #3)	02-May-2012	5.40
CACA 049502 Amendment #4	CLA - Installation of Automated Data Logging Weather Stations (Amend. #4)	26-Mar-2013	0.10
CACA 049502 Amendment #5	CLA - Continued operation, maintain and decommissioning of the heliostat assembly building (HAB) (Amend. #5)	16-Apr-2013	22.50
CACA 055108*	Solar/Ecological Interpretive Center	25-Jul-2014	4.59
CACA 055666**	50 Miles of Desert Tortoise Exclusion Fencing along Interstate 15 and Interstate 40	02-Sep-2015	99.71

NOTES:

- * This ROW Grant is a Land-Use permit issued by BLM which allows the use of public land to construct the Solar/Ecological Interpretive Center.
- ** Right-of-Way Grant for the right to install, monitor and maintain desert tortoise exclusion fence on public lands managed by the Bureau of Land Management.

DOCKETED

Docket Number:	07-AFC-05C
Project Title:	Ivanpah Solar Electric Generating System (Compliance)
TN #:	206686
Document Title:	Order Approving a Petition to Amend to Update Equipment Descriptions
Description:	N/A
Filer:	Tiffani Winter
Organization:	California Energy Commission
Submitter Role:	Energy Commission
Submission Date:	11/19/2015 9:29:12 AM
Docketed Date:	11/19/2015

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
 SACRAMENTO, CA 95814-5512
 www.energy.ca.gov



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

In the Matter of:

**IVANPAH SOLAR ELECTRIC
 GENERATING SYSTEM**

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Docket No. 07-AFC-5C

Order No. 15-1112-2

**SOLAR PARTNERS I, LLC; SOLAR
 PARTNERS II, LLC; SOLAR
 PARTNERS VIII, LLC**

**ORDER APPROVING a Petition to Amend
 to update equipment descriptions**

On March 17, 2015, Solar Partners I, LLC; Solar Partners II, LLC; and Solar Partners VIII, LLC (Solar Partners) filed a petition with the California Energy Commission (Energy Commission) requesting to amend the Final Decision for the Ivanpah Solar Electric Generating System project (ISEGS) to revise the description of engines used for emergency generators and fire pumps to match the installed engines.

The project owners are proposing minor alterations to the ISEGS **Air Quality** Conditions of Certification to revise the description of engines used for emergency generators and fire pumps to match the existing engines. The Mojave Desert Air Quality Management District (District or MDAQMD) has reviewed the proposed changes and has incorporated the revised descriptions into district permit language.

Now that the engines have been installed, additional information is available. The purpose of this application is to update the equipment descriptions contained in the Air Quality Conditions of Certification to reflect the as-built engine information. Additionally, the District has made minor changes to permit conditions, consolidating redundant conditions, eliminating obsolete conditions, and making minor simplifications and corrections – those changes are reflected in the amended Decision.

The proposed modifications would not change any project mitigation measures designed to reduce potential air quality impacts from the project to less-than-significant levels. No cumulative adverse impacts would occur as a result of the proposed changes to the ISEGS project.

STAFF RECOMMENDATION

Energy Commission staff reviewed the petition, finds that it complies with the requirements of Title 20, section 1769 (a) of the California Code of Regulations, and recommends approval of Solar Partner's petition to amend the ISEGS Project and amend related Air Quality Conditions of Certification.

ENERGY COMMISSION FINDINGS

Based on staff's analysis, the Energy Commission concludes that the proposed modification(s) will not result in any significant impacts to public health and safety, or to the environment. The Energy Commission finds that:

- The petition meets all the filing criteria of Title 20, section 1769 (a), of the California Code of Regulations, concerning post-certification project modifications;
- The modification will not change the findings in the Energy Commission's Final Decision, pursuant to Title 20, section 1755, of the California Code of Regulations;
- The project will remain in compliance with all applicable laws, ordinances, regulations, and standards, subject to the provisions of Public Resources Code, section 25525;
- The modification will be beneficial to the public and the project owner because it would allow the project owner to optimize operations and maximize solar electricity output; and
- There has been a substantial change in circumstances since the Energy Commission certification, justifying the modifications, and the modifications are based on information that was not available to the parties prior to Energy Commission certification in that the experience of actual operation has demonstrated how to make the best use of the equipment.

CONCLUSION AND ORDER

The California Energy Commission hereby adopts staff's recommendations and approves the changes to the Commission Decision for the ISEGS Project (see attached conditions of certification). New language is shown as **bold and underlined**, and deleted language is shown in ~~strikethrough~~.

IT IS SO ORDERED.

CERTIFICATION

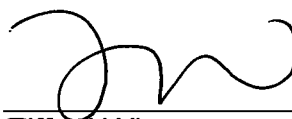
The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of an Order duly and regularly adopted at a meeting of the California Energy Commission held on November 12, 2015.

AYE: Weisenmiller, Douglas, McAllister, Hochschild, Scott

NAY: None

ABSENT: None

ABSTAIN: None

A handwritten signature in black ink, appearing to be 'Tiffani Winter', written over a horizontal line.

Tiffani Winter,
Secretariat

AMENDED AND DELETED CONDITIONS OF CERTIFICATION

DISTRICT CONDITIONS OF CERTIFICATION

THE FOLLOWING CONDITIONS ARE APPLICABLE TO IVANPAH 1, 2, AND 3 (THREE (3)) AUXILIARY BOILERS, MDAQMD APPLICATION NUMBERS/PERMIT NUMBERS: 00009311 (B010375), 00009314 (B010376), AND 00009320 (B010377); ~~EACH CONSISTING OF:~~

Rentech D-type water tube boilers, each equipped with Todd-Coen Ultra Low-NOx Burners rated at a maximum heat input of 249 MMBTU/hr, and flue gas recirculation (FGR or EGR), fueled exclusively on utility grade natural gas. Equipment shall use 242,500 cu-ft/hr of fuel and provide 175,000 lb/hr of steam. Each boiler is equipped with a stack that is 130 feet high and 60 inches in diameter.

AQ-3 This boiler shall use only natural gas as fuel and shall be equipped with a meter measuring fuel consumption, ~~in standard cubic feet.~~

Verification: As part of the Annual Compliance Report (**COMPLIANCE-7**), the project owner shall include proofs that only pipeline quality or Public Utility Commission regulated natural gas are used for the boilers.

AQ-5 Not later than 180 days after initial startup, the owner/operator shall perform an initial compliance test on this boiler in accordance with the District Compliance Test Procedural Manual. This test shall demonstrate that this equipment does not exceed the following emission maximums:

Pollutant	ppmvd	Lb/MMBtu	Lb/hr	
*NOx	9.0	0.011	2.7	(Per USEPA Methods <u>7E and 19 and 20</u>)
SO2	1.7	0.003	0.7	
*CO	25.0	0.018	<u>4.65</u>	(Per USEPA Method 10)
VOC	12.6	0.005	1.3	(Per USEPA Methods 25A and 18)
PM10	n/a	0.007	1.7	(Per USEPA Methods <u>5 or 201A, and 202</u>)

*corrected to 3% oxygen, on a dry basis, averaged over one hour

Opacity shall be conducted per Method 9; Flue gas flow rate shall be quantified in dscf per USEPA Methods 1 through 5. As indicated in the District Compliance Manual, the District may approve alternatives, modifications and /or deviations to the methods specified in this condition.

Verification: The project owner shall notify the District and the CPM within fifteen (15) working days before the execution of the compliance test required in this condition. The test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

AQ-6 The project owner shall perform annual compliance tests in accordance with the District Compliance Test Procedural Manual. Prior to performing these annual tests, the boiler shall be tuned in accord with the manufacturer's specified tune-up procedure, by a qualified technician. Subsequent tests shall demonstrate that this equipment does not exceed the following emission maximums:

Pollutant	ppmvd	Lb/MMBtu	Lb/hr	
*NOx	9.0	0.011	2.7	(Per USEPA Methods <u>7E and 19 and 20</u>)
SO2	1.7	0.003	0.7	
*CO	25.0	0.018	<u>4.65</u>	(Per USEPA Method 10)
VOC	12.6	0.005	1.3	(Per USEPA Methods 25A and 18)
PM10	n/a	0.007	1.7	(Per USEPA Methods <u>5 or 201A, and 202</u>)

*corrected to 3% oxygen, on a dry basis, averaged over one hour

Opacity shall be conducted per Method 9; Flue gas flow rate shall be quantified in dscf per USEPA Methods 1 through 5.

Verification: The project owner shall notify the District and the CPM within fifteen (15) working days before the execution of the compliance test required in this condition. The test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

AQ-11 Delete The owner/operator shall comply with all applicable recordkeeping and reporting requirements of NSPS-Db.

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.

THE FOLLOWING CONDITIONS ARE¹ APPLICABLE TO IVANPAH 1 I, 2 II, AND 3 III EMERGENCY FIRE PUMPS, MDAQMD APPLICATION NUMBERS/PERMIT NUMBERS; 00009312 (E010380), 00009315 (E010378), AND 00009319 (E010384):

E010380: Year of Manufacture 2010, Tier III, ~~One Clarke~~**John Deere**, Diesel fired internal combustion engine, Model No. ~~JU6H-UF62~~**6068HFC48**, and Serial number ~~the~~**PE6068L185615**, After Cooled, Direct Injected, Turbo Charged, producing ~~240~~**316** bhp with 6 cylinders at ~~2,600~~**2,350** rpm (or equiv.) while consuming a maximum of ~~10~~**12.2** gal/hr. This equipment powers a pump.

E010378: Year of Manufacture 2010, Tier III, One John Deere, Diesel fired internal combustion engine, Model No. 6068HFC48, and Serial number PE6068L117510, After Cooled, Direct Injected, Turbo Charged, producing 316 bhp with 6 cylinders at 2,350 rpm (or equiv.) while consuming a maximum of 12.2 gal/hr. This equipment powers a pump.

E010384: Year of Manufacture 2012, Tier III, One John Deere, Diesel fired internal combustion engine, Model No. 6068HFC48, and Serial number PE6068L228483, After Cooled, Direct Injected, Turbo Charged, producing 316 bhp with 6 cylinders at 2,350 rpm (or equiv.) while consuming a maximum of 12.2 gal/hr. This equipment powers a pump.

Condition **AQ-16** applies separately to the three emergency fire pump engines unless otherwise specified.

AQ-16 This unit shall be limited to use for emergency purposes power, ~~defined as in response to a fire or when commercially available power has been interrupted.~~ In addition, this unit shall be operated no more than ~~0.5~~ **1.0** hours per day for a total of 50 hours per year for testing and maintenance. The 50 hour limit can be

¹ Verb tense for this condition and the similar ones that follow is correct because only the changed conditions are shown here. There is more than one condition in the full set of conditions.

exceeded when the emergency fire pump assembly is driven directly by a stationary diesel fueled CI engine when operated per and in accord with the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 1998 edition. This requirement includes usage during emergencies. [[District Rule 1302(C)(2)(a) and Rule 1304 (D)(1)(a)] and 17 CCR 93115.3(n)] [Hours allowed by federal regulation 40 CFR 60.42(f) streamlined out as these permit requirements are more stringent than the federal regulatory requirements.]

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or Energy Commission staff.

THE FOLLOWING CONDITIONS ARE APPLICABLE TO IVANPAH 1 I, 2 II, AND 3 III (THREE - 3) EMERGENCY GENERATORS, MDAQMD APPLICATION NUMBERS/PERMIT NUMBERS; 00009313 (E010381), 00009316 (E010379), AND 00009317 (E010382), EACH CONSISTING OF:

Equipment Description:

Year of Manufacture 2010, Tier II, ~~One~~ **Three** Caterpillar, Diesel fired internal combustion engines, Model No. 3512C, and Serial Nos. ~~the~~ **EBG00874, EBG00875, and EBG00864**, After Cooled, Direct Injected, Turbo Charged, producing ~~2250~~ **2,206** bhp with 16 cylinders at 1,800 rpm while consuming a maximum of 105 gal/hr. This equipment powers a Generator.

Condition **AQ-24** applies separately to the three emergency fire pump generators engines unless otherwise specified.

AQ-24 This unit shall be limited to use for emergency power, defined as in response to a fire or when commercially available power has been interrupted. In addition, this unit shall be operated no more than ~~0.5~~ **1.0** hours per day for a total of 50 hours per year [NSR and 17 CCR 93115] [Hours allowed by 60.42(f) streamlined out.]

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or Energy Commission staff.

THE FOLLOWING CONDITIONS ARE APPLICABLE TO COMMON AREA EMERGENCY GENERATOR, MDAQMD APPLICATION NUMBER/PERMIT NUMBER; MD10000061 (E011546), CONSISTING OF:

Equipment Description:

Year of Manufacture ~~2010~~ **2011**, Tier III, Located in the Common Logistics Area; One ~~TBD~~ **Caterpillar**, Diesel fired internal combustion engine Model No. ~~TBDC~~ **9** and Serial No. ~~TBDS~~ **9L03837**, producing ~~333~~ **398** bhp with ~~TBD~~ **6** cylinders at ~~TBD~~ **1,800** rpm while consuming a maximum of ~~TBD~~ **19.4** gm/bhp-hr.

Condition **AQ-39** applies separately to the three emergency fire pump generator engines unless otherwise specified.

AQ-39 This unit shall be limited to use for emergency power, defined as in response to a fire or when commercially available power has been interrupted. In addition, this unit shall be operated no more than ~~0.5~~ **1.0** hrs per day for a total of 50 hours per year for testing and maintenance. [NSR and 17 CCR 93115] [Hours allowed by 60.42(f) streamlined out.]

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or Energy Commission staff.

THE FOLLOWING CONDITIONS ARE APPLICABLE TO THE COMMON AREA EMERGENCY FIRE PUMP, MDAQMD APPLICATION NUMBER/PERMIT NUMBER; MD10000062 (E011547), CONSISTING OF:

Equipment Description:

Year of Manufacture ~~TBD~~**2011**, Tier III; Located in the Common Logistics Area; One ~~Clarke (or equiv.)~~ **John Deere**, Diesel fired internal combustion engine Model No. **4045HFC28A,B,C,D** and Serial No. ~~td~~**PE4045L162845**, Direct Injected, producing ~~106.5~~**156.9** bhp with 4 cylinders at 1760 rpm while consuming a maximum of ~~8.59~~ gal/hr.

Condition **AQ-45** applies separately to the three emergency fire pump engines unless otherwise specified.

AQ-45 This unit shall be limited to use for emergency purposes power, ~~defined as in response to a fire or when commercially available power has been interrupted.~~ In addition, this unit shall be operated no more than ~~0.5~~ **1.0** hrs per day for a total of 50 hours per year for testing and maintenance. The 50 hour limit can be exceeded when the emergency fire pump assembly is driven directly by a stationary diesel fueled CI engine operated per and in accord with the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 1998 edition. This requirement includes usage during emergencies. [[District Rule 1302(C)(2)(a) and Rule 1304 (D)(1)(a)] and 17 CCR 93115.3(n)] [Hours allowed by federal regulation 40 CFR 60.42(f) streamlined out as these permit requirements are more stringent than the federal regulatory requirements.]

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or Energy Commission staff.

DOCKETED

Docket Number:	07-AFC-05C
Project Title:	Ivanpah Solar Electric Generating System (Compliance)
TN #:	206897
Document Title:	Notice of Decision by the California Energy Commission
Description:	Notice
Filer:	Raquel Rodriguez
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	12/8/2015 1:53:17 PM
Docketed Date:	12/8/2015

NOTICE OF DECISION BY THE CALIFORNIA ENERGY COMMISSION

To: California Resources Agency
1416 9th Street, Room 1311
Sacramento, CA 95814

From: California Energy Commission
1516 9th Street, MS-2000
Sacramento, CA 95814

Subject: Filing of Notice of Decision in compliance with Public Resources Code Section 21080.5 and Title 20, California Code of Regulations, Section 1768

Project Name: Ivanpah Solar Electrical Generating System Project

Energy Commission Docket Number: 07-AFC-5C

Energy Commission Contact Person: Joseph Douglas **Phone #:** (916) 653-4677

Project Location: Near the Nevada border in San Bernardino County, California

Project Description: Ivanpah Solar Electrical Generating System project is a 398-megawatt solar tower power plant.

Modification Description: A Petition to Amend was submitted by Solar Partners LLC, to modify several Air Quality Conditions of Certification. These modifications are necessary to allow equipment changes to make the project operations more effective and efficient.

On November 12, 2015, the California Energy Commission approved the above-described project changes pursuant to a regulatory program certified by the California Secretary of Resources under Section 21080.5 of the California Public Resources Code.

1. With mitigation, the project will not have a significant effect on the environment;
2. Mitigation measures were made conditions of approval of the project;
3. The project is in compliance with all laws, ordinances, regulations and standards (LORS); and
4. A statement of Overriding Considerations was not adopted for the project.

The Commission docket files containing the final Commission Decision and other information regarding the project are available to the public at: California Energy Commission, 1516 9th Street, Sacramento, California, 95814. This and other information regarding the project is also available on the Commission's web site located at <http://www.energy.ca.gov/sitingcases/ivanpah/index.html>

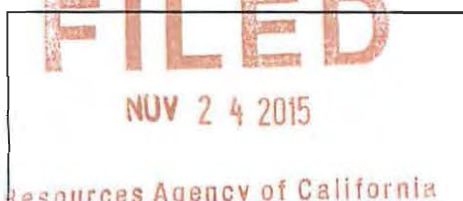

Signature

November 20, 2015
Date

Compliance Project Manager
Title

Date received for filing:

Resources:



CEC Dockets:



Section 3

**Explanation for Any Submittal
Deadlines That Were Missed
(COMP-07 Item 5)**



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

January 7, 2016

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C) Explanation for any Submittal Deadlines that were Missed to fulfill California Energy Commission Conditions of Certification, COMPLIANCE 07 Item 5

Dear Mr. Douglas and Mr. Ahrens,

In accordance with the requirements of Conditions of Certification COMPLIANCE-07 Item 5 of the Commission's approval of the Ivanpah Solar Electric Generating System, we are providing the following statement as a requirement in the Annual Compliance Report:

There are no submission deadlines that were missed on record during the reporting period.


William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364

CC: Doug Davis, NRG
Tim Sisk, NRG
Mitch Samuelian, NRG
Document Control Specialist – NRG.

Section 4

**List of Filings Submitted and
Permits Issued During the
Reporting Year
(COMP-07 Item 6)**

IVANPAH SOLAR ELECTRIC GENERATING FACILITY LIST OF FILINGS & ACTIVE PERMITS

In accordance with COMP-07 Item 6, the following are listings of filings submitted to, or permits issued by other governmental agencies during the year.

LIST OF FILINGS SUBMITTED DURING THE REPORTING PERIOD

TN #	DESCRIPTION	FILING DATE	SUBMITTED TO
203569	Avian & Bat Technical Advisory Committee December 2014 Meeting Notes	1/28/2015	California Energy Commission
203905	Petition to Amend Air Quality Conditions of Certification to update equipment descriptions and minor changes to permit conditions consistent with changes approved by the District.	3/17/2015	California Energy Commission
204256	Avian & Bat Monitoring Plan - 2014 Fall Report	4/20/2015	California Energy Commission
204257	Avian & Bat Technical Advisory Committee (TAC) March 6, 2015 Meeting Notes	4/20/2015	California Energy Commission
204258	Avian & Bat Monitoring Plan - 2013-2014 Annual Report (Revised)	4/20/2015	California Energy Commission
205744	Avian & Bat Monitoring Plan - 2013-2014 Winter Report	8/14/2015	California Energy Commission
205745	Avian & Bat Technical Advisory Committee Meeting: July 2, 2015 - Meeting Notes	8/14/2015	California Energy Commission
207104	Avian & Bat Monitoring Plan - Spring 2015	12/23/2015	California Energy Commission
207105	Avian & Bat Monitoring Plan Revision 13 - November 2015	12/23/2015	California Energy Commission

LIST OF PERMITS ISSUED BY OTHER GOVERNMENTAL AGENCIES

PERMIT NO.	PERMIT NAME	EXPIRATION DATE	ISSUING AGENCY
PT0030636	Potable Water Permit	31-Jan-2016	San Bernardino County - Department of Public Health
07-AFC-05	Certificate of Occupancy	N/A	Department of Building Inspection, Bureau Veritas
FA0014691	Certified Unified Program Agency (CUPA)	28-Feb-2016	San Bernardino County - Fire Protection District (Hazardous Materials Division)
070714550071W	Hazardous Materials Certificate of Registration	30-Jun-2016	U. S. Department of Transportation - Pipeline and Hazardous Materials Safety Administration
CAS 000001	NPDES Industrial General Permit for Storm Water Discharges	30-Jun-2020	State Water Resources Control Board
CAS000001	Storm Water NOI/Annual Fee	02-Feb-2016	State Water Resources Control Board
	DTSC ANNUAL MANIFEST VERIFICATION FEES	31-Jul-2016	USEPA
B010375	Ivanpah 1 Permit to Operate (PTO) No. B010375 - Auxiliary Boiler	31-Oct-2016	Mojave Desert Air Quality Management District
B011544	Ivanpah 1 Permit to Operate (PTO) No. B011544 - Nighttime Preservation Boiler	31-Oct-2016	Mojave Desert Air Quality Management District
E010378	Ivanpah 1 Permit to Operate (PTO) No. E010378 - Diesel IC Engine Fire Pump	31-Oct-2016	Mojave Desert Air Quality Management District
E010379	Ivanpah 1 Permit to Operate (PTO) No. E010379 - Diesel IC Engine - Emergency Generator	31-Oct-2016	Mojave Desert Air Quality Management District
B010376	Ivanpah 2 Permit to Operate (PTO) No. B010376 - Auxiliary Boiler	31-Oct-2016	Mojave Desert Air Quality Management District
B011572	Ivanpah 2 Permit to Operate (PTO) No. B011572 - Nighttime Preservation Boiler	31-Oct-2016	Mojave Desert Air Quality Management District
E010380	Ivanpah 2 Permit to Operate (PTO) No. E010380 - Diesel IC Engine Fire Pump	31-Oct-2016	Mojave Desert Air Quality Management District
E010381	Ivanpah 2 Permit to Operate (PTO) No. E010381 - Diesel IC Engine - Emergency Generator	31-Oct-2016	Mojave Desert Air Quality Management District
B010377	Ivanpah 3 Permit to Operate (PTO) No. B010377 - Auxiliary Boiler)	31-Oct-2016	Mojave Desert Air Quality Management District
B011573	Ivanpah 3 Permit to Operate (PTO) No. B011573 - Nighttime Preservation Boiler	31-Oct-2016	Mojave Desert Air Quality Management District
E010382	Ivanpah 3 Permit to Operate (PTO) No. E010382 - Diesel IC Engine - Emergency Generator	31-Oct-2016	Mojave Desert Air Quality Management District
E010384	Ivanpah 3 Permit to Operate (PTO) No. E010384 - Diesel IC Engine Fire Pump	31-Oct-2016	Mojave Desert Air Quality Management District
E011547	Ivanpah Common Area Permit to Operate (PTO) No. E011547 - Diesel IC Engine Fire Pump	31-Oct-2016	Mojave Desert Air Quality Management District
E011546	Ivanpah Common Area Permit to Operate (PTO) No. E011546 - Diesel IC Engine Emergency Gen	31-Oct-2016	Mojave Desert Air Quality Management District

Section 5

**Projection of Project Compliance
Activities Scheduled During the
Next Year – 2016
(COMP-07 Item 7)**

Ivanpah SEGS Operations Projection of Project Compliance Activities for 2016

In accordance with COMP-07 Item 7, the following is the projection of project compliance activities scheduled during the next year, 2016

TECHNICAL AREA	COC No.	DESCRIPTION	FREQUENCY	TENTATIVE COMPLIANCE DATE	REQUIRED SUBMITTAL DATE
Air Quality Auxilliary Boilers	AQ-01	Equipment operation to be conducted in compliance with all data and specifications submitted with the application. Any non-compliant operations shall be listed in the Annual Compliance Report (COMPLIANCE-7).	Daily	31-Dec-2016	To be submitted with the annual compliance report
Air Quality Auxilliary Boilers	AQ-02	To operate equipment in strict accord with the recommendations of the manufacturer or supplier and/or sound engineering principles and consistent with all information submitted with the application. As part of the Annual Compliance Report (COMPLIANCE-7), the project owner shall include information on the date, time, and duration of any violation of this permit condition.	Daily	31-Dec-2016	Violation of this permit condition shall be reported in the annual compliance test report
Air Quality Auxilliary Boilers	AQ-03	Only natural gas shall be used for the boilers and equipped with a meter measuring fuel consumption. To include proofs that only pipeline quality, or Public Utility Commission regulated gas are used for the boilers. As part of the Annual Compliance Report (COMPLIANCE-7), the project owner shall include proofs that only pipeline quality, or Public Utility Commission regulated natural gas are used for the boilers.	Daily	31-Dec-2016	To be submitted with the annual compliance report
Air Quality Auxilliary Boilers	AQ-04	To maintain log for boilers for 5 years which shall be provided to the District, state or federal personnel upon request.	Monthly	31-Dec-2016	To be submitted with the annual compliance report
Air Quality Auxilliary Boilers	AQ-06	Notify MDAQMD and CEC before execution of annual compliance tests	Annually	06-Mar-2016	30 days prior scheduled performance tests
Air Quality Auxilliary Boilers	AQ-06	Perform boiler tune-up in accord with manufacturer's specified tune-up procedure.	Annually	20-Mar-2016	
Air Quality Auxilliary Boilers	AQ-06	Perform annual compliance tests for auxiliary boilers Ivanpah 1, Ivanpah 2 and Ivanpah 3.	Annually	15-Apr-2016	
Air Quality Auxilliary Boilers	AQ-06	Submit compliance test results to MDAQMD and CEC.	Annually	14-Jun-2016	60 days from the date of the tests
Air Quality Auxilliary Boilers	AQ-07	This boiler (Boilers 1, 2, and 3) shall be operated in compliance with all applicable requirements of 40 CFR 60 Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Db).	Monthly	31-Dec-2016	
Air Quality Auxilliary Boilers	AQ-08	Records of fuel supplier certifications of fuel sulfur content shall be maintained to demonstrate compliance with the sulfur dioxide and particulate matter emission limits.	Monthly	31-Dec-2016	

TECHNICAL AREA	COC No.	DESCRIPTION	FREQUENCY	TENTATIVE COMPLIANCE DATE	REQUIRED SUBMITTAL DATE
Air Quality Auxilliary Boilers	AQ-09	The owner/operator shall continuously monitor and record fuel flow rate and flue gas oxygen level.	Monthly	31-Dec-2016	
Air Quality Auxilliary Boilers	AQ-12	Monitor and record fuel consumption for each auxiliary boiler and nighttime preservation boiler.	Monthly	31-Dec-2016	To be submitted with the annual compliance report
Air Quality Fire Pumps	AQ-14	To ensure that the units shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15ppm) on a weight per weight basis.	Monthly	31-Dec-2016	
Air Quality Fire Pumps	AQ-16	To monitor operation of this equipment will not exceed 1.0 hour per day for a total of 50 hours per year for testing and maintenance.	Monthly	31-Dec-2016	
Air Quality Fire Pumps	AQ-17	To maintain operations log for these equipment.	Monthly	31-Dec-2016	
Air Quality Emergency Generators	AQ-21	To ensure that the units shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15ppm) on a weight per weight basis.	Monthly	31-Dec-2016	
Air Quality Emergency Generators	AQ-24	To monitor operation of this equipment will not exceed 1.0 hour per day for a total of 50 hours per year for testing and maintenance.	Monthly	31-Dec-2016	
Air Quality Emergency Generators	AQ-25	To maintain operations log for these equipment.	Monthly	31-Dec-2016	
Air Quality - Nighttime Preservation Boilers	AQ-27	Equipment operation to be conducted in compliance with all data and specifications submitted with the application.	Daily	31-Dec-2016	To be submitted with the annual compliance report
Air Quality - Nighttime Preservation Boilers	AQ-28	To operate equipment in strict accord with the recommendations of the manufacturer or supplier and/or sound engineering principles and consistent with all information submitted with the application.	Daily	31-Dec-2016	Violation of this permit condition shall be reported in the annual compliance test report
Air Quality - Nighttime Preservation Boilers	AQ-29	Only natural gas shall be used for the boilers and equipped with a meter measuring fuel consumption. To include proofs that only pipeline quality, or Public Utility Commission regulated gas are used for the boilers.	Daily	31-Dec-2016	To be submitted with the annual compliance report
Air Quality - Nighttime Preservation Boilers	AQ-30	To maintain log for boilers for 5 years.	Monthly	31-Dec-2016	To be submitted with the annual compliance report
Air Quality - Nighttime Preservation Boilers	AQ-31	Perform boiler tune-up in accord with manufacturer's specified tune-up procedure.	Annually	20-Mar-2016	
Air Quality - Nighttime Preservation Boilers	AQ-32	To maintain records of fuel supplier sulfur certification.	Monthly	31-Dec-2016	

TECHNICAL AREA	COC No.	DESCRIPTION	FREQUENCY	TENTATIVE COMPLIANCE DATE	REQUIRED SUBMITTAL DATE
Air Quality - Nighttime Preservation Boilers	AQ-33	The owner/operator shall continuously monitor and record fuel 'flow rate.	Monthly	31-Dec-2016	
Air Quality - Nighttime Preservation Boilers	AQ-34	Monitor and record fuel consumption for each auxiliary boiler and nighttime preservation boiler.	Monthly	31-Dec-2016	To be submitted with the annual compliance report
Air Quality - Common Area Emergency Generator	AQ-36	To ensure that the units shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15ppm) on a weight per weight basis.	Monthly	31-Dec-2016	
Air Quality - Common Area Emergency Generator	AQ-39	To monitor operation of this equipment will not exceed 1.0 hour per day for a total of 50 hours per year for testing and maintenance.	Monthly	31-Dec-2016	
Air Quality - Common Area Emergency Generator	AQ-40	To maintain operations log for these equipment.	Monthly	31-Dec-2016	
Air Quality - Common Area Emergency Fire Pump	AQ-43	To ensure that the units shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15ppm) on a weight per weight basis.	Monthly	31-Dec-2016	
Air Quality - Common Area Emergency Fire Pump	AQ-45	To monitor operation of this equipment will not exceed 1.0 hour per day for a total of 50 hours per year for testing and maintenance.	Monthly	31-Dec-2016	
Air Quality - Common Area Emergency Fire Pump	AQ-46	To maintain operations log for these equipment.	Monthly	31-Dec-2016	
Air Quality General	AQSC-7	Recordkeeping and annual reporting in association with the Dust Control Plan	Annually	31-Dec-2016	To be submitted with the annual compliance report
Biological Resources	BIO-02	<u>Designated Biologist Duties:</u> The Designated Biologist shall submit record summaries in the Annual Compliance Report unless his/her duties cease, as approved by BLM's Authorized Officer and the CPM.	Annually	31-Dec-2016	To be submitted with the annual compliance report
Biological Resources	BIO-04	<u>Biological Monitor Duties:</u> The Designated Biologist shall submit record summaries in the Annual Compliance Report unless his/her duties cease, as approved by BLM's Authorized Officer and the CPM.	Annually	31-Dec-2016	To be submitted with the annual compliance report

TECHNICAL AREA	COC No.	DESCRIPTION	FREQUENCY	TENTATIVE COMPLIANCE DATE	REQUIRED SUBMITTAL DATE
Biological Resources	BIO-06	<u>Worker Environmental Awareness Program (WEAP):</u> The worker education program shall be repeated annually for permanent employees, and shall be routinely administered within one week of arrival to any new construction personnel, foremen, contractors, subcontractors, and other personnel potentially working within the project area.	Annually	31-Dec-2016	To be submitted with the annual compliance report
Biological Resources	BIO-06	During project operation, signed statements for operational personnel shall be kept on file for six months following the termination of an individual's employment.	Annually	31-Dec-2016	To be submitted with the annual compliance report
Biological Resources	BIO-10	<u>Desert Tortoise Compliance Verification:</u> 6. No later than January 31 of every year the ISEGS facility remains in operation, provide BLM's Authorized Officer and the CPM an annual Listed Species Status Report	Annually	31-Jan-2016	To be submitted with the annual compliance report
Biological Resources	BIO-11	<u>Impact Avoidance and Minimization Measures:</u> The Designated Biologist shall report summarizing all available data (species of carcass, date and location collected, and cause of death) describing bird and other carcasses collected within the project site each year.	Annually	31-Dec-2016	To be submitted with the annual compliance report
Biological Resources	BIO-12	<u>Raven Management Plan:</u> Submit annual monitoring reports to CDFG, BLM, and USFWS no later than December 31st of each raven management year.	Annually	31-Dec-2016	
Biological Resources	BIO-13	Submit Weed Management Plan Annual Report in the Annual Compliance Report.	Annually	31-Dec-2016	To be submitted with the annual compliance report
Biological Resources	BIO-14	Submit Revegetation Annual Monitoring Report in the Annual Compliance Report.	Annually	31-Dec-2016	To be submitted with the annual compliance report
Biological Resources	BIO-17	Submit the results of the annual inspection of fencing and rehabilitated routes; a summary of fence repairs and maintenance of reclaimed routes completed during the year; and recommendations and a cost estimate for repairs and maintenance activities needed for the upcoming year. The reports will be submitted in the 2016 Annual Compliance Report.	Annually	31-Dec-2016	To be submitted with the annual compliance report
Biological Resources	BIO-18	<u>Special Status Plant Impact Avoidance and Minimization:</u> On January 31st of each year following construction, the owner's qualified botanist shall submit a report, including CNDDDB field survey forms, describing results of off-site plant surveys for Mojave milkweed and Rusby's desert-mallow to the BLM's authorized officer, the CPM, CDFG, and CNDDDB.	Annually	31-Dec-2016	To be submitted with the annual compliance report
Biological Resources	BIO-18	During operation, the DB shall submit record summaries in the Annual Compliance Report for a period not < 10 years for the Gas Pipeline Revegetation Plan, and for the life of the project for the SSPP and Monitoring Plan, and the SSP Remedial Action Plan, including funding for the seed storage.	Annually	31-Dec-2016	To be submitted with the annual compliance report

TECHNICAL AREA	COC No.	DESCRIPTION	FREQUENCY	TENTATIVE COMPLIANCE DATE	REQUIRED SUBMITTAL DATE
Biological Resources	BIO-19	<u>Nelson's Bighorn Sheep:</u> The SCBC will provide the project owner an annual report no later than January 15th of each year, and the project owner will provide to the CEC and BLM the annual report no later than January 31st of each year.	Annually	15-Jan-2016	To be submitted with the annual compliance report
Biological Resources	BIO-20	Streambed Impact Minimization and Compensation Measure change of condition report. To be submitted in the Annual Compliance Report	As Needed	31-Dec-2016	
Biological Resources	BIO-21	<u>Avian and Bat Monitoring and Management Plan:</u> For one year following the beginning of power plant operation, the Designated Biologist shall submit quarterly reports to the CPM, CDFG, and USFWS. describing the results of monitoring.	Quarterly		
Biological Resources	BIO-21	<u>Avian and Bat Monitoring and Management Plan:</u> Following the completion of the fourth quarter of monitoring, the Designated Biologist shall prepare an Annual Report that summarizes the year's data, analyzes any Project-related bird fatalities or injuries detected, and provides recommendations for future monitoring and any adaptive management actions needed.	Annually	31-Dec-2016	
Biological Resources	BIO-21	<u>Avian and Bat Monitoring and Management Plan:</u> No later than January 31st of every year the Annual Report shall be provided to the CPM, CDFG, and USFWS. Quarterly reporting shall continue until the CPM, in consultation with CDFG and USFWS determine whether more years of monitoring are needed, and whether mitigation and adaptive management measures are necessary.	Annually	31-Dec-2016	
Biological Resources	BIO-21	<u>Avian and Bat Monitoring and Management Plan:</u> After two years of data collection, the project owner or contractor shall prepare a report that describes the study design and monitoring results of the Avian and Bat Monitoring and Management Plan. The report shall be submitted to the CPM, CDFG and USFWS no later than the third year after onset of Project operation.	Annually	31-Dec-2016	
Biological Resources	BIO-23 (BLM)	The applicant shall conduct visual biweekly surveys for bird and bat mortalities throughout the project site. In addition to the photo documentation of bird mortalities (Item #14 in BIO-11), mortalities and injuries to bats and other wildlife shall be photo documented. Additionally, data would document the species affected and any overt signs of injury resulting in death (e.g., scorched feathers). This information would be compiled and provided to the BLM on quarterly intervals for the first three years, then annually thereafter, unless otherwise requested by the BLM.	Quarterly for the first 3 years; then, annually thereafter.		
Compliance Conditions	COMP-04	During Operations, an annual compliance report must be submitted.	Annually	31-Jan-2016	
Compliance Conditions	COMP-07	<u>Annual Compliance Report:</u> After construction of each power plant is complete or when a power plant goes into commercial operation, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports.	Annually	31-Jan-2016	
Compliance Conditions	COMP-09	<u>Annual Facility Compliance Fee:</u> Pursuant to the provisions of Section 25806(b) of the Public Resources Code, the project owner is required to pay the Energy Commission an annual compliance fee	Annually	01-Jul-2016	

TECHNICAL AREA	COC No.	DESCRIPTION	FREQUENCY	TENTATIVE COMPLIANCE DATE	REQUIRED SUBMITTAL DATE
Hazardous Materials	HAZ-1	Provide to BLM's Authorized Officer and the CPM in the Annual Compliance Report, a list of hazardous materials contained at the facility.	Annually	31-Jan-2016	To be submitted with the annual compliance report
Hazardous Materials	HAZ-5	In the Annual Compliance Report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed, and updated certification statements are appended to the Operations Security Plan. In the Annual Compliance Report, the project owner shall include a statement that the Operations Security Plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.	Annually	31-Dec-2016	To be submitted with the annual compliance report
Land Use	LAND-3	<u>Solar / Ecological Interpretive Center:</u> In each Annual Compliance Report, the project owner shall provide a summary of estimated public use of the Solar / Ecological Interpretive Center and summarize any issues associated with operating and maintenance activities.	Annually	31-Dec-2016	To be submitted with the annual compliance report - 1/31/2016.
Recreation	REC-1	<u>Solar / Ecological Interpretive Center:</u> After commercial operation and in each Annual Compliance Report for the life of the ISEGS project, the project owner shall provide a summary of estimated public utilization of the Solar / Ecological Interpretive Center and summarize any issues associated with operating and maintenance activities.	Annually	31-Dec-2016	To be submitted with the annual compliance report - 1/31/2016.
Soil & Water	S&W-1	<u>Drainage Erosion and Sediment Control Plan:</u> c. Once operational, the project owner shall provide in the annual compliance report information on the results of storm water BMP monitoring and maintenance activities.	Annually	31-Dec-2016	To be submitted with the annual compliance report
Soil & Water	S&W-2	<u>In accordance with Storm Water Pollution Prevention Plan (SWPPP) Sect. 6.4:</u> • <u>Annual Comprehensive Site Compliance Evaluation:</u> The Environmental Specialist, Environmental Health and Safety Officer, or the Environmental Specialist III, with the assistance of SWPPT team and/or designated contractor, shall perform one comprehensive site evaluation or ACSCE during each report period (July 1-June 30). The evaluation shall be conducted a minimum of 8 months from the previous ACSCE and shall include review of all records, a visual inspection of all potential pollutant sources, review and evaluation of all BMPs, revision of the SWPPP as necessary to revise existing or include additional BMPs, visual inspection of all equipment needed to implement the SWPPP, and preparation of a report of the evaluation. Dischargers shall implement SWPPP revisions resulting from the ACSCE within 90 days of the evaluation.	Annually	01-Jul-2016	

TECHNICAL AREA	COC No.	DESCRIPTION	FREQUENCY	TENTATIVE COMPLIANCE DATE	REQUIRED SUBMITTAL DATE
Soil & Water	S&W-2	<p><u>In accordance with Storm Water Pollution Prevention Plan (SWPPP) Sect. 7:</u> Records of all storm water monitoring information and copies of all reports required by this Permit will be retained for a period of at least 5 years from the date of the sample, observation, measurement or report. The following records will be kept:</p> <ul style="list-style-type: none"> • SWPPP, • Quarterly Visual Observations – NSWDS, • Monthly Visual Observations – Storm Water Discharges, • Annual Visual Observations – ACSCE, • ACSCE Summary Report, • Personnel Training, • Significant Spills and Leaks, and • Documentation of Dangerous Weather Preventing Inspection or Sampling (Flood conditions, high winds, lightning, dust storms). 	Monthly	31-Dec-2016	
Soil & Water	S&W-2	<p><u>In accordance with Storm Water Pollution Prevention Plan (SWPPP) Sect. 7.1:</u> The Permit requires an annual report to be submitted to the Lahontan Regional Water Quality Control Board (LRWQCB) on an annual basis. The annual report is to encompass the period of July 1 through June 30 and is due July 1 of each year. A copy of the report must be retained in the SWPPP with for a minimum of 5 years from the date of submittal. The annual report shall include:</p>	Annually	01-Jul-2016	
Soil & Water	S&W-3	<p><u>Project Groundwater Wells:</u> 8. Annual Monitoring Reports will be submitted which include Quarterly monitoring data as described in the Approved Groundwater Monitoring and Management Plan. The First Annual Report will be a Baseline Report which includes the Well Network and level monitoring report and plan</p>	Annually	31-Dec-2016	
Soil & Water	S&W-4	<p><u>Operations Water Consumption:</u> The project owner shall prepare an annual summary, which will include daily usage, monthly range and monthly average of daily water usage in gallons per day, and total water used on a monthly and annual basis in acre-feet. For years subsequent to the initial year of operation, the annual summary will also include the yearly range and yearly average water use by source. For calculating the total water use, the term “year” will correspond to the date established for the annual compliance report submittal.</p>	Annually	31-Dec-2016	
Soil & Water	S&W-5	<p><u>Storm Water Damage Monitoring and Response Plan:</u> The project owner shall prepare an annual summary of the number of heliostats failed, cause of the failure, and cleanup and mitigation performed for each failed heliostat.</p>	Annually	31-Dec-2016	

TECHNICAL AREA	COC No.	DESCRIPTION	FREQUENCY	TENTATIVE COMPLIANCE DATE	REQUIRED SUBMITTAL DATE
Soil & Water	S&W-6	<u>Groundwater Monitoring and Reporting Plan:</u> 5. After project construction and during project operations, the project owner shall submit the monitoring data annually to both BLM's Authorized Office and the CPM. The summary shall document water level monitoring methods, the water level data, water level plots, and a comparison between pre- and post-project start-up waterlevel trends. The report shall also include a summary of actual water use conditions, monthly climatic information (temperature and rainfall), and a comparison and assessment of water level data relative to the assumptions and spatial levels simulated by the applicant's groundwater model.	Annually	15-Aug-2016	
Traffic & Transport.	TRANS-3	<u>HelioStat Positioning Plan:</u> 4. The monitoring plan should be coordinated with the FAA, U.S. Department of the Navy, CalTrans, CHP, and Clark County Department of Aviation in relation to the proposed Southern Nevada Supplemental Airport and be updated on an annual basis for the first 5 years, and at 2-year intervals thereafter for the life of the project.	Annually	10-Dec-2016	
Transm. Lines	TLSN-3	During the first 5 years of plant operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the right-of-way and provide such summaries in the Annual Compliance Report to be provided to BLM's Authorized Officer and the CPM.	Annually	31-Dec-2016	To be submitted with the annual compliance report
Visual Resources	VIS-1	<u>Surface Treatment of Project Structures and Buildings:</u> The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report.	Annually	31-Dec-2016	To be submitted with the annual compliance report
Visual Resources	VIS-2	<u>Landscape Screening of Golf Course:</u> The project owner shall report landscape maintenance activities, including replacement of dead or dying vegetation, for the previous year of operation in each Annual Compliance Report.	Annually	31-Dec-2016	To be submitted with the annual compliance report
Waste Mgmt	WASTE-6	<u>Operations Waste Management Plan:</u> The project owner shall also document in each Annual Compliance Report the actual volume of wastes generated and the waste management methods used during the year; provide a comparison of the actual waste generation and management methods used to those proposed in the original Operation Waste Management Plan; and update the Operation Waste Management Plan as necessary to address current waste generation and management practices.	Annually	31-Dec-2016	To be submitted with the annual compliance report
Waste Mgmt	WASTE-7	Ensure that all spills or releases of hazardous substances, hazardous materials, or hazardous waste are reported, cleaned up, and remediated as necessary, in accordance with all applicable federal, state, and local requirements.	As Needed		
Worker Safety & FP	WS-2	Implement Project Operations and Maintenance Safety Program	Monthly		

TECHNICAL AREA	COC No.	DESCRIPTION	FREQUENCY	TENTATIVE COMPLIANCE DATE	REQUIRED SUBMITTAL DATE
Worker Safety & FP	WS-5	<p>The project owner shall ensure that a portable automatic external defibrillator (AED) is located on site during construction and operations and shall implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functioning at all times.</p> <p>During operations, all power plant employees shall be trained in its use.</p>	Annually		

Section 6

**Listing of the years Addition to the
Onsite Compliance File
(COMP-07 Item 8)**



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

January 4, 2016

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C) Listing of the Year's Additions to the On-site Compliance File, to fulfill California Energy Commission Conditions of Certification, COMPLIANCE 07 Item 8

Dear Mr. Douglas and Mr. Ahrens,

Pursuant to the requirements of Conditions of Certification COMPLIANCE-07 Item 8 of the Commission's approval of the Ivanpah Solar Electric Generating System, a listing of the year's additions to the on-site compliance file must be provided in the Annual Compliance Report.

The following are the additions to the on-site compliance file on record during the reporting period

- ***MDAQMD Permits To Operate (changed from Authority To Construct to Permit To Operate on March 2, 2015)***
- ***Domestic Water Supply Permit No. 14-3601181-001 from San Bernardino County Department of Public Health***
- ***Greenhouse Gas Monitoring Plan and Annual Reports***
- ***Storm Water Damage Monitoring and Response Plan and Annual Reports***
- ***Industrial General Permit for Water Discharges, effective on July 1, 2015 (NPDES No. CAS000001)***
- ***Spill Prevention Control and Countermeasure Plan (SPCC)***
- ***Annual Compliance Test Reports***
- ***Annual Compliance Reports***

A list of all ISEGS compliance files is attached for your reference.



NRG Ivanpah Solar Electric Generating System
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Please feel free to contact me with any questions.

Thank you.

A handwritten signature in black ink that reads "William Dusenbury". The signature is written in a cursive style with a long, sweeping tail on the final letter.

William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364

CC: Doug Davis, NRG
Tim Sisk, NRG
Mitch Samuelian, NRG
Document Control Specialist – NRG.

ISEGS LIST COMPLIANCE FILES

In accordance with COC COMP-07 Item 8, the Ivanpah SEGS on-site compliance files are maintained at the project site Administration Building. At the end of the reporting period, the onsite compliance files contain the following information:

Ref. No.	Description	Document Date	Revision Date
07-AFC-5C	CEC Final Decision	9/22/2010	2/13/2013; 9/15/2014; 11/19/2015
07-AFC-5C	CEC Notice to Proceed	10/8/2010	
CACA 48668, 49502, 49503, 49504	BLM Record of Decision	10/7/2010	
CACA 48668, 49502, 49503, 49504	BLM ROW Notices to Proceed	Varies	
81440-2010-F- 0096	USFWS Biological Opinion and any Revisions	6/10/2011	
CACA 48668, 49502, 49503, 49504	All approved BLM Verification Change Request Forms	Varies	
Biological Opinion	Animal Husbandry Plan	11/1/2010	11/3/2012
AQSC-02	AQCMP-Air Quality Compliance and Mitigation Plan	7/14/2010	1/27/2011
BIO-02, 04, 10, 11, 18, 20 &21	Annual Biological Summary Reports	Varies	
BIO-06	WEAP Training Booklet, Training Sheets, and Training Log	6/24/2010	
BIO-07	BRMIMP- Biological Resources Mitigation, Implementation and Monitoring Plan	7/15/2010	Rev. 1: 10/6/2010; Rev. 2: 4/11/2012
BIO-09	Desert Tortoise Translocation Plan	3/19/2009	Rev. 1: 3/2009; Rev. 2C: 9/23/2010; Rev. 3: 10/5/2010; Rev. 4:: 10/13/2010; Rev. 5.1: 10/2011
BIO-09	BIO-9 Compliance Status Reports-included in MCRs	11/29/2010	
BIO-12	Raven Management Plan	July 2010	Rev. 3: 10/4/2010; Rev. 4: 10/17/2012
BIO-13/WS-06	Weed Management Plan	7/12/2010	10/6/2010
BIO-14/BIO-18 /COMP-11	Closure, Rehabilitation, and Revegetation Plan - Includes Gas Pipeline Revegetation and Monitoring Plan		Rev. 3: 7/13/2010; Rev. 4: 9/29/2010
BIO-16	Burrowing Owl Mitigation and Monitoring Plan,	July 2010	Rev. 1: 10/4/2010; Rev. 2: 10/15/2010
BIO-18	Special-status Plant Protection and Monitoring Plan		Rev. 1: 10/26/2010
BIO-18	Special-status Plant Remedial Action Plan	11/9/2010	
BIO-18	Special-Status Plants Annual Reports	January 2012	3/7/2012
BIO-19	Big Horn Sheep Mitigation Plan	1/20/2012	9/27/2012
BIO-21	Avian and Bat Monitoring and Management Plan	September 2010	Rev. 1: 10/21/2010; Rev. 2: 5/23/2011; Rev. 3: 2/24/2012; Rev. 10:: 10/31/2013; Rev. 11: 11/5/2013; Rev. 12: 11/12/2013
COMP-06	All Monthly Compliance Reports	Varies	
	DOE Annual Summary Environmental Compliance Report	Varies	

Ref. No.	Description	Document Date	Revision Date
COMP-12/ COMP-13	On-Site Contingency Plan for Unplanned Temporary or Permanent Closure	1/31/2011	
CUL-03	CRMMP- Cultural Resources Mitigation and Monitoring Plan	8/13/2010	
HAZ-02	Hazardous Materials Business Plan	2/13/2013	
HAZ-03	Safety Management Plan	4/25/2013	
NOISE-03	Noise Control Plan	8/11/2010	
PAL-03	PRMMP- Paleontological Resources Mitigation and Monitoring Plan	August 2010	Rev. 1: 10/4/2010
S&W-02	Storm Water Pollution Prevention Plan (SWPPP)	July 2013	Rev. 1: 10/24/2014; Rev. 2: 6/24/2015; Rev. 3: 9/8/2015
S&W-02	SWPPP Annual Reports	Varies	
S&W-04	Semi-Annual Groundwater Usage Reports	Varies	
S&W-06	Groundwater Monitoring and Reporting Plan	7/15/2010	October 2010
S&W-06	Annual Groundwater Monitoring Reports	Varies	
TRANS-01	Traffic Control Plan	6/15/2010	
TRANS-03	Heliostat Positioning Plan-Rev 1	1/14/2013	September 2013
TRANS-04	Power Tower Luminance Plan	9/12/2013	
VIS-01	Surface Treatment Plan	6/29/2010	Rev. 1: 5/24/2011;
VIS-04	Visual Resources Mitigation Plan (Lighting Plan w/Nighttime Amendment)	12/14/2011	
WORKER SAFETY- 02	Project Operations and Maintenance Safety and Health Program	Varies	
FA0014961	CUPA (Certified Unified Program Agency) Annual Permit for Facility #FA0014961 from San Bernardino County Fire Protection District	3/1/2015	
	Spill Prevention Control and Countermeasure Plan (SPCC)	10/27/2014	Rev. 1: 5/13/2015; Rev. 2: 9/3/2015
CAL000389737	Hazardous Waste Generation Identification Number issued by Department of Toxic Substances Control	9/23/2013	
WASTE-06	Operations Waste Management Plan	9/23/2013	
S&W-05	Storm Water Damage Monitoring and Response Plan and Reports	8/7/2013	
40 CFR 98	Greenhouse Gas (GHG) Monitoring Plan and Annual Reports	3/10/2014	6/15/2015
Varies	MDAQMD Permits To Operate (changed from ATC to PTO on March 2, 2015.	Varies	
12-3601181-001	Domestic Water Supply Permit No. 14-3601181-001 from San Bernardino County Department of Public Health	1/28/2014	
AQ-06	Annual Compliance Test Reports	10/2/2014; 6/11/2015	
COMP-07	Annual Compliance Report (COMP-7)	1/30/2015	

Section 7

Evaluation of the On-site Contingency Plan for Unplanned Facility Closure (COMP-07 Item 9)



NRG Ivanpah Solar Electric Generating System
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December 31, 2015

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C) Evaluation of On-site Contingency Plan for Unplanned Facility Closure, Including Suggestions for Bringing the Plan up to Date, to fulfill California Energy Commission Conditions of Certification, COMPLIANCE-07 Item 9

Dear Mr. Douglas and Mr. Ahrens,

In accordance with the requirements of Conditions of Certification COMPLIANCE-07 Item 9 of the Commission's approval of the Ivanpah Solar Electric Generating System, we are providing the following statement as a requirement in the Annual Compliance Report:

The On-site Contingency Plan for Unplanned Facility Closure, in accordance with COMPLIANCE-12 and COMPLIANCE-13, is currently in force and no changes were made during the reporting period.


William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364

CC: Doug Davis, NRG
Tim Sisk, NRG
Mitch Samuelian, NRG
Document Control Specialist – NRG.

Section 8

**Listing of Complaints, Notice of
Violations, Official Warnings and
Citations Received During the Year
(COMP-07 Item 10)**

January 4, 2016

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C)
Listing of Complaints, Notices of Violations, Official Warnings and Citations Received During the Year,
to fulfill California Energy Commission Conditions of Certification, COMPLIANCE-07 Item 10

Dear Mr. Douglas and Mr. Ahrens,

In accordance with the requirements of Conditions of Certification COMPLIANCE-07 Item 10 of the Commission's approval of the Ivanpah Solar Electric Generating System, we are providing the following information as a requirement in the Annual Compliance Report:

The California Energy Commission Condition of Certification COMPLIANCE-7, Annual Compliance Report requires "A listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved matters, and the status of any unresolved matters."

In compliance with this condition, the project is reporting the receipt of pilot report ACN 1238677 of glare emanating from the facility on a single occasion in 2015. The report was provided by the NASA Aviation Safety Reporting System (ASRS) on April 24, 2015. The Heliostat Positioning Plan (HPP) that was approved by the Energy Commission on December 10, 2013 required as part of the Condition of Certification TRANS-3, a formal response within ten days of the receipt of these reports. The response to the report was provided by the site on May 5, 2015. An update/addendum to the ISEGS Heliostat Positioning Plan was subsequently submitted on December 10, 2015. All stakeholders listed in the HPP including the Energy Commission were informed of the results of the initial investigation of the reports.

Monitoring at the site of the glare emanating from the facility was conducted on March 26th, 2015 by Sandia National Laboratories.



NRG Ivanpah Solar Electric Generating System
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Other than the above complaint, ISEGS did not receive any further complaints, notices of violations, official warnings, and citations during the reporting period.

Please feel free to contact me with any questions.

Thank you.


William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364

CC: Doug Davis, NRG, Ivanpah
Mitch Samuelian, NRG, Ivanpah
Tim Sisk, NRG
Document Control Specialist – NRG.

ACN: 1238677

Time

Date: 201502

Local Time Of Day: 0601-1200

Place

Locale Reference.Airport: LAS.Airport

State Reference: NV

Altitude.MSL.Single Value: 38000

Environment

Flight Conditions: VMC

Light: Daylight

Aircraft 1

ATC / Advisory.Center: ZLA

Aircraft Operator: Air Carrier

Make Model Name: B737 Undifferentiated or Other Model

Operating Under FAR Part: Part 121

Flight Phase: Cruise

Route In Use: Direct

Person 1

Reporter Organization: Air Carrier

Function.Flight Crew: Captain

Function.Flight Crew: Pilot Not Flying

Qualification.Flight Crew: Air Transport Pilot (ATP)

Experience.Flight Crew.Total: 13800

Experience.Flight Crew.Last 90 Days: 270

Experience.Flight Crew.Type: 7000

ASRS Report Number: 1238677

Events

Anomaly.Inflight Event / Encounter: Other / Unknown

Detector.Person: Flight Crew

Result.General: None Reported / Taken

Assessments

Contributing Factors / Situations: Environment - Non Weather Related

Contributing Factors / Situations: Human Factors

Primary Problem: Environment - Non Weather Related

Narrative 1

Blinding reflection from solar facility. It is so bright, it is uncomfortable to look in that direction, even with sunglasses. This means scanning for traffic from that direction isn't done.

Synopsis

B737 Captain at FL380 reports being blinded by the solar array southwest of LAS.

Section 9

Table 1 – List of Conditions of Certifications That Were Satisfied During the Reporting Period (COMP-07)

The following **TABLE 1** includes Actions including plan or report submittals that were made up to the end of this reporting period in compliance with the project's **Conditions of Certification**.

TECHNICAL AREA	COC No.	TABLE 1 2015 ACTIONS THAT SATISFIED THE CONDITIONS OF CERTIFICATION	SUBMITTAL DATE
Air Quality Auxilliary Boilers	AQ-01	Equipment operation to be conducted in compliance with all data and specifications submitted with the application. Any non-compliant operations shall be listed in the Annual Compliance Report (COMPLIANCE-7).	Submitted with the 2015 annual compliance report - 1/29/2016
Air Quality Auxilliary Boilers	AQ-02	To operate equipment in strict accord with the recommendations of the manufacturer or supplier and/or sound engineering principles and consistent with all information submitted with the application. As part of the Annual Compliance Report (COMPLIANCE-7), the project owner shall include information on the date, time, and duration of any violation of this permit condition.	Submitted with the 2015 annual compliance report - 1/29/2016
Air Quality Auxilliary Boilers	AQ-03	Only natural gas shall be used for the boilers and equipped with a meter measuring fuel consumption. To include proofs that only pipeline quality, or Public Utility Commission regulated gas are used for the boilers. As part of the Annual Compliance Report (COMPLIANCE-7), the project owner shall include proofs that only pipeline quality, or Public Utility Commission regulated natural gas are used for the boilers.	Submitted with the 2015 annual compliance report - 1/29/2016
Air Quality Auxilliary Boilers	AQ-04	To maintain log for boilers for 5 years which shall be provided to the District, state or federal personnel upon request.	Completed for 2014; Completed for 2015
Air Quality Auxilliary Boilers	AQ-06	Submitted 30 days notification prior the annual compliance test for Unit 1, Unit 2 and Unit 3 Auxiliary Boilers.	7/11/2014; 3/13/2015
Air Quality Auxilliary Boilers	AQ-06	Performed annual tune-up for Unit 1, Unit 2 and Unit 3 Auxiliary Boilers	4/15/2015
Air Quality Auxilliary Boilers	AQ-06	Unit 1 Auxiliary Boiler annual compliance test was completed on 4/15/2015. The test report was submitted on 6/15/2015.	10/3/2014; 6/15/2015
Air Quality Auxilliary Boilers	AQ-06	Unit 2 Auxiliary Boiler annual compliance test was completed on 4/16/2015. The test report was submitted on 6/15/2015.	10/3/2014; 6/15/2015
Air Quality Auxilliary Boilers	AQ-06	Unit 3 Auxiliary Boiler annual compliance test was completed on 4/17/2015. The test report was submitted on 6/15/2015.	10/3/2014; 6/15/2015

TECHNICAL AREA	COC No.	<p style="text-align: center;">TABLE 1</p> <p style="text-align: center;">2015 ACTIONS THAT SATISFIED THE CONDITIONS OF CERTIFICATION</p>	SUBMITTAL DATE
Air Quality Auxilliary Boilers	AQ-07	This boiler (Boilers 1, 2, and 3) shall be operated in compliance with all applicable requirements of 40 CFR 60 Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Db).	In Compliance for 2014; In Compliance for 2015
Air Quality Auxilliary Boilers	AQ-08	Records of fuel supplier certifications of fuel sulfur content shall be maintained to demonstrate compliance with the sulfur dioxide and particulate matter emission limits.	Completed for 2014; Completed for 2015
Air Quality Auxilliary Boilers	AQ-09	The owner/operator shall continuously monitor and record fuel flow rate and flue gas oxygen level.	Completed for 2014; Completed for 2015
Air Quality Auxilliary Boilers	AQ-10	Submitted Petition for Low Mass Emissions Certification to predict NOx emissions.	11/12/2015
Air Quality Auxilliary Boilers	AQ-12	Annual fuel use for the Auxiliary Boilers and Nighttime Preservation Boilers was amended from 328 mmscf to 525 mmscf on 9/15/2014. Annual fuel use for each Aux. Boiler and Nighttime Preservation Boiler did not exceed 525 mmscf of natural gas in 2015. Record logs are being kept and monitored. Records are submitted in the 2015 annual compliance report.	1/30/2015; 1/29/2016
Air Quality Fire Pumps	AQ-13	This engine, certified in accordance with 40 Code of Federal Regulations (CFR) part 89, and after treatment control device (if any) shall be installed, operated and maintained according to the manufacturer's emission-related written instructions. Further, the owner/operator shall change only those emission-related settings that are permitted by 40 CFR 60 Subparts 60.4205 and 60.4211. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit.	In Compliance for 2014; In Compliance for 2015
Air Quality Fire Pumps	AQ-14	This unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15ppm) on a weight per weight basis per ARB Diesel or equivalent requirements. [17 California Code of Regulations (CCR) 93115; 60.4207(b)]	In Compliance for 2014; In Compliance for 2015
Air Quality Fire Pumps	AQ-16	This unit shall be limited to use for emergency purposes. In addition, this unit shall be operated no more than 1.0 hours per day for a total of 50 hours per year for testing and maintenance. The 50 hour can be exceeded when the emergency fire pump assembly is driven directly by a stationary diesel fueled CI engine when operated per and in accord with the National Fire protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 1998 edition. This requirement includes usage during emergencies. [[District Rule 1302(C)(2)(a) and Rule 1304(D)(1)(a)] and 17CCR93115.3(n)] [Hours allowed by federal regulation 40 CFR 60.42(f) streamlined out as these permit requirements are more stringent than the federal regulatory requirements.]	In Compliance for 2014; In Compliance for 2015

TECHNICAL AREA	COC No.	TABLE 1 2015 ACTIONS THAT SATISFIED THE CONDITIONS OF CERTIFICATION	SUBMITTAL DATE
Air Quality Fire Pumps	AQ-17	The owner/operator shall maintain an operations log for this units current and on-site, (either at the engine location or at a on-site location), for a minimum of five (5) years, and this log shall be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the information specified below: a. Date of each use and duration of each use (in hours); b. Reason for use (testing & maintenance, emergency, required emission testing, etc.); c. Monthly and calendar year operation in terms of fuel consumption (in gallons) and total hours [17 CCR 93115]; and, d. Fuel sulfur concentration (the owner/operator may use the supplier's certification of sulfur content if it is maintained as part of this log. [17 CCR 93115]	Completed for 2014; Completed for 2015
Air Quality Fire Pumps	AQ-18	These engines may operate in response to fire suppression requirements and needs. [Rule 204].	In Compliance for 2014; In Compliance for 2015
Air Quality Fire Pumps	AQ-19	This unit is subject to the requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines (17 CCR § 93115) and 40 Code of Federal Regulations (CFR) Part 60, Subpart III (NSPS). In the event of conflict between these conditions and the ATCM or NSPS, the more stringent requirements shall govern.	In Compliance for 2014; In Compliance for 2015
Air Quality Emergency Generators	AQ-20	This engine, certified in accordance with 40 CFR Part 89, and after treatment control device (if any) shall be installed, operated and maintained according to the manufacturer's emission-related written instructions. Further, the owner/operator shall change only those emission-related settings that are permitted by the manufacturer. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit. [40 CFR Part 60 Subparts 60.4205, and 60.4211]	In Compliance for 2014; In Compliance for 2015
Air Quality Emergency Generators	AQ-21	This unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15ppm) on a weight per weight basis per CARB Diesel or equivalent requirements. [17 CCR 93115; 60.4207(b)]	In Compliance for 2014; In Compliance for 2015
Air Quality Emergency Generators	AQ-23	This unit shall not be used to provide power during a voluntary power outage and/or power reduction initiated under an Interruptible Service Contract (ISC), Demand Response Program (DRP), Load Reduction Program (LRP) and/or similar arrangement(s) with the electrical power supplier. [17 CCR 93115] [40 CFR 60 Subpart IIII allowance for DRP streamlined out.]	In Compliance for 2014; In Compliance for 2015
Air Quality Emergency Generators	AQ-24	This unit shall be limited to use for emergency power, defined as in response to a fire or when commercially available power has been interrupted. In addition, this unit shall be operated no more than 1.0 hours per day of 50 hours per year for testing and maintenance [NSR and 17 CCR 93115] [Hours allowed by 60.42 (f) stremlined out.]	Completed for 2014; Completed for 2015

TECHNICAL AREA	COC No.	TABLE 1 2015 ACTIONS THAT SATISFIED THE CONDITIONS OF CERTIFICATION	SUBMITTAL DATE
Air Quality Emergency Generators	AQ-25	The owner/operator shall maintain an operations log for this unit current and on-site (or at a central location) for a minimum of five (5) years, and this log shall be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the information specified below: a. Date of each use and duration of each use (in hours); b. Reason for use (testing & maintenance, emergency, required emission testing, etc.); c. Monthly and calendar year operation in terms of fuel consumption (in gallons) and total hours [17 CCR 93115]; and, d. Fuel sulfur concentration (the owner/operator may use the supplier's certification of sulfur content if it is maintained as part of this log) [17 CCR 93115]	Completed for 2014; Completed for 2015
Air Quality Emergency Generators	AQ-26	This unit is subject to the requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines (Title 17 CCR §93115) and 40 CFR 60 Part 60, Subpart III (NSPS). In the event of conflict between these conditions and the ATCM or NSPS, the more stringent requirements shall govern.	In Compliance for 2014; In Compliance for 2015
Air Quality Nighttime Preservation Boilers	AQ-27	Any non-compliant operations shall be listed in the Annual Compliance report (COMPLIANCE-7).	1/30/2015; 1/29/2016
Air Quality Nighttime Preservation Boilers	AQ-28	As part of the Annual Compliance Report (COMPLIANCE-7), the project owner shall include information on the date, time, and duration of any violation of this permit condition.	1/30/2015; 1/29/2016
Air Quality Nighttime Preservation Boilers	AQ-29	As part of the Annual Compliance Report (COMPLIANCE-7), the project owner shall include proof that only pipeline quality, or Public Utility Commission regulated natural gas is used in these boilers.	1/30/2015; 1/29/2016
Air Quality Nighttime Preservation Boilers	AQ-30	The owner/operator shall maintain a current, on-site (at a central location if necessary) log for this equipment for five (5) years, which shall be provided to District, state, or federal personnel upon request. This log shall include calendar year fuel use for this equipment in standard cubic feet, or BTUs, and daily hours of operation.	Completed for 2014; Completed for 2015
Air Quality Nighttime Preservation Boilers	AQ-31	The owner/operator shall perform annual tune-ups in accordance with the unit manufacturer's specified tune-up procedure, by a qualified technician.	Completed for 2014; Completed for 2015
Air Quality Nighttime Preservation Boilers	AQ-32	Records of fuel supplier certifications of fuel sulfur content shall be maintained to demonstrate compliance with the sulfur dioxide and particulate matter emission limits.	Completed for 2014; Completed for 2015

TECHNICAL AREA	COC No.	<p style="text-align: center;">TABLE 1</p> <p style="text-align: center;">2015 ACTIONS THAT SATISFIED THE CONDITIONS OF CERTIFICATION</p>	SUBMITTAL DATE
Air Quality Nighttime Preservation Boilers	AQ-33	The owner/operator shall continuously monitor and record fuel 'flow rate.	Completed for 2014; Completed for 2015
Air Quality Nighttime Preservation Boilers	AQ-34	The combined fuel use from the auxiliary boiler and the nighttime preservation boiler shall not exceed 525 MMSCF of natural gas in any calendar year; combined fuel use is the sum total of natural gas combusted from Boilers with MDAQMD permit numbers; B010375 and B011544 (Ivanpah 1) and shall not exceed a total of 525 mmscf in any calendar year in that boiler pair; B010376 and B011572 (Ivanpah 2) and shall not exceed a total of 525 mmscf in any calendar year in that boiler pair; B01 0377, and B011573 (Ivanpah 3) and shall not exceed a total of 525 mmscf in any calendar year in that boiler pair.	1/30/2015; 1/29/2016
Air Quality Common Area Emergency Generators	AQ-35	This engine, certified in accordance with 40 CFR Part 89, and after treatment control device (if any) shall be installed, operated and maintained according to the manufacturer's emission-related written instructions. Further, the owner/operator shall change only those emission-related settings that are permitted by the manufacturer. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit. [40 CFR Part 60 Subparts 60.4205, and 60.42111	In Compliance for 2014; In Compliance for 2015
Air Quality Common Area Emergency Generators	AQ-36	This unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15 ppm) on a weight per weight basis per CARB Diesel or equivalent requirements. [17 CCR 93115;.60.4207(b)]	In Compliance for 2014; In Compliance for 2015
Air Quality Common Area Emergency Generators	AQ-38	This unit shall not be used to provide power during a voluntary power outage and/or power reduction initiated under an Interruptible Service Contract (ISC), Demand Response Program (ORP), Load Reduction Program (LRP) and/or similar arrangement(s) with the electrical power supplier. [17 CCR 93115] [40 CFR 60 Subpart IIII allowance for DRP streamlined out.]	In Compliance for 2014; In Compliance for 2015
Air Quality Common Area Emergency Generators	AQ-39	This unit shall be limited to use for emergency power, defined as in response to a fire or when commercially available power has been interrupted. In addition, this unit shall be operated no more than 1.0 hrs per day for a total of 50 hours per year for testing and maintenance. [NSR and 17 CCR 93115] [Hours allowed by 60.42(f) streamlined out.]	In Compliance for 2014; In Compliance for 2015

TECHNICAL AREA	COC No.	TABLE 1 2015 ACTIONS THAT SATISFIED THE CONDITIONS OF CERTIFICATION	SUBMITTAL DATE
Air Quality Common Area Emergency Generators	AQ-40	The owner/operator shall maintain an operations log for this unit current and on-site (or at a central location) for a minimum of five (5) years, and this log shall be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the information specified below: a. Date of each use and duration of each use (in hours); b. Reason for use (testing & maintenance, emergency, required emission testing, etc.); c. Monthly and calendar year operation in terms of fuel consumption (in gallons) and total hours [17 CCR 93115]; and, d. Fuel sulfur concentration (the o/o may use the supplier's certification of sulfur content if it is maintained as part of this log.) [17 CCR 93115]	Completed for 2014; Completed for 2015
Air Quality Common Area Fire Pumps	AQ-42	This engine, certified in accordance with 40 CFR Part 89, and after treatment control device (if any) shall be installed, operated and maintained according to the manufacturer's emission-related written instructions. Further, the owner/operator shall change only those emission-related settings that are permitted by the manufacturer. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit. [40 CFR Part 60 Subparts 60.4205 and 60.4211]	In Compliance for 2014; In Compliance for 2015
Air Quality Common Area Fire Pumps	AQ-43	This unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15ppm) on a weight per weight basis per CARB Diesel or equivalent requirements. [17 CCR 93115; 60.4207(b)]	In Compliance for 2014; In Compliance for 2015
Air Quality Common Area Fire Pumps	AQ-45	This unit shall be limited to use for emergency purposes. In addition, this unit shall be operated no more than 1.0 hrs per day for a total of 50 hours per year for testing and maintenance. The 50 hour limit can be exceeded when the emergency fire pump assembly is driven directly by a stationary diesel fueled CI engine operated per and in accord with the National Fire Protection Association (NFPA) 25 "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 1998 edition. This requirement includes usage during emergencies. [[District Rule 1302(C)(2)(a) and Rule 1304 (D)(1)(a)] and 17 CCR 93115.3(n)] [Hours allowed by federal regulation 40 CFR 60.42(f) streamlined out as these permit requirements are more stringent than the federal regulatory requirements.]	In Compliance for 2014; In Compliance for 2015

TECHNICAL AREA	COC No.	TABLE 1 2015 ACTIONS THAT SATISFIED THE CONDITIONS OF CERTIFICATION	SUBMITTAL DATE
Air Quality Common Area Fire Pumps	AQ-46	The owner/operator shall maintain an operations log for this unit current and on-site (or at a central location) for a minimum of five (5) years, and this log shall be provided to District, State and Federal personnel upon request. . The log shall include, at a minimum, the information specified below: a. Date of each use and duration of each use (in hours); b. Reason for use (testing & maintenance, emergency, required emission testing, etc.); c. Monthly and calendar year operation in terms of fuel consumption (in gallons) and total hours [17 CCR93115]; and, d. Fuel sulfur concentration (the % may use the supplier's certification of sulfur content if it is maintained as part of this log.) [17 CCR 93115].	Completed for 2014; Completed for 2015
Air Quality Common Area Fire Pumps	AQ-47	These engines may operate in response to fire suppression requirements and needs. [Rule 204].	In Compliance for 2014; In Compliance for 2015
Air Quality General	AQSC-06	Dedicated Off-road Vehicles for Mirror Washing Activities Plan - The Plan shall be updated every other year and submitted in the Annual Compliance Report. The updated Plan was submitted in the 2015 Annual Compliance Report.	1/29/2016
Air Quality General	AQSC-07	Revised Operations Dust Control Plan was submitted to CEC and BLM.	7/30/2014
Air Quality General	AQSC-07	Submit 2015 dust control annual report with the annual compliance report	1/29/2016
Air Quality General	AQSC-08	Submitted copy of all MDAQMD Permits To Operate to CEC and BLM.	12/10/2015
Biological Resources	BIO-02	During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless his/her duties cease, as approved by BLM's Authorized Officer and the CPM.	1/30/2015; 1/29/2016
Biological Resources	BIO-04	During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless his/her duties cease, as approved by BLM's Authorized Officer and the CPM.	1/30/2015; 1/29/2016
Biological Resources	BIO-07	Submitted Construction Termination Report (within 30 days after completion of project construction. Project construction officially completed on 5/31/2014.	6/30/2014
Biological Resources	BIO-07	Submitted post-construction Closure, Revegetation and Rehabilitation Plan Report	7/1/2014
Biological Resources	BIO-10	Submitted Annual Listed Species Status Report with the Annual Compliance Report.	1/30/2015; 1/29/2016
Biological Resources	BIO-11	Submitted Construction Termination Report (within 30 days after completion of project construction. Project construction officially completed on 5/31/2014.	6/30/2014
Biological Resources	BIO-11	Submitted post-construction Closure, Revegetation and Rehabilitation Plan Report	7/1/2014

TECHNICAL AREA	COC No.	<p style="text-align: center;">TABLE 1</p> <p style="text-align: center;">2015 ACTIONS THAT SATISFIED THE CONDITIONS OF CERTIFICATION</p>	SUBMITTAL DATE
Biological Resources	BIO-11	The Designated Biologist shall report summarizing all available data (species of carcass, date and location collected, and cause of death) describing bird and other carcasses collected within the project site each year. This report was submitted in the Annual Compliance Report.	1/30/2015; 1/29/2016
Biological Resources	BIO-12	Annual Monitoring Report per the Raven Mangement Plan was submitted on 12/31/2014. Resubmitted on 1/5/2015 with maps.	12/31/2014; 12/30/2015
Biological Resources	BIO-12	Report identifying which items of the Raven Management Plan (Post Construction Raven Management Report) have been completed was submitted to CEC and BLM on 7/31/2014.	7/31/2014
Biological Resources	BIO-13	Submitted Weed Management Plan Annual Report in the Annual Compliance Report.	1/30/2015; 1/29/2016
Biological Resources	BIO-14	Submitted Revegetation Annual Monitoring Report in the Annual Compliance Report.	1/30/2015; 1/29/2016
Biological Resources	BIO-14	Report identifying which items of the Post-construction Closure, Revegetation and Rehabilitation Plan have been completed was submitted to CEC and BLM on 6/30/2014	6/30/2014
Biological Resources	BIO-16	Submitted Construction Termination Report (within 30 days after completion of project construction. Project construction officially completed on 5/31/2014.	6/30/2014
Biological Resources	BIO-16	Submitted post-construction Closure, Revegetation and Rehabilitation Plan Report	7/1/2014
Biological Resources	BIO-17	Submitted post-construction analysis with the final accounting of the amount of habitat disturbed during project construction.	8/29/2014
Biological Resources	BIO-17	Submitted the results of the annual inspection of fencing and rehabilitated routes; a summary of fence repairs and maintenance of reclaimed routes completed during the year; and recommendations and a cost estimate for repairs and maintenance activities needed for the upcoming year. The reports were submitted in the 2015 Annual Compliance Report.	1/29/2016
Biological Resources	BIO-18	Submitted Special Status Plants Annual Report in the Annual Compliance Report	1/30/2015; 1/29/2016
Biological Resources	BIO-18	Mojave Milkweed Land Acquisition Annual Report for 2015	1/29/2016
Biological Resources	BIO-18	Submitted Special Status Plants Natural Gas Line Monitoring Report in the Annual Compliance Report.	1/30/2015; 1/29/2016
Biological Resources	BIO-19	SCBS Nelson's Bighorn Sheep Annual Report	1/30/2015; 1/29/2016
Biological Resources	BIO-20	Streambed Impact Minimization and Compensation Measure change of condition report was submitted in the 2015 Annual Compliance Report	1/29/2016

TECHNICAL AREA	COC No.	<p style="text-align: center;">TABLE 1</p> <p style="text-align: center;">2015 ACTIONS THAT SATISFIED THE CONDITIONS OF CERTIFICATION</p>	SUBMITTAL DATE
Biological Resources	BIO-21	Revised Spring and Summer Avian and Bat Monitoring and Management Plan quarterly reports were submitted on 12/16/2014.	12/16/2014
Biological Resources	BIO-21	Submitted Avian & Bat Monitoring Plan - 2014 Fall Report	4/20/2015
Biological Resources	BIO-21	Submitted Avian & Bat Monitoring Plan - 2013-2014 Annual Report (Revised)	4/20/2015
Biological Resources	BIO-21	Submitted Avian & Bat Monitoring Plan - 2013-2014 Winter Report	8/14/2015
Biological Resources	BIO-21	Submitted Avian & Bat Monitoring Plan - 2015 Spring Report	12/23/2015
Biological Resources	BIO-21	Submitted Avian & Bat Monitoring Plan Revision 13 dated November 2015	12/23/2015
Biological Resources	BIO-22	Submitted post-construction analysis of the amount of habitat disturbed during project construction.	8/29/2014
Biological Resources	BIO-23 (BLM)	Revised Spring and Summer Avian and Bat Monitoring and Management Plan quarterly reports were submitted on 12/16/2014	12/16/2014
Compliance Conditions	COMP-2	Compliance Record: As-built drawings are maintained at the ISEGS facility. These files were hand-delivered to CEC on 12/8/2014 by Doug Davis.	12/8/2014
Compliance Conditions	COMP-4/ COMP-7	Submit annual compliance report during project operations.	1/30/2015; 1/29/2016
Compliance Conditions	COMP-9	Paid annual facility compliance fee to CEC pursuant to the provisions of the Public Resources Code.	7/1/2014
Facility Design	GEN-1	The project owner shall provide BLM's Authorized Officer and the CPM a copy of the certificate of occupancy within 30 days of receipt from the CBO (2007 CBC, Appendix Chapter 1, section 110, Certificate of Occupancy).	1/22/2015
Facility Design	GEN-8	Electronic copies of the final approved engineering plans were hand-delivered by Doug Davis to CEC on 12/8/2014.	12/8/2014
Hazardous Materials	HAZ-1	A list of hazardous materials contained in the facility was submitted with the annual compliance report.	1/30/2015; 1/29/2016
Hazardous Materials	HAZ-5	Provided statement with the annual compliance report that all employees and contractors have been performed and vendor certifications and employee background investigations were appended in the Operations Security Plan.	1/30/2015; 1/29/2016
Land Use	LAND-3	Upon completion the project owner shall submit notice to BLM and the Energy Commission that it has completed construction of the Solar / Ecological Interpretive Center. The notification was submitted to BLM and CEC and accepted on 5/13/2015 and 5/19/2015 respectively.	5/13/2015; 5/19/2015
Land Use	LAND-3	Submitted Solar Ecological Interpretive Center Post Construction Report on 6/22/2015.	7/16/2015

TECHNICAL AREA	COC No.	TABLE 1 2015 ACTIONS THAT SATISFIED THE CONDITIONS OF CERTIFICATION	SUBMITTAL DATE
Noise & Vibration	NOISE-5	Submitted noise survey report that was conducted on 10/3/2014	10/23/2014
Geology & Paleontology	PAL-7	CH2M Hill submitted Paleontological Resources Report.	1/9/2014
Recreation	REC-1	Prior to commercial operation, the project owner shall submit notice to BLM and the Energy Commission that it has completed construction of the Solar / Ecological Interpretive Center and shall request final approval by both BLM's Authorized Officer and the CPM.	5/13/2015; 5/19/2015
Soil & Water	S&W-01	Once operational, the project owner shall provide in the annual compliance report information on the results of storm water BMP monitoring and maintenance activities.	1/30/2015
Soil & Water	S&W-02	Submitted SWPPP Annual Report electronically to State Water Resources Control Board.	6/30/2014; 6/30/2015
Soil & Water	S&W-03	Annual Monitoring Reports will be submitted which include Quarterly monitoring data as described in the Approved Groundwater Monitoring and Management Plan. The First Annual Report will be a Baseline Report which includes the Well Network and level monitoring report and plan	11/17/2014; 8/13/2015
Soil & Water	S&W-04	For years subsequent to the initial year of operation, the annual summary will also include the yearly range and yearly average water use by source. For calculating the total water use, the term "year" will correspond to the date established for the annual compliance report submittal.	1/30/2015; 1/29/2016
Soil & Water	S&W-05	The project owner shall prepare an annual summary of the number of heliostats failed, cause of the failure, and cleanup and mitigation performed for each failed heliostat.	1/30/2015; 1/29/2016
Soil & Water	S&W-06	Submitted annual groundwater monitoring report to CEC, BLM and San Bernardino County.	11/17/2014; 8/13/2015
Traffic & Transportation	TRANS-2	Solar Partners/NRG coordinated with appropriate agencies to complete the inspections along the ROW to identify sections to be repaired.	7/31/2014
Traffic & Transportation	TRANS-3	Submitted Heliostat Positioning Plan addendum/update to CEC and BLM.	12/10/2014; 12/10/2015
Transmission Lines	TLSN-2	Pre and post energization measurement report was submitted to CEC and BLM.	7/31/2014
Transmission Lines	TLSN-3	During the first 5 years of plant operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the right-of-way and provide such summaries in the Annual Compliance Report to be provided to BLM's Authorized Officer and the CPM.	1/30/2015; 1/29/2016
Visual Resources	VIS-1	The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report.	1/30/2015; 1/29/2016

TECHNICAL AREA	COC No.	TABLE 1 2015 ACTIONS THAT SATISFIED THE CONDITIONS OF CERTIFICATION	SUBMITTAL DATE
Visual Resources	VIS-2	The project owner shall report landscape maintenance activities, including replacement of dead or dying vegetation, for the previous year of operation in each Annual Compliance Report.	1/30/2015; 1/29/2016
Waste Management	WASTE-6	Documentation of actual volume of wastes generated and the waste management methods used during the year. This report is submitted with the annual compliance report.	1/30/2015; 1/29/2016

Exhibit 2

ISEGS Compliance Matrix (COMP-07 Item 1)

Ivanpah SEGS Operations Compliance Matrix rev 01/15/2016

Amendment approved by CEC on 2/13/2013

Amendment approved by CEC on 9/15/2014

Amendment approved by CEC on 11/19/2015

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES																							
Air Quality Auxiliary Boilers	AQ-01	Operation of this equipment must be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below	Any non-compliant operations shall be listed in the Annual Compliance Report (COMPLIANCE-7).	In Progress	N/A	1/30/2015; 1/29/2016																										
Air Quality Auxiliary Boilers	AQ-02	The owner/operator shall operate this equipment in strict accord with the recommendations of the manufacturer or supplier and/or sound engineering principles and consistent with all information submitted with the application for this permit, which produce the minimum emission of air contaminants.	As part of the Annual Compliance Report (COMPLIANCE-7), the project owner shall include information on the date, time, and duration of any violation of this permit condition.	On-going	N/A	1/30/2015; 1/29/2016																										
Air Quality Auxiliary Boilers	AQ-03	This boiler shall use only natural gas as fuel and shall be equipped with a meter measuring fuel consumption, in standard cubic feet.	As part of the Annual Compliance Report (COMPLIANCE-7), the project owner shall include proofs that only pipeline quality, or Public Utility Commission regulated natural gas are used for the boilers.	On-going	Annually beginning 2015	1/30/2015; 1/29/2016		11/19/2015	Gas consumption monitoring in progress. NG supply comes from KRG T pipeline that meets this requirement.																							
Air Quality Auxiliary Boilers	AQ-04	The owner operator shall maintain a current, on-site (at a central location if necessary) log for this equipment for five (5) years, which shall be provided to District, state or federal personnel upon request. This log shall include calendar year fuel use for this equipment in standard cubic feet, or BTU's, and daily hours of operation.	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or Energy Commission staff.	On-going	N/A				Operations logs for each Boiler is maintained and up to date.																							
Air Quality Boilers	AQ-06	<p>The owner/operator shall perform Annual Compliance Tests in accordance with the District Compliance Test Procedural Manual. Prior to performing these annual tests, the boiler shall be tuned in accord with the manufacturer's specified tune-up procedure, by a qualified technician. Subsequent tests shall demonstrate that this equipment does not exceed the following emission maximums:</p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>ppmvd</th> <th>Lb/MMBtu</th> <th>Lb/hr</th> </tr> </thead> <tbody> <tr> <td>*NOx</td> <td>9.0</td> <td>0.011</td> <td>2.5 2.7 (per USEPA Methods 7E and 19 and 20)</td> </tr> <tr> <td>SOx₂</td> <td>1.7</td> <td>0.003</td> <td>0.6 0.7</td> </tr> <tr> <td>*CO</td> <td>25.0</td> <td>0.018</td> <td>4.2 4.6 4.5 (per USEPA Method 10)</td> </tr> <tr> <td>VOC</td> <td>12.6</td> <td>0.0054</td> <td>4.2 4.3 (per USEPA Methods 25A and 18)</td> </tr> <tr> <td>PM10</td> <td>n/a</td> <td>0.007</td> <td>1.7 (per USEPA Method 5 or 2014 L and 202 6 & 203 or CARB Method 5)</td> </tr> </tbody> </table> <p>*corrected to 3% oxygen, on a dry basis, averaged over one hour</p> <p>Opacity shall be conducted per Method 9; Flue gas flow rate shall be quantified in dscf per USEPA Methods 1 through 5.</p>	Pollutant	ppmvd	Lb/MMBtu	Lb/hr	*NOx	9.0	0.011	2.5 2.7 (per USEPA Methods 7E and 19 and 20)	SOx ₂	1.7	0.003	0.6 0.7	*CO	25.0	0.018	4.2 4.6 4.5 (per USEPA Method 10)	VOC	12.6	0.0054	4.2 4.3 (per USEPA Methods 25A and 18)	PM10	n/a	0.007	1.7 (per USEPA Method 5 or 2014 L and 202 6 & 203 or CARB Method 5)	<p>The project owner shall notify the District and the CPM within fifteen (15) working days before the execution of the performance compliance test required in this condition. The test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.</p> <p>The owner or operator of an affected facility shall provide the Administrator at least 30 days prior notice of any performance test, except as specified under other subparts, to afford the Administrator the opportunity to have an observer present [40 CFR 60.8 (d)].</p>	2015 Completed; Upcoming for 2016	Notification Required 15 working days (30 days) prior compliance tests. Report Submittal within 60 days from the date of tests	<p>Notification prior Annual Compliance Test was submitted on 3/12/2015.</p> <p>Unit 1 Annual Compliance Test was completed on 4/16/2015; Test Result submitted on 6/15/2015.</p> <p>Unit 2 Annual Compliance Test was completed on 4/17/2015; Test Result submitted on 6/15/2015.</p> <p>Unit 3 Annual Compliance Test was completed on 4/18/2015; Test Result submitted on 6/15/2015.</p>	2/13/2013; 11/19/2015	<p>Notification prior Annual Compliance Test was submitted on 3/12/2015.</p> <p>Unit 1 Annual Compliance Test was completed on 4/16/2015; Test Result submitted on 6/15/2015.</p> <p>Unit 2 Annual Compliance Test was completed on 4/17/2015; Test Result submitted on 6/15/2015.</p> <p>Unit 3 Annual Compliance Test was completed on 4/18/2015; Test Result submitted on 6/15/2015.</p>
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Air Quality Auxiliary Boilers	AQ-07	This boiler (Boilers 1, 2, and 3) shall be operated in compliance with all applicable requirements of 40 CFR 60 Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Db).	The project owner shall complete and submit to the CPM a COMPLIANCE PLAN that provides a list of the 40 CFR 60 Subpart Db plans, tests, and recordkeeping requirements and their compliance schedule dates as applicable for the ISEGS Boilers 1, 2 and 3 at least 30 days prior to first fire of the boilers or earlier as necessary for compliance with Subpart Db.	COMPLETED (CONSTRUCTION)	30 days prior to First Fire	22-Aug-2012			Plan submitted for Unit 1 8-22-12, First Fire Unit 1 took place 11/18/12; Actual First Fire Notification Dates: 11/28/12 (Unit 1); 1/30/13 (Unit 2) & 4/9/13 (Unit 3)																							
Air Quality Auxiliary Boilers	AQ-08	Records of fuel supplier certifications of fuel sulfur content shall be maintained to demonstrate compliance with the sulfur dioxide and particulate matter emission limits.	Complying with Condition of Certification AQ-3 shall be used to demonstrate compliance with this condition.	On-going	N/A	1/30/2015; 1/29/2016			Natural Gas Sulfur contents are downloaded from KRG T website gas quality report.																							
Air Quality Boilers	AQ-09	The owner/operator shall continuously monitor and record fuel flow rate and flue gas oxygen level.	At least 120 days prior to construction of the boiler stacks, the project owner shall provide the District for approval, and the CPM for review, a detailed drawing and a plan on how the measurements and recordings, required by this condition, will be performed by the chosen monitoring system	Submitted	120 days prior construction of boiler stacks	28-Aug-2011			Fuel Flow rates and flue gas oxygen level are recorded and monitored. Download from the system occurs every quarter.																							
Air Quality Auxiliary Boilers	AQ-10	In lieu of installing CEMs to monitor NOx emissions, and pursuant to 40 CFR 60 Subpart Db, Section 60.49b(c), the owner/operator shall monitor boiler operating conditions and estimate NOx emission rates per a District approved emissions estimation plan . The plan shall be based on the initial source tests as required by condition AQ-5, and annually pursuant to condition AQ-6. The plan shall include test results, operating parameters, analysis, conclusions and proposed NOx estimating relationship consistent with established emission chemistry and operational effects.	This initial plan shall be submitted to the District for approval, and the CPM for review, within 360 days of the initial startup. Any proposed changes to a District-approved plan shall include subsequent test results, operating parameters, analysis, and any other pertinent information to support the proposed changes. The District must approve any emissions estimation plan or revision for estimated NOx emissions to be considered valid.	Submitted	360 days from Initial Start-up	11/18/2013; 11/12/2015			Submitted Petition for Low Mass Emissions Certification to predict NOx emissions on 11/12/2015.																							

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Air Quality Auxiliary Boilers	AQ-11	The owner/operator shall comply with all applicable recordkeeping and reporting requirements of NSPS Db.	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	On-going	N/A			11/19/2015	
Air Quality Auxiliary Boilers	AQ-12	This boiler shall not burn more than 0.9 MMSCF of natural gas in any single day, and no more than <u>The combined fuel use from the auxiliary boilers and nighttime preservation boilers shall not exceed 328 525 MMSCF of natural gas</u> in any calendar year; <u>combined fuel use is the sum total of natural gas combusted from Boilers with MDAQMD permit numbers; B010375, and B011544 (Ivanpah 1) and shall not exceed a total of 525 mmscf in any calendar year in that boiler pair; B010376 and B011572 (Ivanpah 2) and shall not exceed a total of 525 mmscf in any calendar year in that boiler pair ; B010377 and B011573 (Ivanpah 3) and shall not exceed a total of 525 mmscf in any calendar year in that boiler pair.</u> a. These limits shall not apply during the facility commissioning period. The commissioning period shall begin the first time fuel is fired in the boiler. The commissioning period shall end when the facility achieves commercial operation, but no later than 180 days after first fire.	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	Completed for 2015. On-going for 2016	NA	1/31/2014; 1/30/2015; 1/29/2016		2/13/2013; 9/15/2014	AQ amendments approved by CEC on 3/13/2013. Subsequent amendment was approved by CEC on 9/15/2014. Submitted with the Annual Compliance Report
CONDITIONS APPLICABLE TO IVANPAH 1,2, & 3 EMERGENCY FIRE PUMPS. MDAQMD APPLICATION NUMBERS/PERMIT NUMBERS; 0009312 (E010380), 00009315 (E010378) AND 00009319 (E010384)									
Air Quality Fire Pumps	AQ-13	This system engine, certified in accordance with 40 Code of Federal Regulations (CFR) part 89, and after treatment control device (if any) shall be installed, operated and maintained in strict accord with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of contaminants according to the manufacturer's emission-related written instructions. Further, the owner/operator shall change only those emission-related settings that are permitted by 40 CFR 60 Subparts 60.4209 and 60.4211. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit. (Note reference to Model 2010 Tier III engine)	During site inspection, the project owner shall make all records and reports available to the District, ARB, EPA or CEC staff.	On-going	N/A			13-Feb-2013	
Air Quality Fire Pumps	AQ-14 AQ-16	These <u>These</u> units shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15ppm) on a weight per weight basis per GARB Diesel or equivalent requirements. [17 California Code of Regulations (CCR) 93115; 60.4207(b)]	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	On-going	N/A			13-Feb-2013	
Air Quality Fire Pumps	AQ-18 AQ-16	These <u>These</u> units shall be limited to use for emergency purposes, power, defined as in response to a fire or when commercially available power has been interrupted. In addition, this unit shall be operated no more than <u>0.5-1.0 hours per day for a total of 50 hours per year for testing and maintenance, excluding compliance source testing. Time required for source testing will not be counted toward the 50 hour per year limit. can be exceeded when the emergency fire pump assembly is driven directly by a stationary diesel fueled CI engine when operated per and in accord with the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 1998 edition. This requirement includes usage during emergencies. [District Rule 1302(C)2(a) and Rule 1304(D)1(a)] and 17CCR93115.3(n)] [Hours allowed by federal regulation 40 CFR 60.42(f) streamlined out as these permit requirements are more stringent than the federal regulatory requirements.]</u>	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	On-going	N/A			2/13/2013; 11/19/2015	New PTOs received from MDAQMD on 11/02/15 - exp. 10/31/16
Air Quality Fire Pumps	AQ-20 AQ-17	The owner/operator shall maintain a <u>a</u> operations log for these <u>this</u> units current and on-site, (either at the engine location or at a on-site location), for a minimum of <u>two (2)-five (5) years</u> , and for another year where it can be made available to the District staff, within 5 working days from the District's request; and this log shall be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the information specified below: a. Date of each use and duration of each use (in hours); b. Reason for use (testing & maintenance, emergency, required emission testing, etc.); c. <u>Monthly and C</u> calendar year operation in terms of fuel consumption (in gallons) and total hours [17 CCR 93115]; and, d. Fuel sulfur concentration (the owner/operator may use the supplier's certification of sulfur content if it is maintained as part of this log); [17 CCR 93115] e. <u>Documentation of maintenance as per manufacturer's recommendations and good maintenance practices.</u>	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	On-going	N/A			13-Feb-2013	
Air Quality Fire Pumps	AQ-18	<u>These engines may operate in response to fire suppression requirements and needs. [Rule 204].</u>	<u>During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.</u>	On-going	N/A			13-Feb-2013	
Air Quality Fire Pumps	AQ-24 AQ-19	These fire protection <u>This</u> units are <u>is</u> subject to the requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines (The 17 CCR § 93115) and 40 Code of Federal Regulations (CFR) Part 60, Subpart III (NSPS). In the event of conflict between these conditions and the ATCM or NSPS, the more stringent requirements shall govern.	<u>Not necessary. The project owner shall submit to the District and the CPM the engine specifications at least 30 days prior to purchasing the engines for review and approval demonstrating that the engines meet the ATCM and NSPS emission limit requirements at the time of engine purchase.</u>	On-going	N/A			13-Feb-2013	

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
CONDITIONS APPLICABLE TO IVANPAH 1, 2, & 3 EMERGENCY GENERATORS. MDAQMD APPLICATION NUMBERS/PERMIT NUMBERS; 0009313 (E010381), 00009316 (E010379) AND 00009317 (E010382)									
Air Quality Emergency Generators	AQ-23 AQ-20	Engine may operate in response to notification of impending rotating outage if the area utility has ordered rotating outages in the area where the engine is located or expects to order such outages at a particular time, the engine is located in the area subject to the rotating outage, the engine is operated no more than 30 minutes prior to the forecasted outage, and the engine is shut down immediately after the utility advises that the outage is no longer imminent or in effect. (Refers to three (3) Model Year 2010, Tier II engines) <u>This engine, certified in accordance with 40 CFR Part 89, and after treatment control device (if any) shall be installed, operated and maintained according to the manufacturer's emission-related written instructions. Further, the owner/operator shall change only those emission-related settings that are permitted by the manufacturer. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit. [40 CFR Part 60, Subparts 60.4205, and 60.4211]</u>	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	On-going	N/A			13-Feb-2013	AQ amendments approved by CEC on 3/13/13. New ATC Permits received from MDAQMD on 11/6/13 - exp. 10/31/14
Air Quality Emergency Generators	AQ-24 AQ-21	This unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15ppm) on a weight per weight basis per CARB Diesel or equivalent requirements. <u>[17 CCR 93115; 60.4207(b)]</u>	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	On-going	N/A			13-Feb-2013	
Air Quality Emergency Generators	AQ-23	<u>This unit shall not be used to provide power during a voluntary power outage and/or power reduction initiated under an Interruptible Service Contract (ISC), Demand Response Program (DRP), Load Reduction Program (LRP) and/or similar arrangement(s) with the electrical power supplier. [17 CCR 93115] [40 CFR 60 Subpart III] allowance for DRP streamlined out.]</u>	<u>During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.</u>	On-going	N/A			13-Feb-2013	
Air Quality Emergency Generators	AQ-27 AQ-24	This unit shall be limited to use for emergency power, defined as in response to a fire or when commercially available power has been interrupted. In addition, this unit shall be operated no more than <u>0.5, 1.0 hours per day of</u> 50 hours per year, and no more than <u>0.6 hours per day</u> for testing and maintenance, excluding compliance source testing. Time required for source testing will not be counted toward the 50-hour per year limit. <u>[NSR and 17 CCR 93115] [Hours allowed by 60.42 (f) streamlined out.]</u>	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	On-going	N/A			2/13/2013; 11/19/2015	
Air Quality Emergency Generators	AQ-28 AQ-25	The owner/operator shall maintain an operations log for this unit current and on-site (or at a central location) for a minimum of five (5) years, and this log shall be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the information specified below: a. Date of each use and duration of each use (in hours); b. Reason for use (testing & maintenance, emergency, required emission testing, etc.); c. <u>Monthly and</u> calendar year operation in terms of fuel consumption (in gallons) and total hours <u>[17 CCR 93115]; and,</u> d. Fuel sulfur concentration (the owner/operator may use the supplier's certification of sulfur content if it is maintained as part of this log) <u>[17 CCR 93115] and;</u> e. <u>Documentation of maintenance as per manufacturer's recommendations and good maintenance practices.</u>	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	On-going	N/A			13-Feb-2013	
Air Quality Emergency Generators	AQ-29 AQ-26	This genset unit is subject to the requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines (Title 17 CCR 93115) and <u>40 CFR 60 Part 60, Subpart III (NSPS)</u> . In the event of conflict between these conditions and the ATCM or NSPS, the more stringent requirements shall govern.	<u>Not necessary. The project owner shall submit to the District and the CPM the engine specifications at least 30 days prior to purchasing the engines for review and approval demonstrating that the engines meet the ATCM and NSPS emission limit requirements at the time of engine purchase.</u>	On-going	N/A			13-Feb-2013	
CONDITIONS APPLICABLE TO IVANPAH 1, 2, & 3 (Three -3) NIGHTTIME PRESERVATION BOILERS. MDAQMD APPLICATION NUMBERS/PERMIT NUMBERS; MD10000063 (B011544), MD10000064 (B011572) & MD10000065 (B011573)									
Air Quality - Nighttime Preservati on Boilers	AQ-27	<u>Operation of this equipment must be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.</u>	<u>Any non-compliant operations shall be listed in the Annual Compliance report (COMPLIANCE-7).</u>	On-going	Annually beginning January 2015	1/30/2015; 1/29/2016		13-Feb-2013	The 2014 Annual Compliance Report was submitted on 1/30/2015
Air Quality - Nighttime Preservati on Boilers	AQ-28	<u>The owner/operator shall operate this equipment in strict accord with the recommendations of the manufacturer or supplier and/or sound engineering principles and consistent with all information submitted with the application for this permit, which produce the minimum emission of air contaminants.</u>	<u>As part of the Annual Compliance Report (COMPLIANCE-7), the project owner shall include information on the date, time, and duration of any violation of this permit condition.</u>	On-going	Annually beginning January 2015	1/30/2015; 1/29/2016		13-Feb-2013	The 2014 Annual Compliance Report was submitted on 1/30/2015
Air Quality - Nighttime Preservati on Boilers	AQ-29	<u>This boiler shall use only natural gas as fuel and shall be equipped with a meter measuring fuel consumption in standard cubic feet.</u>	<u>As part of the Annual Compliance Report (COMPLIANCE-7), the project owner shall include proof that only pipeline quality, or Public Utility Commission regulated natural gas is used in these boilers.</u>	On-going	Annually beginning January 2015	1/30/2015; 1/29/2016		13-Feb-2013	The 2014 Annual Compliance Report was submitted on 1/30/2015. NG supply comes from KRG T pipeline that meets this requirement.
Air Quality - Nighttime Preservati on Boilers	AQ-30	<u>The owner/operator shall maintain a current, on-site (at a central location if necessary) log for this equipment for five (5) years, which shall be provided to District, state, or federal personnel upon request. This log shall include calendar year fuel use for this equipment in standard cubic feet, or BTUs, and daily hours of operation.</u>	<u>During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or Energy Commission staff.</u>	On-going	N/A			13-Feb-2013	

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Air Quality - Nighttime Preservati on Boilers	AQ-31	The owner/operator shall perform annual tune-ups in accordance with the unit manufacturer's specified tune-up procedure, by a qualified technician.	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or Energy Commission staff.	Completed in 2015. Upcoming in 2016	N/A			13-Feb-2013	Completed in 2015. Upcoming in 2016
Air Quality - Nighttime Preservati on Boilers	AQ-32	Records of fuel supplier certifications of fuel sulfur content shall be maintained to demonstrate compliance with the sulfur dioxide and particulate matter emission limits.	Condition of Certification AQ-29 shall be used to demonstrate compliance with this condition.	On-going	N/A			13-Feb-2013	
Air Quality - Nighttime Preservati on Boilers	AQ-33	The owner/operator shall continuously monitor and record fuel flow rate.	At least 120 days prior to construction of the boiler stacks, the project owner shall provide the District for approval, and the CPM for review, a detailed drawing and a plan on how the measurements and recordings, required by this condition, will be performed by the chosen monitoring system.	On-going	120 day prior construction of the Boiler Stacks	21-Aug-2011		13-Feb-2013	Fuel Flow rates are recorded and monitored. Download from the system occurs every quarter.
Air Quality - Nighttime Preservati on Boilers	AQ-34	The combined fuel use from the auxiliary boiler and the nighttime preservation boiler shall not exceed 328,525 MMSCF of natural gas in any calendar year; combined fuel use is the sum total of natural gas combusted from Boilers with MDAQMD permit numbers: B010375 and B011544 (Ivanpah 1), and shall not exceed a total of 525 mmscf in any calendar year in that boiler pair; B010376 and B011572 (Ivanpah 2), and shall not exceed a total of 525 mmscf in any calendar year in that boiler pair; B010377, and B011573 (Ivanpah 3), and shall not exceed a total of 525 mmscf in any calendar year in that boiler pair.	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	Completed in 2013. On-going for 2014	N/A	1/30/2015; 1/29/2016		2/13/2013; 9/15/2014	Submitted with the Annual Compliance Report in 2015
CONDITIONS APPLICABLE TO COMMON AREA EMERGENCY GENERATOR, MDAQMD APPLICATION NUMBERS/PERMIT NUMBERS MD10000061 (E011546)									
Air Quality - Common Area Emergenc y Generator	AQ-35	This engine, certified in accordance with 40 CFR Part 89, and after treatment control device (if any) shall be installed, operated and maintained according to the manufacturer's emission-related written instructions. Further, the owner/operator shall change only those emission-related settings that are permitted by the manufacturer. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit. [40 CFR Part 60, Subparts 60.4205, and 60.42111]	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	On-going	N/A			13-Feb-2013	
Air Quality - Common Area Emergenc y Generator	AQ-36	This unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15 ppm) on a weight per weight basis per CARB Diesel or equivalent requirements. [17 CCR 93115; 60.4207(b)]	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	On-going	N/A			13-Feb-2013	
Air Quality - Common Area Emergenc y Generator	AQ-38	This unit shall not be used to provide power during a voluntary power outage and/or power reduction initiated under an Interruptible Service Contract (ISC), Demand Response Program (DRP), Load Reduction Program (LRP) and/or similar arrangement(s) with the electrical power supplier. [17 CCR 93115] [40 CFR 60 Subpart III allowance for DRP streamlined out.]	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	On-going	N/A			13-Feb-2013	
Air Quality - Common Area Emergenc y Generator	AQ-39	This unit shall be limited to use for emergency power, defined as in response to a fire or when commercially available power has been interrupted. In addition, this unit shall be operated no more than 0.5, 1.0 hrs per day for a total of 50 hours per year for testing and maintenance. [NSR and 17 CCR 93115] [Hours allowed by 60.42(f), streamlined out.]	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	On-going	N/A			2/13/2013; 11/19/2015	
Air Quality - Common Area Emergenc y Generator	AQ-40	The owner/operator shall maintain an operations log for this unit current and on-site (or at a central location) for a minimum of five (5) years, and this log shall be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the information specified below: a. Date of each use and duration of each use (in hours); b. Reason for use (testing & maintenance, emergency, required emission testing, etc.); c. Monthly and calendar year operation in terms of fuel consumption (in gallons) and total hours [17 CCR 93115]; and, d. Fuel sulfur concentration (the o/o may use the supplier's certification of sulfur content if it is maintained as part of this log.) [17 CCR 93115]	During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.	On-going	N/A			13-Feb-2013	

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
CONDITIONS APPLICABLE TO THE COMMON AREA EMERGENCY FIRE PUMP, MDAQMD APPLICATION NUMBERS/PERMIT NUMBERS; MD10000062 (E011547)									
Air Quality - Common Area Emergency Fire Pump	AQ-42	<u>This engine, certified in accordance with 40 CFR Part 89, and after treatment control device (if any) shall be installed, operated and maintained according to the manufacturer's emission-related written instructions. Further, the owner/operator shall change only those emission-related settings that are permitted by the manufacturer. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit. (40 CFR Part 60, Subparts 60.4205 and 60.4211)</u>	<u>During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.</u>	On-going	N/A			13-Feb-2013	
Air Quality - Common Area Emergency Fire Pump	AQ-43	<u>This unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15ppm) on a weight per weight basis per CARB Diesel or equivalent requirements. (17 CCR 93115; 60.4207(b))</u>	<u>During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.</u>	On-going	N/A			13-Feb-2013	
Air Quality - Common Area Emergency Fire Pump	AQ-45	<u>This unit shall be limited to use for emergency purposes, power defined as in response to a fire or when commercially available power has been interrupted. In addition, this unit shall be operated no more than 0.5 1.0 hrs per day for a total of 50 hours per year for testing and maintenance. The 50 hour limit can be exceeded when the emergency fire pump assembly is driven directly by a stationary diesel fueled CI engine operated per and in accord with the National Fire Protection Association (NFPA) 25 "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 1998 edition. This requirement includes usage during emergencies. (District Rule 1302(C)(2)(a) and Rule 1304 (D)(1)(a)) and 17 CCR 93115.3(n)) (Hours allowed by federal regulation 40 CFR 60.42(f) streamlined out as these permit requirements are more stringent than the federal regulatory requirements.)</u>	<u>During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.</u>	On-going	N/A			2/13/2013; 11/19/2015	
Air Quality - Common Area Emergency Fire Pump	AQ-46	<u>The owner/operator shall maintain an operations log for this unit current and on-site (or at a central location) for a minimum of five (5) years, and this log shall be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the information specified below: a. Date of each use and duration of each use (in hours); b. Reason for use (testing & maintenance, emergency, required emission testing, etc.); c. Monthly and calendar year operation in terms of fuel consumption (in gallons) and total hours (17 CCR93115); and, d. Fuel sulfur concentration (the % may use the supplier's certification of sulfur content if it is maintained as part of this log.) (17 CCR 93115).</u>	<u>During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.</u>	On-going	N/A			13-Feb-2013	
Air Quality - Common Area Emergency Fire Pump	AQ-47	<u>These engines may operate in response to fire suppression requirements and needs. (Rule 204).</u>	<u>During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA or CEC staff.</u>	On-going	N/A			13-Feb-2013	
Air Quality General	AQSC-06	The project owner, when obtaining dedicated on or off-road vehicles for mirror washing activities and other facility maintenance activities, shall only obtain new model year vehicles that meet California on-road vehicle emission standards or appropriate U.S.EPA/California off-road engine emission standards for the model year when obtained.	At least 60 days prior to the start of commercial operation, the project owner shall submit to the CPM a copy of the plan that identifies the size and type of the on-site vehicle and equipment fleet and the vehicle and equipment purchase orders and contracts and/or purchase schedule. The plan shall be updated every other year and submitted in the Annual Compliance Report (COMPLIANCE-7).	Submitted	60 days prior start of commercial operations	8/22/2013; 1/29/2016			Off-road vehicles for mirror washing activities plan submitted to CEC/BLM on 8/22/13; Updated in 2015 and submitted in the ACR on 1/29/2016

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Air Quality General	AQSC-07	<p>The project owner shall provide a <u>site operations dust control plan</u>, including all applicable fugitive dust control measures identified in the verification of AQ-SC3 that would be applicable to reducing fugitive dust from ongoing operations; that:</p> <p>A. describes the active operations and wind erosion control techniques such as windbreaks and chemical dust suppressants, including their ongoing maintenance procedures, that shall be used on areas that could be disturbed by vehicles or wind anywhere within the project boundaries; and</p> <p>B. identifies the location of signs throughout the facility that will limit traveling on unpaved portion of roadways to solar equipment maintenance vehicles only. In addition, vehicle speed shall be limited to no more than 10 miles per hour on these unpaved roadways, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.</p> <p>The site Operations Fugitive Dust Control Plan shall include the use of durable non-toxic soil stabilizers on all regularly used unpaved roads and disturbed off-road areas, or alternative methods for stabilizing disturbed off-road areas, within the project boundaries, and shall include the inspection and maintenance procedures that will be undertaken to ensure that the unpaved roads remain stabilized. The soil stabilizer used shall be a non-toxic soil stabilizer or soil weighting agent that can be determined to be both as efficient or more efficient for fugitive dust control as ARB approved soil stabilizers, and shall not increase any other environmental impacts including loss of vegetation.</p> <p><u>The performance and application of the fugitive dust controls shall also be measured against and meet the performance requirements of condition AQ-SC4. The performance requirements of AQ-SC4 shall also be included in the Operations Dust Control Plan.</u></p>	<p><u>At least 60 days prior to start of commercial operation</u>, the project owner shall submit to the BLM's Authorized Officer and the CPM for review and approval a copy of the <u>Site Operations Dust Control Plan</u> that identifies the dust and erosion control procedures, including effectiveness and environmental data for the proposed soil stabilizer, that will be used during operation of the project and that identifies all locations of the speed limit signs.</p> <p><u>Within 60 days after commercial operation</u>, the project owner shall provide to the BLM's Authorized Officer and the CPM a report identifying the locations of all speed limit signs, and a copy of the project employee and contractor training manual that clearly identifies that project employees and contractors are required to comply with the dust and erosion control procedures and on-site speed limits.</p>	Submitted	60 days prior start of commercial operations. 60 days after commercial operations	8/27/2013; 7/30/2014; 1/29/2016			<p>Site Operations Dust Control Plan submitted to CEC/BLM on 8/27/13;</p> <p>Revised Operations Dust Control Plan was submitted to CEC/BLM on 7/30/2014.</p> <p>Dust Control Annual Report was submitted in 2015 Annual Compliance Report</p>
Air Quality General	AQSC-08	<p>The project owner shall provide the CPM copies of all District issued Authority-to-Construct (ATC) and Permit-to-Operate (PTO) for the facility. The project owner shall submit to the CPM for review and approval any modification proposed by the project owner to any project air permit.</p>	<p>The project owner shall submit to the CPM for review and approval any modification proposed by the project owner to any project air permit. The project owner shall submit to the CPM any modification to any permit proposed by the District or U.S. Environmental Protection Agency (U.S. EPA), and any revised permit issued by the District or U.S. EPA, for the project. The project owner shall submit any ATC, PTO, and proposed air permit modification to the CPM within 5 working days of its submittal either by 1) the project owner to an agency, or 2) receipt of proposed modifications from an agency. The project owner shall submit all modified air permits to the CPM within 15 days of receipt.</p>	Submitted	Within 5 days of submittal; Within 15 days of receipt.	11/19/2013; 12/10/2015			<p>MDAQMD/ATC Permits - exp. 10/31/14 was submitted to CEC on 11/19/13.</p> <p>2014 - 2015 Revised ATC/PTO (exp. 10/31/2015) were received from MDAQMD on 12/18/2014. Submittal was hold-off due to impending revisions/submittal of PTA to be consistent with CEC Conditions of Certifications</p>
Air Quality General	AQSC-10	<p>The ISEGS 1, ISEGS 2, and ISEGS 3 boilers shall not exceed a total annual natural gas-fuel heat input that is more than 5 percent of the total annual heat input from the sun for ISEGS1, ISEGS2, and ISEGS 3, respectively.</p>	<p>Annual natural gas-fuel heat input data and annual solar heat input data for the ISEGS 1, ISEGS 2, and ISEGS 3 units showing compliance with this condition shall be provided in the Annual Compliance Report (COMPLIANCE 7). The Annual Compliance Report shall include information separately for ISEGS 1, ISEGS 2, and ISEGS 3. The Initial Compliance Report shall include documentation of the methodology used to verify compliance with this condition. The documentation shall include a heat balance diagram, engineering analysis, assumptions and supporting data.</p>	Deleted	Annually beginning 2015			9/15/2014	AQ amendment was approved by CEC on 9/15/2014.
Biological Resources	BIO-02	<p>Designated Biologists Duties: The project owner shall ensure that the Designated Biologist performs the following during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, and closure activities. The Designated Biologist may be assisted by the approved Biological Monitor(s) but remains the contact for the project owner, BLM's Authorized Officer and the CPM. The Designated Biologist Duties shall include the following:</p> <ol style="list-style-type: none"> 1. Advise the project owner's Construction and Operation Managers on the implementation of the biological resources conditions of certification; 2. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) to be submitted by the project owner; 3. Be available to supervise, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special-status species or their habitat; 4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions; 	<p>The Designated Biologist shall submit in the Monthly Compliance Report to BLM's Authorized Officer and the CPM and copies of all written reports and summaries that document biological resources compliance activities. If actions may affect biological resources during operation, a Designated Biologist shall be available for monitoring and reporting. <u>During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless his/her duties cease, as approved by BLM's Authorized Officer and the CPM.</u></p>	Completed at End of Construction (5/31/2014). ONGOING for Operations beginning June 2014.	Annually beginning January 2015	1/30/2015; 1/29/2016			<p>The submittal of the final Monthly Compliance Report was in June 2014 for the month of May 2014. The first Annual Compliance Report was submitted on January 30, 2015.</p>

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Biological Resources	BIO-02 (Continued)	<p>5. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm's way;</p> <p>6. Notify the project owner and BLM's Authorized Officer and the CPM of any non-compliance with any biological resources condition of certification;</p> <p>7. Respond directly to inquiries of BLM's Authorized Officer and the CPM regarding biological resource issues;</p> <p>8. Maintain written records of the tasks specified above and those include in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Compliance Report;</p> <p>9. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and USFWS guidelines on desert tortoise surveys and handling procedures <www.fws.gov/ventura/speciesinfo/protocols_guidelines>; and</p> <p>10. Maintain the ability to be in regular, direct communication with representatives of CDFG, USFWS, BLM's Authorized Officer and the CPM, including notifying these agencies of dead or injured listed species and reporting special-status species observations to the California Natural Diversity Data Base.</p>	<p>The Designated Biologist shall submit in the Monthly Compliance Report to BLM's Authorized Officer and the CPM and copies of all written reports and summaries that document biological resources compliance activities. If actions may affect biological resources during operation a Designated Biologist shall be available for monitoring and reporting. <u>During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless his/her duties cease, as approved by BLM's Authorized Officer and the CPM.</u></p>	<p>Completed at End of Construction (5/31/2014).</p> <p>ONGOING for Operations beginning June 2014.</p>	<p>Annually beginning January 2015</p>	<p>1/30/2015; 1/29/2016</p>			<p>The submittal of the final Monthly Compliance Report was in June 2014 for the month of May 2014. The first Annual Compliance Report was submitted on January 30, 2015.</p>
Biological Resources	BIO-04	<p>Biological Monitor Duties: The Biological Monitors shall assist the Designated Biologist in conducting surveys and in monitoring of mobilization, ground disturbance, grading, construction, operation, and closure activities. The Designated Biologist shall remain the contact for the project owner, BLM's Authorized Officer and the CPM.</p>	<p>The Designated Biologist shall submit in the Monthly Compliance Report to BLM's Authorized Officer and the CPM and copies of all written reports and summaries that document biological resources compliance activities, including those conducted by Biological Monitors. <u>If actions may affect biological resources during operation a Biological Monitor, under the supervision of the Designated Biologist, shall be available for monitoring and reporting.</u> During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless their duties cease, as approved by BLM's Authorized Officer and the CPM.</p>	<p>Completed at End of Construction (5/31/2014).</p> <p>ONGOING for Operations beginning June 2014.</p>	<p>Annually beginning January 2015</p>	<p>1/30/2015; 1/29/2016</p>			<p>The submittal of the final Monthly Compliance Report was in June 2014 for the month of May 2014. The first Annual Compliance Report was submitted on January 30, 2015.</p>
Biological Resources	BIO-06	<p>Workers Environmental Awareness Program (WEAP): The project owner shall develop and implement an Ivanpah SEGS-specific Worker Environmental Awareness Program (WEAP) and shall secure approval for the WEAP from BLM's Authorized Officer and the CPM. The USFWS and CDFG shall be provided a copy of the WEAP for review and comment. The WEAP shall be administered to all onsite personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors, and delivery personnel. The WEAP shall be implemented during site mobilization, ground disturbance, grading, construction, operation, and closure. The WEAP shall:</p> <p>1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media, including photographs of protected species, is made available to all participants.</p> <p>2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas, and explain the reasons for protecting these resources; provide information to participants that Gila monsters are venomous and should not be handled, and that no snakes, reptiles, or other wildlife shall be harmed;</p> <p>3. Place special emphasis on desert tortoise, including information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;</p> <p>4. Include a discussion of fire prevention measures to be implemented by workers during project activities; request workers dispose of cigarettes and cigars appropriately and not leave them on the ground or buried;</p> <p>5. Present the meaning of various temporary and permanent habitat protection measures;</p> <p>6. Identify whom to contact if there are further comments and questions about the material discussed in the program; and</p> <p>7. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.</p> <p>The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.</p>	<p>At least 60 days prior to the start of any project-related site disturbance activities, the project owner shall provide to BLM's Authorized Officer and the CPM a copy of the draft WEAP and all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program. The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. At least 10 days prior to site and related facilities mobilization, the project owner shall submit two copies of the BLM- and CPM-approved final WEAP.</p> <p><u>Training acknowledgement forms signed during construction shall be kept on file by the project owner for at least six months after the start of commercial operation.</u></p> <p>Throughout the life of the project, the worker education program shall be repeated annually for permanent employees, and shall be routinely administered within one week of arrival to any new construction personnel, foremen, contractors, subcontractors, and other personnel potentially working within the project area. Upon completion of the orientation, employees shall sign a form stating that they attended the program and understand all protection measures. These forms shall be maintained by the project owner and shall be made available to BLM's Authorized Officer and the CPM and upon request. Workers shall receive and be required to visibly display a hardhat sticker or certificate that they have completed the training. <u>During project operation, signed statements for operational personnel shall be kept on file for six months following the termination of an individual's employment.</u></p>	<p>Approved - COMPLETED (CONSTRUCTION)</p> <p>ONGOING DURING OPERATIONS</p>	<p>60 prior Start of Site Disturbance Activities.</p> <p>ANNUALLY DURING OPERATIONS.</p>	<p>6-Jul-2010</p>	<p>3-Oct-2010</p>		<p>Approved and WEAP reported in the MCR during construction.</p> <p>ONGOING DURING OPERATIONS;</p>

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Biological Resources	BIO-07	<p><u>Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP)</u>: The project owner shall develop a BRMIMP and submit two copies of the proposed BRMIMP to the BLM-Authorized Officer and the CPM (for review and approval) and shall implement the measures identified in the approved BRMIMP. The BRMIMP shall incorporate avoidance and minimization measures described in final versions of the Desert Tortoise Translocation Plan, the Raven Management Plan, the Closure, Revegetation and Rehabilitation Plan, the Burrowing Owl Mitigation and Monitoring Plan, the Weed Management Plan and the Special Status Plant Remedial Action Plan. The BRMIMP shall be prepared in consultation with the Designated Biologist and include the following:</p> <ol style="list-style-type: none"> 1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner; 2. All biological resources conditions of certification identified as necessary to avoid or mitigate impacts; 3. All biological resource mitigation, monitoring and compliance measures required in federal agency terms and conditions, such as those provided in the USFWS Biological Opinion; 4. All sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation, and closure; 5. All required mitigation measures for each sensitive biological resource; 6. A detailed description of measures that shall be taken to avoid or mitigate temporary disturbances from construction activities; 7. All locations on a map, at an approved scale, of sensitive biological resource areas subject to disturbance and areas requiring temporary protection and avoidance during construction and operation; 	<p>Owner shall submit the BRMIMP to the BLM Authorized Officer and the CPM at least 60 days prior to start of any project-related site disturbance activities. The BRMIMP shall contain all of the required measures included in all biological Conditions of Certification. No ground disturbance may occur prior to approval of the final BRMIMP by BLM's Authorized Officer and the CPM. BLM's Authorized Office and the CPM, in consultation with other appropriate agencies, will determine the BRMIMP's acceptability within 45 days of receipt. If there are any permits that have not yet been received when the BRMIMP is first submitted, these permits shall be submitted to BLM's Authorized Office and the CPM within five days of their receipt, and the BRMIMP shall be revised or supplemented to reflect the permit condition within at least 10 days of their receipt by the project owner. Ten days prior to site and related facilities mobilization the revised BRMIMP shall be resubmitted to BLM's Authorized Officer and the CPM.</p>	<p>Approved - COMPLETED (CONSTRUCTION)</p> <p>ONGOING DURING OPERATIONS</p>	60 prior Start of Site Disturbance Activities.	7/16/2010; REVISION 2-UPDATED 4/11/2012 PER CEC REQUEST/ Revised Biological Opinion USFWS 4/22/12 added Re:Translocation			As a living document with many plans, approvals are given as revisions and updates are made to any of the plans, the latest revisions are kept on-site hard copy and electronically
Biological Resources	BIO-07 (continued)	<ol style="list-style-type: none"> 8. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities; include one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction. Provide planned timing of aerial photography and a description of why times were chosen. Provide a final accounting of the before/after acreages and a determination of whether additional habitat compensation is necessary in the Construction Termination Report; 9. Duration for each type of monitoring and a description of monitoring methodologies and frequency; 10. Performance standards to be used to help decide if/when proposed mitigation is or is not successful; 11. All performance standards and remedial measures to be implemented if performance standards are not met; 12. A discussion of biological resources-related facility closure measures including a description of funding mechanism(s); and 13. A process for proposing plan modifications to BLM's Authorized Officer and the CPM and appropriate agencies for review and approval; and 	<p>Owner shall notify BLM's Authorized Officer and the CPM and no less than five working days before implementing any modifications to the approved BRMIMP to obtain BLM's Authorized Officer and CPM approval.</p> <p>Any changes to the approved BRMIMP must also be approved by BLM's Authorized Officer and the CPM and in consultation with appropriate agencies to ensure no conflicts exist. Implementation of BRMIMP measures (construction activities that were monitored, species observed) will be reported in the Monthly Compliance Reports by the Designated Biologist.</p>	<p>Approved - COMPLETED (CONSTRUCTION)</p> <p>ONGOING DURING OPERATIONS</p>	Monthly MCR	7/16/2010; REVISION 2-UPDATED 4/11/2012 PER CEC REQUEST/ Revised Biological Opinion USFWS 4/22/12 added Re:Translocation			As a living document with many plans, approvals are given as revisions and updates are made to any of the plans, the latest revisions are kept on-site hard copy and electronically
Biological Resources	BIO-07 (continued-1)	<ol style="list-style-type: none"> 8. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities; include one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction. Provide planned timing of aerial photography and a description of why times were chosen. Provide a final accounting of the before/after acreages and a determination of whether additional habitat compensation is necessary in the Construction Termination Report; 9. Duration for each type of monitoring and a description of monitoring methodologies and frequency; 10. Performance standards to be used to help decide if/when proposed mitigation is or is not successful; 11. All performance standards and remedial measures to be implemented if performance standards are not met; 12. A discussion of biological resources-related facility closure measures including a description of funding mechanism(s); and 13. A process for proposing plan modifications to BLM's Authorized Officer and the CPM and appropriate agencies for review and approval; and 	<p><i>Within 30 days after completion of project construction, the project owner shall provide to BLM's Authorized Officer and the CPM, for review and approval, a written construction termination report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's site mobilization, ground disturbance, grading, and construction phases, and which mitigation and monitoring items are still outstanding.</i></p>	Submitted	30 days after completion of Project Construction	6/30/2014; 7/1/2014			<p>Project Construction was completed and approved by CEC on 5/31/2014.</p> <p>Construction Termination Report was submitted on 6/30/14.</p> <p>Post-Construction Closure, Revegetation and Rehabilitation Plan Report was submitted on 7/1/2014.</p>

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Biological Resources	BIO-10 (Continued-1)	<p>3. Remain onsite daily while vegetation salvage, grubbing, grading and heliostat installation activities are taking place 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 protective zones.</p> <p>4. 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 onsite to monitor construction and determine fence placement during fence installation.</p> <p>5. Conduct compliance inspections at a minimum of once per month after clearing, grubbing, grading, and heliostat installation activities are completed and submit a monthly compliance report to BLM's Authorized Officer and the CPM ;</p> <p>6. No later than January 31 of every year the ISEGS facility remains in operation, provide BLM's Authorized Officer and the CPM an annual Listed Species Status Report, which shall include, at a minimum:</p> <p>1) a general description of the status of the project site and construction activities, including actual or projected completion dates, if known;</p> <p>2) a copy of the table in the BRMIMP with notes showing the current implementation status of each mitigation measure; and</p> <p>3) an assessment of the effectiveness of each completed or partially completed mitigation measure in minimizing and compensating for project impacts;</p>	<p>No later than 2 calendar days following the above required notification of a sighting, kill, or relocation of a listed species, the project owner shall deliver to BLM's Authorized Officer, the CPM, CDFG, and USFWS via FAX or electronic communication the written report from the Designated Biologist describing all reported incidents of 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 BLM's Authorized Officer, the CPM, CDFG and USFWS.</p>	ONGOING DURING OPERATIONS	Annually beginning January 2015	1/31/2011; 2011 Special Status Plants Annual Compliance Report submitted January 2012, revised March 7, 2012 and submitted; 2014 Annual Compliance Report submitted on 1/30/2015; 1/29/2016			Annual Compliance Report is due on Jan. 31st. Annually. The first Annual Compliance Report was submitted on 1/30/2015
Biological Resources	BIO-11 (Continued-3)	<p>11. Avoid Wildlife Pitfalls:</p> <p>a. Backfill Trenches. At the end of each work day, the Designated Biologist shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) outside the area fenced with desert tortoise exclusion fencing have been backfilled. If backfilling is not feasible, all trenches, bores, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with desert tortoise-exclusion fencing. All trenches, bores, and other excavations outside the areas permanently fenced with desert tortoise exclusion fencing shall be inspected periodically throughout the day and at the end of each workday by the Designated Biologist or a Biological Monitor. Should a tortoise or other wildlife become trapped, the Designated Biologist or Biological Monitor shall remove and relocate the individual as described in the Desert Tortoise Relocation/Translocation Plan. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.</p> <p>b. Avoid Entrapment of Desert Tortoise. Any construction pipe, culvert, or similar structure with a diameter greater than 3 inches, stored less than 8 inches aboveground and within desert tortoise habitat (i.e., outside the permanently fenced area) for one or more nights, shall be inspected for tortoises before the material is moved, buried or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on pipe racks. These materials would not need to be inspected or capped if they are stored within the permanently fenced area after the clearance surveys have been completed. c. Cap Heliostat Holes. All holes drilled for heliostats shall be capped the same day they are drilled. Caps shall remain on the holes until heliostats are inserted into the holes, and shall be securely fastened and sufficiently sturdy to cover the heliostat holes indefinitely. The caps shall exclude all wildlife, and shall be inspected weekly by the Designated Biologist or Biological Monitors to ensure that the caps remain in place and that birds and terrestrial wildlife have not become trapped.</p> <p>12. Minimize Standing Water. Water applied to construction areas and dirt roads for dust abatement shall use the minimal amount needed to meet safety and air quality standards in an effort to prevent the formation of puddles, which could attract desert tortoises, common ravens and coyotes to construction sites.</p>	<p>All mitigation measures and their implementation methods shall be included in the BRMIMP. Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to BLM's Authorized Officer and the CPM, for review and approval, a written construction termination report identifying how measures have been completed.</p> <p>The Designated Biologist shall report summarizing all available data (species of carcass, date and location collected, and cause of death) describing bird and other carcasses collected within the project site each year.</p>	Submitted	30 days after completion of Project Construction	6/30/2014; 7/1/2014			Project Construction was completed and approved by CEC on 5/31/2014. Construction Termination Report was submitted on 6/30/14. Post-Construction Closure, Revegetation and Rehabilitation Plan Report was submitted on 7/1/2014.
				ONGOING	Annually beginning January 2015	1/30/2015; 1/29/2016			

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Biological Resources	BIO-11 (Continued-4)	<p>13. Dispose of Roadkilled Animals. Road killed animals or other carcasses detected in the project area or on roads near the project area shall be picked up immediately and delivered to the Biological Monitor. Within 1 working day of receipt of the carcass the Biological Monitor shall contact CDFG and/or USFWS for guidance on disposal or storage of the carcass.</p> <p>14. Photographic Documentation of Bird Carcasses. On-site personnel shall photograph and record the location of all bird carcasses encountered and location data to the Designated Biologist. The Designated Biologist shall identify the bird, ascertain a cause of death if possible, maintain a database of this information for all bird carcasses and each year of operation shall provide a report summarizing this information to the CPM, BLM's Authorized Officer, CDFG, and USFWS.</p> <p>15. Minimize Spills of Hazardous Materials. All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The Designated Biologist shall be informed of any hazardous spills immediately as directed in the project Hazardous Materials Plan. Hazardous spills shall be immediately cleaned up and the contaminated soil properly disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated area. Service/maintenance vehicles shall carry a bucket and pads absorb leaks or spills.</p> <p>16. Worker Guidelines. During construction all trash and food-related waste shall be placed in self-closing containers and removed daily from the site. Workers shall not feed wildlife or bring pets to the project site. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons. Vehicular traffic shall be confined to existing routes of travel to and from the project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit when traveling on Colosseum Road and other dirt access routes within desert tortoise habitat shall not exceed 20 miles per hour.</p> <p>17. Monitor Ground Disturbing Activities Prior to Site Mobilization. If ground disturbing activities are required prior to site mobilization, such as for geotechnical borings or hazardous waste evaluations, a Designated Biologist or Biological Monitor shall be present to monitor any actions that could disturb soil, vegetation, or wildlife.</p>	<p>All mitigation measures and their implementation methods shall be included in the BRMMP. Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to BLM's Authorized Officer and the CPM, for review and approval, a written construction termination report identifying how measures have been completed.</p> <p><i>The Designated Biologist shall report summarizing all available data (species of carcass, date and location collected, and cause of death) describing bird and other carcasses collected within the project site each year.</i></p>	ONGOING DURING OPERATIONS - ANNUALLY	Annually beginning January 2015	1/30/2015; 1/29/2016			Information to be reported annually in the Annual Compliance Report
Biological Resources	BIO-12	<p><u>Raven Management Plan:</u> The project owner shall implement a <u>Raven Management Plan</u> that is consistent with the most current USFWS-approved raven management guidelines, and which meets the approval of USFWS, BLM Authorized Officer, and the CPM in consultation with CDFG. The draft Raven Management Plan submitted by The applicant (CH2M Hill 2008f) shall provide the basis for the final plan, subject to review and revisions from USFWS, BLM Authorized Officer and the CPM in consultation with CDFG. The project owner shall submit payment to the project sub-account of the REAT Account held by the National Fish and Wildlife Foundation (NFWF) to support the USFWS Regional Raven Management Program. The amount shall be a one-time payment of \$105 per acre of permanent disturbance.</p>	<p>Within 60 days after completion of project construction, the project owner shall provide to the CPM for review and approval, a written report identifying which items of the Raven Management Plan have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which items are still outstanding.</p>	Submitted ONGOING REPORTING DURING OPERATIONS	60 days after completion of project construction. Not later than Dec. 31st each Raven Management Year	7/31/2014; 12/31/2014; 1/5/2015; 12/30/2015			<p>Report identifying which items of the Raven Management Plan (Post Construction Raven Management Report) have been completed was submitted to CEC and BLM on 7/31/2014.</p> <p>Annual Monitoring Report per the Raven Management Plan was submitted on 12/31/2014. Resubmitted on 1/5/2015 with maps</p>

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Biological Resources	BIO-14	<p>Closure, Revegetation and Rehabilitation Plan: The project owner shall develop and implement a revised Closure, Revegetation and Rehabilitation Plan (Plan) in cooperation with BLM and Energy Commission staff, to guide site restoration and closure activities, including methods proposed for revegetation of disturbed areas immediately following construction and rehabilitation and revegetation upon closure of the facility. This plan must address preconstruction salvage and relocation of succulent vegetation from the site to an onsite nursery facility for storage and propagation of material to reclaim disturbed areas. In the case of unexpected closure, the plan assumes restoration activities could possibly take place prior to the anticipated lifespan of the plant. The Plan shall address all issues discussed in Biological Resources Appendix-B: Issues to Address in the Closure, Revegetation and Rehabilitation Plan, and shall include but is not limited to the following elements in the revised plan:</p> <p>1. Plan Purpose: The plan shall explicitly identify the objective of the revegetation plan to be re-creation of the types of habitats lost during construction and operation of the proposed solar energy facility. The final revegetation plan shall include introduction of mid- to late-successional species.</p> <p>2. Standards/Monitoring: Performance standards for success thresholds, weed cover, performance monitoring methods and schedule, and maintenance monitoring in the revised Plan shall be conducted as described in Biological Resources Appendix B.</p> <p>3. Baseline Surveys – Baseline vegetation surveys for planning restoration efforts shall be conducted as described in Biological Resources Appendix B.</p> <p>4. Vegetation Clearing: Clearing of vegetation shall be limited to areas for which final maps are provided to BLM before approval of the ROW. Clearing of vegetation will be permitted on roads, utility routes, heliostat maintenance pathways, building and parking areas, and temporary staging areas provided these are specifically documented on a georeferenced construction alignment drawing or aerial photo or shape file, showing the exact locations of soil disturbance. BLM will consider relocating specific installations prior to the beginning of construction and during construction on a case by case basis but will not approve additional acreage beyond that addressed in the current application.</p> <p>5. Vegetation Mowing: Vegetation mowing shall be limited to areas adjoining vehicle pathways used for heliostat installation to allow installation of the heliostat pylon and allow for tracking clearance under the heliostat. Vegetation mowing may be repeated during the life of the facility to maintain appropriate clearance for heliostat tracking.</p>	<p>Within 30 days after completion of project construction for each phase of development, the project owner shall provide to BLM's Authorized Officer and the CPM for review and approval, a written report identifying which items of the Closure, Revegetation and Rehabilitation Plan have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which items are still outstanding.</p>	Submitted; Annually	30 days after completion of construction; Annually beginning 2015	6/30/2014; 1/30/2015; 1/29/2016			Report identifying which items of the Closure, Revegetation and Rehabilitation Plan have been completed was submitted to CEC and BLM on 6/30/2014. Revegetation Annual monitoring Report submitted in the Annual Compliance Report
			<p>6. Succulent Salvage: The revised Plan shall include a table that shows proposed succulent salvage by species the number of plants onsite, the lower threshold height for salvage, the number in each size class, and the fate of plants not salvaged. An inventory and map of proposed succulent transplants shall be provided as described in Appendix A. Information gained from succulent transplant experience gained in ISEGS 1 shall be applied to future salvage operations, as described in Biological Resources Appendix B.</p> <p>7. Seed Handling: Seed collection, testing and application shall be conducted as described in Biological Resources Appendix B, with collection areas within 10 miles of the project boundaries and on similar terrain, soil, exposure, slope, and elevation to the project site.</p> <p>8. Soil Preparation: Soil descriptions, compaction measurements, mulch application, soil storage, seed farming, mycorrhizal inoculation, and biological crust collection and storage shall be conducted as described in Biological Resources Appendix B. Soil stockpiles shall not be placed on areas that support special-status plant species or other sensitive biological resources.</p> <p>9. Weed Management: Weed management activities needed to control weeds resulting from mirror washing shall be conducted as described in Biological Resources Appendix B.</p> <p>10. Final Closure Plan. A Final Closure Plan, which addresses the final revegetation and rehabilitation activities upon closure and decommissioning of the project, shall be completed as part of the revised Plan. The Final Closure Plan shall include a cost estimate, adjusted for inflation, reflecting the costs of the revegetation, rehabilitation, and monitoring for the duration of time estimated to achieve the objective of recreating plant communities impacted by the project</p> <p>11. The project owner shall implement the Closure, Revegetation, and Rehabilitation Plan, Revision 3, dated July 6, 2010, with the following modifications.</p> <p>a. The long-term soil stockpiles, as discussed in Table 5-2 of the Plan, shall be no higher than 6 feet.</p>	<p>At least one year prior to planned closure and decommissioning the project owner shall submit to the BLM-Authorized Officer and the CPM a final Closure Plan for review to determine if revisions are needed. The project owner shall incorporate all required revisions to the final Closure Plan and submit to the BLM-Authorized Officer and the CPM no less than 90 days prior to the start of ground disturbing activities associated with closure and decommissioning activities.</p>	Not Yet Started	1 year prior planned closure and decommissioning of the project			
Biological Resources	BIO-14 (Continued-1)	<p>6. Succulent Salvage: The revised Plan shall include a table that shows proposed succulent salvage by species the number of plants onsite, the lower threshold height for salvage, the number in each size class, and the fate of plants not salvaged. An inventory and map of proposed succulent transplants shall be provided as described in Appendix A. Information gained from succulent transplant experience gained in ISEGS 1 shall be applied to future salvage operations, as described in Biological Resources Appendix B.</p> <p>7. Seed Handling: Seed collection, testing and application shall be conducted as described in Biological Resources Appendix B, with collection areas within 10 miles of the project boundaries and on similar terrain, soil, exposure, slope, and elevation to the project site.</p> <p>8. Soil Preparation: Soil descriptions, compaction measurements, mulch application, soil storage, seed farming, mycorrhizal inoculation, and biological crust collection and storage shall be conducted as described in Biological Resources Appendix B. Soil stockpiles shall not be placed on areas that support special-status plant species or other sensitive biological resources.</p> <p>9. Weed Management: Weed management activities needed to control weeds resulting from mirror washing shall be conducted as described in Biological Resources Appendix B.</p> <p>10. Final Closure Plan. A Final Closure Plan, which addresses the final revegetation and rehabilitation activities upon closure and decommissioning of the project, shall be completed as part of the revised Plan. The Final Closure Plan shall include a cost estimate, adjusted for inflation, reflecting the costs of the revegetation, rehabilitation, and monitoring for the duration of time estimated to achieve the objective of recreating plant communities impacted by the project</p> <p>11. The project owner shall implement the Closure, Revegetation, and Rehabilitation Plan, Revision 3, dated July 6, 2010, with the following modifications.</p> <p>a. The long-term soil stockpiles, as discussed in Table 5-2 of the Plan, shall be no higher than 6 feet.</p>	See above sections	In Progress					

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Biological Resources	BIO-14 (Continued-2)	<p>b. The Preliminary Seeding Plan for Short-Term Disturbed Areas, and to be used as the basis for the seeding during final project decommissioning, shall be based upon the species list provided in Table 7-1 of the Plan rather than the species list in Table 7-2. The list may be modified at the time of decommissioning based on seed availability.</p> <p>c. Concrete will be removed to a minimum depth of 6 feet unless it is shown that a particular area is prone to flood hazards and a greater depth for concrete removal should be required. All concrete removed shall be hauled off the project site and disposed of in an approved facility. Crushed concrete shall not be used as backfill on the site during decommissioning.</p> <p>d. Succulents salvaged during project construction shall not be sold by the project owner. Should excess succulents be removed that cannot be transplanted in the Succulent Nursery Area, their disposition will be managed by BLM.</p>	See above sections	In Progress					
Biological Resources	BIO-16	5. Submit a Burrowing Owl Mitigation and Monitoring Plan to the CPM and CDFG for review and approval prior to relocation of owls (and incorporate it into the project's BRMIMP) as well as a construction termination report with results to CDFG and CPM 30 days after completing owl relocation and monitoring and at least 30 days prior to the start of commercial operation.	Within 30 days after completion of owl relocation and monitoring, and the start of ground disturbance or at least 90 days prior to the sale of power, the project owner shall provide to the CDFG, CPM and BLM a written construction termination report identifying how measures have been completed.	Submitted	30 days after completion of project construction	6/30/2014; 7/1/2014			Construction Termination Report was submitted to CEC and BLM on 6/30/2014. Post-Construction Closure, Revegetation and Rehabilitation Plan Report was submitted on 7/1/2014.
Biological Resources	BIO-17 (Continued-1)	<p>of Nipton, Nipton Road between the California-Nevada border and the junction of I-15, Ivanpah Road, Interstate 15 from Nipton Road to the Ivanpah Dry Lake, US Highway 95 through Piute Valley from the California-Nevada border to the town of Goffs, opr the boundary for the community of Goffs. Some of these roads (e.g. portions of Nipton Road and Ivanpah Road) may require fencing associated with the tortoise translocation plan. Any fencing deemed necessary for tortoise translocation would be above and beyond the 50 miles required by this mitigation measure. In lieu of acquiring lands and implementing habitat enhancement or rehabilitation activities itself, the projectowner may satisfy the requirements of this condition by depositing funds into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation</p> <p>(NFWF) in an amount equivalent to the sum of: 1) BLM's compensatory mitigation cost to cover the cost of fencing and route restoration, calculated using formulas for biological Resource Compensation/Mitigation Cost Estimate Breakdown for use with the REAT-NFWF Mitigation Account Table of Estimated Costs dated July 13, 2010; 2) the Energy Commission's Complementary Mitigation Security for acquisition; and 3) the Long-Term Maintenance of Fencing and Habitat Restoration Fee; and 3) the NFWF administrative fee calculation, as shown in the following table:</p> <p>Biological Resources Mitigation/Compensation Cost Estimate Table - July 13, 20101 corrected Desert Tortoise Compensation Number of Acres 3582 Estimated number of parcels to be acquired, at 40 acres per parcel2 90 Land cost at \$1000/acre3 \$ 3,582,000.00 Level 1 Environmental Site Assessment at \$3000/parcel \$ 270,000.00 Appraisal at no less than \$5,000/parcel \$ 450,000.00 Initial site work - clean-up, restoration or enhancement, at \$250/acre4 \$ 895,500.00 Closing and Escrow Cost at \$5000/parcels \$ 450,000.00 Biological survey for determining mitigation value of land (habitat based with species specific augmentation) at \$5000/parcel \$ 450,000.00</p>	<p>A minimum of three months prior to acquisition of the property, the project owner shall submit a formal acquisition proposal to the CPM, CDFG, USFWS and BLM describing the parcels intended for purchase. No later than 18 months following the publication of the Energy Commission Decision the project owner shall provide written verification to the CPM and CDFG that the Energy Commission compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient(s).</p> <p>The project owner, or an approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of project ground disturbing activities. If NFWF or another approved third party is being used for the acquisition, the project owner shall insure that funds needed to accomplish the acquisition are transferred in timely manner to facilitate the planned acquisition and to ensure the land can be acquired and transferred prior to the 18-month deadline. Within six months of the land or easement purchase, as determined by the date on the title, the project owner, or an approved third party, shall provide CDFG and the CPM with a management plan for the Energy Commission compensation lands and associated funds. The CPM shall review and approve the management plan, in consultation with CDFG, BLM and the USFWS. <u>Within 90 days after completion of project construction, the project owner shall provide to the CPM and CDFG an analysis with the final accounting of the amount of habitat disturbed during project construction. If habitat disturbance exceeds 3,582 acres, the project owner shall provide a compensation plan to the CPM and CDFG for their review and approval, in consultation with CDFG, BLM and the USFWS. The compensation plan shall be submitted no later than 90 days from the CPM's receipt of the final accounting, and shall include a description of additional funds required or lands that must be purchased to compensate for the unanticipated habitat disturbances, and a schedule for that acquisition or funding inclusive of all associated long-term management and maintenance and enhancement costs.</u></p>	Submitted	90 days after completion of project construction	29-Aug-2014			

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Biological Resources	BIO-17 (Continued-2)	<p>3rd Party Administrative Costs (Land Cost x 10%+6 \$ 358,200.00 Agency cost to accept land donation⁷ (Land Cost x 15%) x 1.17 (17% of the 15% for overhead) \$ 628,641.00 SUBTOTAL - Acquisition and Initial Site Work \$ 7,084,341.00 Long-term Management and Maintenance Fund (LTMM) fee at \$1450/acre 8 \$ 5,193,900.00 NFWF Fees Establish Project Specific Account \$ 12,000.00 NFWF Management fee⁹ for Acquisition and Enhancement Actions (Subtotal x 3%) \$ 212,530.23 NFWF Management Fee for LTMM account (LTMM x 1%) \$ 51,939.00 Subtotal of NFWF Fees \$ 276,469.23 TOTAL Estimated cost for deposit in project specific REAT-NFWF Account \$ 12,554,710.23</p> <p>acquisition of 7,164 acres of compensation lands and maintenance of fencing and habitat enhancements shall include the following:</p> <p>1. Responsibility for Acquisition of Lands: The project owner may delegate its responsibility for acquisition of compensation lands to a third party, such as a non-governmental organization supportive of Mojave Desert habitat conservation. Such delegation shall be subject to approval in writing by the CPM, in consultation with BLM, CDFG and USFWS, prior to land acquisition, enhancement or management activities. If habitat disturbance exceeds that described in this analysis, the project owner shall be responsible for funding acquisition, habitat improvements and long-term 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. Water and mineral rights shall be included as part of the land acquisition. Agreements to delegate land acquisition to CDFG or an approved third party and to manage compensation lands shall be implemented within 18 months of the Energy Commission's decision.</p>	<p>If the project owner elects to satisfy its mitigation obligations by paying an in-lieu fee instead of acquiring compensation lands, pursuant to Fish and Game code sections 2069 and 2099 or any other applicable in-lieu fee provision, the Project owner shall notify the Commission that it would like a determination that the Project's in-lieu fee proposal meets CEQA and CESA requirements.</p> <p>No more than 60 days prior to ground-disturbing project activities, the project owner shall provide to the CPM for review and approval a PAR or PAR-like analysis to establish the appropriate amount for the long-term maintenance fee to fund maintenance of the proposed enhancement actions (desert tortoise exclusion fencing and DWMA route restoration).</p> <p>No more than 30 days prior to ground-disturbing project activities, the project owner shall deposit the long-term maintenance fee to the REAT-NFWF account or another third-party recipient approved by the CPM in consultation with CDFG.</p> <p>Starting with the first year following construction and continuing for the duration of project impacts, the project owner shall provide to the CPM and CDFG an annual report describing: the results of the annual inspection of fencing and rehabilitated routes; a summary of fence repairs and maintenance of reclaimed routes completed during the year; and recommendations and a cost estimate for repairs and maintenance activities needed for the upcoming year. If the project owner elects to satisfy its mitigation obligations by paying an in-lieu fee instead of acquiring compensation lands, pursuant to Fish and Game code sections 2069 and 2099 or any other applicable in-lieu fee provision, the Project owner shall notify the Commission that it would like a determination that the Project's in-lieu fee proposal meets CEQA and CESA requirements.</p>	IN PROGRESS	Annually beginning January 2015	1/30/2015; 1/29/2016			Submitted in the Annual Compliance Report
Biological Resources	BIO-18 (continued-1)	<p>3. <u>Identify and Establish Special-Status Plant Protection Areas</u> The project owner shall identify Special-Status Plant Protection Areas for exclusion from the project footprint and avoidance of project-related impacts of any kind to facilitate achieving the 75 % protection goal. To accurately identify the boundaries of these areas, pre-construction floristic surveys shall be conducted by a qualified botanist at the appropriate time of year for special-status plant identification including both spring and summer/fall blooming periods. Summer/fall surveys will be conducted after rains that are likely to cause plant germination and may be suspended in years where no such rains occurs. The surveys shall encompass at a minimum the three areas totalling 476 acres and labelled "Rare Plant Mitigation Area" in Project Description Figure 13 and shall extend 150 feet on both sides of the proposed gas pipeline alignment and 250 feet out from the project fence line. The locations of the Special-Status Plant Protection Areas shall be clearly depicted on all final maps and project drawings and descriptions for exclusions of all project activities.</p>	<p>On January 31st of each year following construction the owner's qualified botanist shall submit a report, including CNDDB field survey forms, describing results of off-site plant surveys for Mojave milkweed and Rusby's desert-mallow to the BLM's authorized officer, the CPM, CDFG, and CNDDB. Submittal of survey reports shall continue for a maximum of 10 years until the same number of occurrences in the project area excluding the occurrences of Special-Status Plant Protection Areas.</p>	ONGOING DURING OPERATIONS	Annual Reporting required in the Annual Compliance Report Beginning Jan. 2015	2014 Annual Compliance Report was submitted on 1/30/2015; 1/29/2016			
Biological Resources	BIO-18 (continued-2)	<p>4. <u>Protection of Adjacent Occurrences:</u> The project owner shall identify special-status plants occurrences within 250 feet of the project fence line during the pre-construction plant surveys described above. A qualified botanist shall delineate the boundaries of these special status plant occurrences prior to the initiation of ground disturbing activities. These flagged special status plant occurrences shall be designated as Environmentally Sensitive Areas on plans and specifications, and shall be protected from accidental impacts during construction (e.g. vehicle traffic, temporary placement of soils or vegetation) and from the indirect impacts of project operation (e.g., herbicide spraying, changes in upstream hydrology, etc).</p>	<p>The project owner's qualified botanist shall submit a completion report documenting fulfillment of target goals & which describe the number of new, previously undiscovered occurrences identified & mapped using GIS techniques for each species. Mapping results shall include GPS coordinates of the plants found.</p> <p>The DB shall maintain written & photographic records of the tasks described above, and summaries of these records shall be submitted along with the MCR to the CPM, BLM AA, and CDFG.</p> <p>During operation, the DB shall submit record summaries in the Annual Compliance Report for a period not < 10 years for the Gas Pipeline Revegetation Plan, and for the life of the project for the SSPP and Monitoring Plan, and the SSP Remedial Action Plan, including funding for the seed storage.</p> <p>No less than 90 days prior to acquisition of the parcel (s) containing or adjacent to a known Mojave milkweed occurrence, 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.</p>	Approved ONGOING DURING OPERATIONS	Annually beginning January 2015	7/2/2010 (Gas Pipeline Plan) 11/1/2010 SS Plant Plan 11/10/2010 SS Plant Remedial Action Plan (Seed Collection Plan included) . 2014 Annual Compliance Report was submitted on 1/30/2015; 1/29/2016	Nov 9, 2010 rev 0		6/18/10 Gas Pipeline Plan 11/1/2010 SS Plant Plan 11/10/2010 SS Plant Remedial Action Plan (Seed Collection Plan included) Designated Biologist shall submit record summaries in the ACR beginning January 2015

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Biological Resources	BIO-18 (continued-2a)	<p>5. Develop and Implement a Special-Status Plant Protection and Monitoring Plan: The project owner shall develop and implement a Special-Status Plant Protection and Monitoring Plan for special-status plants occurring within the Special-Status Plant Protection Areas and on-site areas designated for impact minimization. The goal of the Special-Status Plant Protection and Monitoring Plan shall be to maintain the special-status plant species as healthy, reproductive populations that can be sustained in perpetuity. At a minimum, the Special-Status Plant Protection and Monitoring Plan shall:</p> <ul style="list-style-type: none"> • establish baseline conditions and numbers of the plant occurrences in all protected areas (i.e., those to be excluded from the footprint and on-site areas to be protected) and success standards for protection of special-status plant occurrences; • provide information about microhabitat preferences and fecundity, essential pollinators, reproductive biology, and propagation and culture requirements for each special-status species; • describe measures (e.g., fencing, signage) to avoid direct construction and operation impacts to special-status plants within all protected areas; • describe measures to avoid or minimize indirect construction and operations impacts to special-status plants within protected areas (e.g., runoff from mirror-washing, use of soil stabilizers/rackifiers, alterations of hydrology from drainage diversions, erosion/sedimentation from disturbed soils upslope, herbicide drift, the spread of non-native plants, etc). • provide a monitoring schedule and plan for assessing the numbers and condition of special-status plants; and • identify specific triggers for remedial action (e.g., numbers of plants dropping below a threshold); 	<p>Draft agreements to delegate land 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 land acquisition. Such agreements shall be mutually approved and executed at least 60 days prior to start of any project-related ground disturbance activities. The project owner shall provide written verification to the CPM that the compensation lands 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 land 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.</p>	Approved ONGOING DURING OPERATIONS	Annually beginning January 2015	7/2/2010 (Gas Pipeline Plan) 11/1/2010 SS Plant Plan 11/10/2010 SS Plant Remedial Action Plan (Seed Collection Plan included) . 2014 Annual Compliance Report was submitted on 1/30/2015; 1/29/2016	Nov 9, 2010 rev 0		6/18/10 Gas Pipeline Plan 11/1/2010 SS Plant Plan 11/10/2010 SS Plant Remedial Action Plan (Seed Collection Plan included) Designated Biologist shall submit record summaries in the ACR beginning January 2015
Biological Resources	BIO-18 (continued-3)	<p>6. Develop Special-Status Plant Remedial Action Plan: The project owner shall develop a detailed Special-Status Plant Remedial Action Plan to be implemented if special-status plants within the 476 acres of protected area and on-site minimization "halos" fail to meet success standards described in the Special-Status Plant Protection and Monitoring Plan. The Plant Remedial Action Plan shall include specifications for ex-situ/offsite conservation of seed and other propagules, and the seed bank and other symbionts contained in the topsoil where these plants occur. The remedial measures described in the Plant Remedial Action Plan shall not substitute for plant protection or other mitigation measures. The Special-Status Plant Remedial Action Plan shall include, at a minimum:</p> <ul style="list-style-type: none"> • guidelines for pre-construction seed collection (and/or other propagules) for each species; • specifications for collecting, storing, and preserving the upper layer of soil containing seed and important soil organisms; • detailed replacement planting program with biologically meaningful quantitative and qualitative success criteria (see Pavlik 1996), monitoring specifications, and triggers for remedial action; and • ecological specifications for suitable planting sites. <p>7. Seed Collection: Implementation of the Special-Status Plant Remedial Action Plan would require a source of local source of seeds/propagules. In addition, seed collection would serve to preserve germplasm in the event that all mitigation fails. The project owner shall develop and implement a Seed Collection Plan to collect and store seed for Mojave milkweed, Rusby's desert-mallow, desert pincushion, nine-awned pappus grass, and Parish's club-cholla. The source of these seeds shall be from plants proposed for removal within the project footprint. The project owner shall engage the services of a qualified contractor approved by the CPM to undertake seed collection and storage.</p>	See above sections	Approved ONGOING DURING OPERATIONS	Annually beginning Jan. 2015	7/2/2010 (Gas Pipeline Plan) 11/1/2010 SS Plant Plan 11/10/2010 SS Plant Remedial Action Plan (Seed Collection Plan included) . 2014 Annual Compliance Report was submitted on 1/30/2015; 1/29/2016	Nov 9, 2010 rev 0		6/18/10 Gas Pipeline Plan 11/1/2010 SS Plant Plan 11/10/2010 SS Plant Remedial Action Plan (Seed Collection Plan included) Designated Biologist shall submit record summaries in the ACR beginning January 2015
Biological Resources	BIO-18 (continued-4)	<p>8. Gas Pipeline Revegetation and Monitoring: In the natural gas pipeline construction corridor where disturbed soils will be revegetated, the topsoil excavated shall be segregated, kept intact, and protected, under conditions shown to sustain seed bank viability. At a minimum, the top 2 cm of the soil shall be separately stored and preserved. Topsoil salvage, storing, and replacement shall be replaced in its original vertical orientation following pipeline installation ensuring the integrity of the top 2 cm in particular. The project owner shall prepare a Gas Pipeline Revegetation and Monitoring Plan targeted at re-establishment of Rusby's desert-mallow, desert pincushion, Mojave milkweed, and potentially other special-status plant species. The Gas Pipeline Revegetation and Monitoring Plan shall identify success criteria for re-establishment and shall continue for a period of no less than 10 years until the defined success criteria are achieved. The Gas Pipeline Revegetation and Monitoring Plan shall include measures for seeding or other remedial actions. If no individuals of Rusby's desert-mallow, desert pincushion, or Mojave milkweed, are located during the first year of monitoring, the project owner shall conduct supplemental seeding or other remedial measures in the area disturbed by natural gas pipeline installation.</p>	See above sections	Approved ONGOING DURING OPERATIONS	Annually beginning January 2015	7/2/2010 (Gas Pipeline Plan) 11/1/2010 SS Plant Plan 11/10/2010 SS Plant Remedial Action Plan (Seed Collection Plan included) . 2014 Annual Compliance Report was submitted on 1/30/2015; 1/29/2016	Nov 9, 2010 rev 0		6/18/10 Gas Pipeline Plan 11/1/2010 SS Plant Plan 11/10/2010 SS Plant Remedial Action Plan (Seed Collection Plan included) Designated Biologist shall submit record summaries in the ACR beginning January 2015

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Biological Resources	BIO-18 (continued-5)	<p>9. Surveys on Acquired and Public Lands: The project owner shall conduct floristic surveys for Rusby's desert-mallow and Mojave milkweed on all lands that will be acquired as part of the desert tortoise compensatory mitigation requirements (see Condition of Certification BIO-17). The goal of the surveys shall be to identify at least the same number of occurrences on off-site compensation or public lands as the number of occurrences in the project area excluding the occurrences in the Special-Status Plant Protection Areas in Project Description Figure 13. If this goal is not met by surveys on proposed acquisition lands, additional surveys shall be conducted within suitable habitat on public lands. To be counted toward fulfillment of the goal the occurrences must reflect new data not previously documented in other survey efforts. The survey requirements shall include the following:</p> <ul style="list-style-type: none"> All surveys shall be conducted by a qualified botanist in accordance with BLM, CDFG, and CNPS plant survey guidelines; Surveys shall occur the first spring after construction begins and continue each year for a maximum of ten years until the same number of Mojave Milkweed and Rusby's desert-mallow occurrences are identified on acquisition lands and/or public lands as located outside Special-Status Plant Protection Areas; For each year surveys are conducted yearly survey results shall be provided to the CPM, BLM's Authorized Officer and CDFG, and shall include CNDDDB field survey forms for all special-status plant species encountered during the surveys; and All field survey forms shall be submitted to the CNDDDB at the time of submittal to the CPM, BLM and CDFG; and 	See above sections	Approved ONGOING DURING OPERATIONS	Annually beginning January 2015	7/2/2010 (Gas Pipeline Plan) 11/1/2010 SS Plant Plan 11/10/2010 SS Plant Remedial Action Plan (Seed Collection Plan included) . 2014 Annual Compliance Report was submitted on 1/30/2015	Nov 9, 2010 rev 0		6/18/10 Gas Pipeline Plan 11/1/2010 SS Plant Plan 11/10/2010 SS Plant Remedial Action Plan (Seed Collection Plan included) Designated Biologist shall submit record summaries in the ACR beginning January 2015
Biological Resources	BIO-18 (continued-6)	<ul style="list-style-type: none"> The project owner's qualified botanist shall submit a completion report documenting fulfillment of the target goals and which describe the number of new, previously undiscovered occurrences identified and mapped. Locations shall be reported with GPS coordinates compatible with inclusion in a GIS database. <p>10. Security for Implementation of Plans : The project owner shall provide security adequate to fund implementation of the Special-Status Plant Protection and Monitoring Plan, the Special-Status Plant Remedial Action Plan for the life of the project, as well as the Seed Collection Plan, and the Gas Pipeline Revegetation Monitoring Plan.</p> <p>11. Acquire Off-Site Occurrence of Mojave Milkweed or Adjacent Land: The project owner shall acquire, in fee or in easement, a parcel or parcels of land that includes at least 30 acres supporting a viable occurrence of Mojave milkweed (or suitable habitat adjacent to a known occurrence). The terms and conditions of this acquisition or easement shall be as described in Condition of Certification BIO-17 with the additional criteria that the Mojave milkweed mitigation lands:</p> <ol style="list-style-type: none"> provide habitat for the special-status plant species that is of similar or better quality (e.g., in terms of native plant composition) than that impacted; 2) contain OR abut a known occurrence of Mojave milkweed, ideally with populations that are stable, recovering, or likely to recover, that shares the same watershed as the land; and 3) be adequately sized and buffered to support self-sustaining special-status plant populations. These mitigation lands may be included with the desert tortoise mitigation lands ONLY if the above criteria are met. If sufficient new Mojave milkweed occurrences are discovered on desert tortoise compensation lands (not public lands) in accordance with item 9 above prior to acquiring this land, the associated security shall be refunded to the project owner. 	See above sections	Approved ONGOING DURING OPERATIONS	Annually beginning Jan. 2015	7/2/2010 (Gas Pipeline Plan) 11/1/2010 SS Plant Plan 11/10/2010 SS Plant Remedial Action Plan (Seed Collection Plan included) . 2014 Annual Compliance Report was submitted on 1/30/2015	Nov 9, 2010 rev 0		6/18/10 Gas Pipeline Plan 11/1/2010 SS Plant Plan 11/10/2010 SS Plant Remedial Action Plan (Seed Collection Plan included) Designated Biologist shall submit record summaries in the ACR beginning January 2015
Biological Resources	BIO-19	<p>Nelson's Bighorn Sheep Mitigation: To compensate for project impacts to Nelson's bighorn sheep the project owner shall finance, construct and manage an artificial water source in the eastern part of the Clark Mountain range or in the State Line Hills outside of designated Wilderness. The project owner shall monitor and control noxious and invasive weeds within 100 feet of the artificial water source. Control of weeds shall be coordinated with the CPM and BLM staff and shall consist of removal by mechanical methods, rather than herbicides. To minimize potential impacts to Nelson bighorn sheep, the project owner shall not use barbed wire fence on the northern perimeter of the Ivanpah 3 site, unless the project owner provides evidence that such fencing is essential for security reasons.</p>	<p>Within 60 days of publication of the Energy Commission Decision the project owner shall submit to the BLM's Authorized Officer, the CPM and CDFG a Draft Bighorn Sheep Mitigation Plan identifying a proposed location for the artificial water source and providing plans for its construction and management. At least 60 days prior to start of any project-related ground disturbance activities, the project owner shall provide BLM's Authorized Officer and the CPM with the final version of the Bighorn Sheep Mitigation Plan that has been reviewed and approved by the CPM, BLM, and CDFG, BLM's Authorized Officer and the CPM will determine the plan's acceptability within 30 days of receipt of the final plan.</p> <p>No later than 18 months following the publication of the Energy Commission Decision, the project owner shall provide written verification to BLM's Authorized Officer and the CPM that the construction of the artificial water source has been completed. At the same time, the project owner shall provide evidence of an agreement (Memorandum of Understanding) and a funding mechanism to provide ongoing maintenance of the water source by CDFG or some other party approved by BLM's Authorized Office and the CPM.</p>	APPROVED ANNUAL REPORTING BY SCBC DURING OPERATIONS	60 days of publication of Energy Commission Decision; 60 days prior start of ground disturbance; 18 months following publication of Energy Commission Decision	7/30/2010; Jan 2012 Rev 1 submitted; 1/30/2015; 1/29/2016	2-Oct-2012		Rev 1 dated January 2012, Approved CEC 10/2/12 email The SCBS will provide the project owner an annual report no later than January 15th of each year, and the project owner will provide to the CEC and BLM the annual report no later than January 31st of each year.

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Biological Resources	BIO-20 (Continued-1)	<p>4. Right of Access and Review for Compliance Monitoring: The CPM reserves the right to enter the project site 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.</p> <p>5. Notification: 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.</p> <p><u>A copy of the notifying change of conditions report shall be included in the annual reports.</u></p> <p>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 nonnative, 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.</p>	<p>No less than 90 days prior to acquisition of the parcel (s) containing 175 acres of waters of the state, 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.</p> <p>Draft agreements to delegate land 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 land acquisition. Such agreements shall be mutually approved and executed at least 60 days prior to start of any project-related ground disturbance activities. The project owner shall provide written verification to the CPM that the compensation lands 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 land 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.</p> <p>No fewer than 30 days prior to the start of work potentially affecting 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 waters of the state in Compliance Reports for the duration of the project.</p>	ONGOING	90 days prior acquisition of parcels Annual submittal required in the Annual Compliance Report	Submitted JD to CDFG, CEC, RW/QCB, and BLM on 6/8/2011; 1/30/2015; 1/29/2016			ongoing negotiations. BLM granted 1 year extension to 10/07/2013; The notifying change of conditions report was submitted in the annual compliance report.
Biological Resources	BIO-21-CEC	<p>Avian and Bat Monitoring and Management Plan: The Project owner shall prepare and implement an Avian and Bat Monitoring and Management Plan (Plan) to monitor death and injury of birds and bats from collisions with facility features including the solar receiver tower and reflective heliostat mirrors, and exposure to bright light and heat from concentrating sunlight. The Project owner shall use the monitoring data to inform and develop an adaptive management program that would avoid and minimize Project-related avian or bat impacts. Any Project-related bird or bat deaths or injuries shall be reported to the CPM, CDFG and USFWS, and then the CPM in consultation with CDFG and USFWS, shall then determine if the Project-related bird or bat deaths or injuries warrant implementation of adaptive management measures contained in the Plan. The study design for the Plan shall be approved by the CPM in consultation with CDFG and USFWS, and, once approved, shall be incorporated into the project's BRMIMP and implemented.</p> <p>During construction, bird and bat deaths or injuries shall be reported in the Monthly Compliance Report. For one year following the beginning of power plant operation, the Designated Biologist shall submit quarterly reports to the CPM, CDFG, and USFWS, describing the results of monitoring. The monthly and quarterly reports shall provide a detailed description of any Project-related bird or bat deaths or injuries detected during the monitoring study or at any other time, including describing the dates, species found injured or dead, where found, expected cause of injury or death, other appropriate results of monitoring, and a description of adaptive management measures proposed or implemented in accordance with any applicable CDFG or USFWS guidelines to avoid or minimize deaths or injuries. Following the completion of the fourth quarter of monitoring, the Designated Biologist shall prepare an Annual Report that summarizes the year's data, analyzes any Project-related bird fatalities or injuries detected, and provides recommendations for future monitoring and any adaptive management actions needed.</p>	<p>No later than January 31st of every year the Annual Report shall be provided to the CPM, CDFG, and USFWS. Quarterly reporting shall continue until the CPM, in consultation with CDFG and USFWS determine whether more years of monitoring are needed, and whether mitigation and adaptive management measures are necessary.</p>	ONGOING	Annually & Quarterly	12/16/2014; 1/30/2015; 4/20/2015; 8/14/2015; 12/23/2015;			Revised Spring & Summer 2014 Reports submitted on 12/16/2014; 2013-2014 Annual Report and 2014 Fall Report submitted on 4/20/2015; 2013-2014 Winter Report submitted on 8/14/2015; 2015 Spring Report submitted on 12/23/2015; ABMP Rev. 13 submitted on 12/23/2015
			<p>After two years of data collection, the project owner or contractor shall prepare a report that describes the study design and monitoring results of the Avian and Bat Monitoring and Management Plan. The report shall be submitted to the CPM, CDFG and USFWS no later than the third year after onset of Project operation.</p>	Upcoming	Upcoming in 2016				

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Biological Resources	BIO-22-CEC (continued-1)	<p>Overview of Project Phases Phase 1 includes the following components (1,282 acres): a. Fence Colosseum Road; b. Fence the Construction Logistics Area (CLA) and Construct Holding Pens in the CLA; c. Fence, Conduct Clearance Surveys, and Construct Ivanpah 1 d. Fence Access Road and Power Block for Ivanpah 2, and Perform Construction Within Ivanpah 2 Power Block. Phase 1 would include 1,282 acres of desert tortoise mitigation, as well as 10 of the 30 acres of rare plant mitigation, and 58 of the 175 acres of state waters mitigation.</p>	<p>The Project Owner shall provide written verification to the CPM, CDFG, BLM and USFWS of the compensation lands acquisition, protection, and transfer requirements and satisfaction of associated funding requirements as set forth in BIO-17, BIO-18 and BIO-20 within the following time frames: (1) For Phase 1 mitigation, verification shall be provided no later than 18 months after the start of construction of Phase 1, and (2) for Phase 2 mitigation, such verification shall be provided no later than 18 months after the start of construction of Phase 2. Other verification, notification and reporting requirements and other deadlines set forth in BIO-17, BIO-18 and BIO-20 that relate to compensation land requirements, to the option of funding mitigation through the NFWF account, or to use of approved third parties to carry out mitigation requirements also apply to Phase 1 and to Phase 2. Within 90 days after completion of all project related ground disturbance for each project phase, the project owner shall provide to the CPM, CDFG, BLM and USFWS an analysis, based on aerial photography, with the final accounting of the amount of habitat disturbed during Project construction.</p>	Submitted	90 days after Project Completion				
Biological Resources	BIO-22-CEC (continued-1)	<p>Phase 2 includes the following components (2,300 acres): a. Construct Ivanpah 2 – Consists of the diagonal access roads, perimeter road for fence, channel crossings as needed, and solar field including grading of approximately 90 acres in the southwest and central regions of the solar field area; b. Construct Ivanpah 3 - Consists of the diagonal access roads, perimeter road for fence, channel crossings as needed, power block, and solar field including grading of approximately 120 acres in the southern and western regions of the solar field area; c. Other external features including roads and gas line. Phase 2 would include 2,300 acres of desert tortoise mitigation, as well as 20 of the 30 acres of rare plant mitigation, and 117 of the 175 acres of state waters mitigation. General Requirements At no time may the project owner cause ground-disturbance to any location outside of the area that has been approved for construction according to the phasing plan identified in this Condition of Certification.</p>	<p>The Project Owner shall provide written verification to the CPM, CDFG, BLM and USFWS of the compensation lands acquisition, protection, and transfer requirements and satisfaction of associated funding requirements as set forth in BIO-17, BIO-18 and BIO-20 within the following time frames: (1) For Phase 1 mitigation, verification shall be provided no later than 18 months after the start of construction of Phase 1, and (2) for Phase 2 mitigation, such verification shall be provided no later than 18 months after the start of construction of Phase 2. Other verification, notification and reporting requirements and other deadlines set forth in BIO-17, BIO-18 and BIO-20 that relate to compensation land requirements, to the option of funding mitigation through the NFWF account, or to use of approved third parties to carry out mitigation requirements also apply to Phase 1 and to Phase 2. Within 90 days after completion of all project related ground disturbance for each project phase, the project owner shall provide to the CPM, CDFG, BLM and USFWS an analysis, based on aerial photography, with the final accounting of the amount of habitat disturbed during Project construction.</p>	Submitted	90 days after Project Completion	29-Aug-2014			Phase 1 and Phase 2 securities paid, Land Acquisition in progress
Biological Resources	BIO-22-CEC (continued-2)	<p>Prior to initiating construction in either phase of the Project, the project owner shall comply with all pre-construction requirements in this and other Conditions of Certification and shall notify the CPM that it has obtained a Notice to Proceed for the particular phase from the BLM. Construction activities, including work on linear and non-linear features, shall not occur outside desert tortoise exclusion areas that have been fenced and cleared in accordance with USFWS protocols and as described in Condition of Certification BIO-8 (Desert Tortoise Clearance and Exclusion Fencing). The project owner shall provide security to ensure implementation of the mitigation requirements in Conditions of Certification BIO-17 (Desert Tortoise Compensatory Mitigation), BIO-18 (Special-Status Plant Impact Avoidance and Minimization) and BIO-20 (Streambed Impact Minimization and Compensation Measures) for each of the two phases prior to any project construction associated with that phase. Phasing of security only applies to security required by the Conditions listed above. If the project owner elects to phase payments of security under either a Project Owner Acquisition or NFWF option and if the commencement of construction is delayed beyond June 1, 2011, the amount of the security (including payments to NFWF if applicable [see definition of security above]) will be adjusted by the CPM in consultation with DFG, BLM and USFWS prior to each phase to reflect the CPM's best estimate at that time of the estimated costs of land acquisition, long-term management and maintenance costs, and other costs that are included in the security computation. Those costs may be greater than the costs identified in the conditions of certification.</p>	See above sections	Phase 1 and Phase 2 securities paid, Land Acquisition in progress	90 days after Project Completion	Rev. 2 submitted 6/28/2011			Phase 1 and Phase 2 securities paid, Land Acquisition in progress

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Biological Resources	BIO-22-CEC (continued-3)	Even when security has been provided, the project owner shall complete the acquisition, protection and transfer of all compensation lands required in the conditions of certification listed above, as well as all funding requirements associated with those lands, within the time periods identified in those conditions of certification. Additional requirements within the project's conditions of certification that are not expressly phased in this condition shall be phased as necessary to carry out the purpose of this condition, and to ensure that no project construction occurs in an area for which the project owner has not provided security and obtained permission to begin construction. Examples may include such activities as construction and location of desert tortoise exclusion fencing or timing of preconstruction clearance surveys for other species. The project owner shall first obtain approval from the CPM, acting in consultation with BLM, CDFG and USFWS, for the phasing of any requirements or deadlines that are not expressly phased in conditions of certification. Security for phased construction shall be in the amounts as specified in Conditions of Certification BIO-17, -18 and -20, and may be adjusted by the CPM in consultation with DFG, BLM and USFWS based upon more accurate information provided by the project owner confirming the acreages described in this table, and on updates from the REAT agencies with more current guidance than the Desert Renewable Energy REAT Biological Resource Compensation/Mitigation Cost Estimate Breakdown for use with the REAT-NFWF Mitigation Account, July 23, 2010.	See above sections	Phase 1 and Phase 2 securities paid, Land Acquisition in progress	90 days after Project Completion	Rev. 2 submitted 6/28/2011			Phase 1 and Phase 2 securities paid, Land Acquisition in progress
Biological Resources	BIO-23-BLM	<u>The applicant shall conduct visual biweekly surveys for bird and bat mortalities throughout the project site.</u> In addition to the photo documentation of bird mortalities (Item #14 in BIO-11), mortalities and injuries to bats and other wildlife shall be photo documented. Additionally, data would document the species affected and any overt signs of injury resulting in death (e.g., scorched feathers). <u>This information would be compiled and provided to the BLM on quarterly intervals for the first three years, then annually thereafter, unless otherwise requested by the BLM. This data would add to the understanding of impacts of solar facilities on avian and bat species. BLM would maintain the authority to require additional mitigation of the applicant in the future to reduce collision or heat-related injuries.</u> Effectiveness: This mitigation would be highly effective in documenting avian and bat mortalities associated with the operation of the facility. If sufficient data are gathered to support the need for additional mitigation, the mitigation may ultimately be effective in reducing avian and bat injuries and mortalities if an effective mitigation measure can be identified in the future.	No Verification: see Effectiveness	Ongoing	Quarterly	Revised Spring & Summer 2014 Reports submitted on 12/16/2014; 2013-2014 Annual Report and 2014 Fall Report submitted on 4/20/2015; 2013-2014 Winter Report submitted on 8/14/2015; 2015 Spring Report submitted on 12/23/2015; ABMP Rev. 13 submitted on 12/23/2015			Revised Spring & Summer 2014 Reports submitted on 12/16/2014; 2013-2014 Annual Report and 2014 Fall Report submitted on 4/20/2015; 2013-2014 Winter Report submitted on 8/14/2015; 2015 Spring Report submitted on 12/23/2015; ABMP Rev. 13 submitted on 12/23/2015
Biological Resources	BIO-25-BLM	The applicant shall monitor and control noxious and invasive weeds within 100 feet of the artificial water source. Control of weeds shall be coordinated with the BLM staff and shall consist of removal by mechanical methods, rather than herbicides. Effectiveness: This mitigation measure would be moderately effective in controlling noxious and invasive weeds near the artificial water source, providing better access to the site by big game.	No Verification: see Effectiveness	Ongoing	N/A				
Biological Resources	BIO-26-BLM	The applicant shall implement all mitigation identified by the USFWS in the Biological Opinion. Effectiveness: This measure would be highly effective in ensuring mitigation within the USFWS' Biological Opinion was implemented.	No Verification: see Effectiveness	Ongoing	N/A				
Biological Resources	BIO-27-BLM	The project owner shall implement the Closure, Revegetation, and Rehabilitation Plan, Revision 3, dated July 6, 2010, with the following modifications. 1. The long-term soil stockpiles, as discussed in Table 5-2 of the plan, will be no higher than 6 feet high. 2. The Preliminary Seeding Plan for Short-Term Disturbed Areas, and to be used as the basis for the seeding during final project decommissioning, will be based upon the species list provided in Table 7-1 of the plan, rather than the species list in Table 7-2. The list may be modified at the time of decommissioning based on seed availability. 3. Concrete will be removed to a minimum depth of 6 feet unless it is shown that a particular area is prone to flood hazards and a greater depth for concrete removal should be required. All concrete removed shall be hauled off the project site and disposed of in an approved facility. Crushed concrete will not be used as backfill on the site during decommissioning. 4. Succulents salvaged during project construction will not be sold by the applicant. Should excess succulents be removed that cannot be transplanted in the Succulent Nursery Area, their disposition will be managed by BLM. Effectiveness: This measure modifies Revision 3 of the Closure, Revegetation, and Rehabilitation Plan to incorporate procedures which will increase the probability of successful site rehabilitation.	No Verification: see Effectiveness	In Progress	N/A				

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Biological Resources	BIO-28-BLM	Compliance with Eagle Act. USFWS has notified BLM that due to the proximity of known occupied golden eagle territories, and that the effects of power towers on bald and golden eagles is unknown, this project has the potential to take an eagle. Due to the distance of the project site to known eagle territories, available mitigation measures (some of which are already described in other measures identified in this section), and habitat compensation associated with other species (i.e. desert tortoise), USFWS believes that this project can reach the "no net loss" standard for golden eagles identified in the Eagle Act Rule if the applicant submits and implements an Avian Protection Plan. The holder shall submit an Avian Protection Plan for approval of the Authorized Officer within 6 months of the issuance of any ROW grant for the project. The Avian Protection Plan must be implemented within one year from the date of any ROW grant Notice to Proceed.	No Verification: see Avian Protection Plan submittal	Submitted	N/A	Draft Submitted Sept 2010; Revision 1 Submitted October 2010; Revision 2 Submitted May 2011			
Compliance Conditions	COMP-01	Unrestricted Access: BLM's Authorized Officer, responsible BLM staff, the CPM, responsible Energy Commission staff, and delegated agencies or consultants shall be guaranteed and granted unrestricted access to the power plant site, related facilities, project-related staff, and the records maintained on-site, for the purpose of conducting audits, surveys, inspections, or general site visits. Although BLM's Authorized Officer and the CPM will normally schedule site visits on dates and times agreeable to the project owner, BLM's Authorized Officer and the CPM reserve the right to make unannounced visits at anytime.		ONGOING	N/A				
Compliance Conditions	COMP-02	Compliance Record: The project owner shall maintain project files on-site or at an alternative site approved by BLM's Authorized Officer and the CPM for the life of the project, unless a lesser period of time is specified by the conditions of certification. The files shall contain copies of all "as-built" drawings, documents submitted as verification for conditions, and other project-related documents. As-built drawings of all facilities including linear facilities shall be provided to the BLM Authorized Officer for inclusion in the BLM administrative record within 90-days of completion of that portion of the facility or project. BLM and Energy Commission staff and delegate agencies shall, upon request to the project owner, be given unrestricted access to the files maintained pursuant to this condition.		SUBMITTED	90 days of completion of that portion of the facility or project	8-Dec-2014			Electronic copies of the final approved engineering plans were hand-delivered by Doug Davis to CEC on 12/8/2014.
Compliance Conditions	COMP-03	Compliance Verification Submittals: Each condition of certification is followed by a means of verification. The verification describes the Energy Commission's procedure(s) to ensure post-certification compliance with adopted conditions. The verification procedures, unlike the conditions, may be modified as necessary by BLM's Authorized Officer and the CPM. Verification of compliance with the conditions of certification can be accomplished by the following: 1. Monthly and/or annual compliance reports, timely filed by the project owner or authorized agent, reporting on work done and providing pertinent documentation, as required by the specific conditions of certification; 2. Appropriate letters from delegate agencies verifying compliance; 3. BLM and Energy Commission staff audits of project records; and/or 4. BLM and Energy Commission staff inspections of work, or other evidence that the requirements are satisfied. Verification lead times associated with start of construction may require the project owner to file submittals during the certification process, particularly if construction is planned to commence shortly after certification. A cover letter from the project owner or authorized agent is required for all compliance submittals and correspondence pertaining to compliance matters. The cover letter subject line shall identify the project by AFC number, the appropriate condition(s) of certification by condition number(s), and a brief description of the subject of the submittal. The project owner shall also identify those submittals not required by a condition of certification with a statement such as: "This submittal is for information only and is not required by a specific condition of certification." When submitting supplementary or corrected information, the project owner shall reference the date of the previous submittal and BLM/CEC submittal number.		ONGOING	N/A				

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES		
Compliance Conditions	COMP-03 (Continued)	<p>The project owner is responsible for the delivery and content of all verification submittals to the BLM's Authorized Officer and CPM, whether such condition was satisfied by work performed by the project owner or an agent of the project owner. All hardcopy submittals shall be addressed to each of the following:</p> <table border="0"> <tr> <td>BLM's Authorized Officer (CACA-48668, 49502, 49503, and 49504) U.S. Bureau of Land Management 1303 South Highway 95 Needles, CA 92363</td> <td>Compliance Project Manager (07-AFC-5C) California Energy Commission 1516 Ninth Street (MS-2000) Sacramento, CA 95814</td> </tr> </table> <p>Those submittals shall be accompanied by a searchable electronic copy, on a CD or by e-mail, as agreed upon by BLM's Authorized Officer and the CPM. If the project owner desires BLM and/or Energy Commission staff action by a specific date, that request shall be made in the submittal cover letter and shall include a detailed explanation of the effects on the project if that date is not met.</p>	BLM's Authorized Officer (CACA-48668, 49502, 49503, and 49504) U.S. Bureau of Land Management 1303 South Highway 95 Needles, CA 92363	Compliance Project Manager (07-AFC-5C) California Energy Commission 1516 Ninth Street (MS-2000) Sacramento, CA 95814		ONGOING	N/A				
BLM's Authorized Officer (CACA-48668, 49502, 49503, and 49504) U.S. Bureau of Land Management 1303 South Highway 95 Needles, CA 92363	Compliance Project Manager (07-AFC-5C) California Energy Commission 1516 Ninth Street (MS-2000) Sacramento, CA 95814										
Compliance Conditions	COMP-04 (Continued)	<p>If the project owner anticipates commencing project construction as soon as the project is certified, it may be necessary for the project owner to file compliance submittals prior to project certification. Compliance submittals should be completed in advance where the necessary lead time for a required compliance event extends beyond the date anticipated for start of construction. The project owner must understand that the submittal of compliance documents prior to project certification is at the owner's own risk. Any approval by Energy Commission staff is subject to change, based upon BLM's ROW Grant and the Energy Commission Decision. Compliance Reporting There are two different compliance reports that the project owner must submit to assist BLM's Authorized Officer and the CPM in tracking activities and monitoring compliance with the terms and conditions of BLM's ROW Grant and the Energy Commission Decision. <u>During construction, the project owner or authorized agent will submit Monthly Compliance Reports. During operation, an Annual Compliance Report must be submitted.</u> These reports, and the requirement for an accompanying compliance matrix, are described below. The majority of the conditions of certification require that compliance submittals be submitted to BLM's Authorized Officer and the CPM in the monthly or annual compliance reports.</p>		Approved - COMPLETED (CONSTRUCTION) ONGOING DURING OPERATIONS	Annually beginning Jan. 2015	5/14/2010 (draft) 6/4/2010 (final). 2014 Annual Compliance Report was submitted on 1/30/2015; 1/29/2016	2-Sep-2010				
Compliance Conditions	COMP-07	<p><u>Annual Compliance Report:</u> After construction of each power plant is complete or when a power plant goes into commercial operation, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports. The reports are for each year of commercial operation and are due to BLM's Authorized Officer and the CPM each year at a date agreed to by BLM's Authorized Officer and the CPM. Annual Compliance Reports shall be submitted over the life of the project unless otherwise specified by BLM's Authorized Officer and the CPM. Each Annual Compliance Report shall include the AFC number, identify the reporting period and shall contain the following:</p> <ol style="list-style-type: none"> 1. An updated compliance matrix showing the status of all conditions of certification (fully satisfied conditions do not need to be included in the matrix after they have been reported as completed); 2. A summary of the current project operating status and an explanation of any significant changes to facility operations during the year; 3. Documents required by specific conditions to be submitted along with the Annual Compliance Report. Each of these items must be identified in the transmittal letter, with the condition it satisfies, and submitted as attachments to the Annual Compliance Report; 4. A cumulative listing of all post-certification changes by the Energy Commission or changes to the BLM ROW grant or approved POD by BLM, or cleared by BLM's Authorized Officer and the CPM; 5. An explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided; 6. A listing of filings submitted to, or permits issued by, other governmental agencies during the year; 7. A projection of project compliance activities scheduled during the next year; 8. A listing of the year's additions to the on-site compliance file; 9. An evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to date [see Compliance Conditions for Facility Closure addressed later in this section]; and 10. A listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved matters, and the status of any unresolved matters 	<p>After construction of each power plant is complete or when a power plant goes into commercial operation, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports . The reports are for each year of commercial operation and are due to BLM's Authorized Officer and the CPM. Annual Compliance Reports shall be submitted over the life of the project unless otherwise specified by BLM's Authorized Officer and the CPM.</p>	IN PROGRESS	Annually Report for Unit 1 System estimated due date April 2014 1 year from start-up scheduled for April 2013; ANNUALLY BEGINNING JAN. 2015	2014 Annual Compliance Report was submitted on 1/30/2015. 1/29/2016			The first Annual Compliance Report was submitted on January 2015.		

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Compliance Conditions	COMP-08	Confidential Information: Any information that the project owner deems confidential shall be submitted to the Energy Commission's Dockets Unit with an application for confidentiality pursuant to Title 20, California Code of Regulations, section 2505(a). Any information that is determined to be confidential shall be kept confidential as provided for in Title 20, California Code of Regulations, section 2501 et. seq. Any information the ROW holder deems confidential shall be submitted to the BLM Authorized Officer with a written request for said confidentiality along with a justification for the request. All confidential submissions to BLM should be clearly stamped "proprietary information" by the holder when submitted.		IN PROGRESS	As Needed				
Compliance Conditions	COMP-09	Annual Facility Compliance Fee: Pursuant to the provisions of Section 25806(b) of the Public Resources Code, the project owner is required to pay the Energy Commission an annual compliance fee, which is adjusted annually. The amount of the fee for FY2009-2010 was \$19,823. The initial payment is due on the date the Energy Commission adopts the final decision. You will be notified of the amount due. All subsequent payments are due by July 1 of each year in which the facility retains its certification. The payment instrument shall be made payable to the California Energy Commission and mailed to: Accounting Office MS-02, California Energy Commission, 1516 9th St., Sacramento, CA 95814.		ONGOING	Annually - on or before July 1st	7/1/2014; 7/1/2015			Paid annual compliance fee to CEC
Compliance Conditions	COMP-10	Reports of Complaints, Notices, and Citations: Prior to the start of construction, the project owner must send a letter to property owners living within one mile of the project notifying them of a telephone number to contact project representatives with questions, complaints or concerns. If the telephone is not staffed 24 hours per day, it shall include automatic answering with date and time stamp recording. All recorded complaints shall be responded to within 24 hours. The telephone number shall be posted at the project site and made easily visible to passersby during construction and operation. The telephone number shall be provided to BLM's Authorized Officer and the CPM who will post it on the Energy Commission's web page at: http://www.energy.ca.gov/sitingcases/power_plants_contacts.html Any changes to the telephone number shall be submitted immediately to BLM's Authorized Officer and the CPM, who will update the web page. In addition to the monthly and annual compliance reporting requirements described above, the project owner shall report and provide copies to BLM's Authorized Officer and the CPM of all complaint forms, including noise and lighting complaints, notices of violation, notices of fines, official warnings, and citations, within 10 days of receipt. Complaints shall be logged and numbered. Noise complaints shall be recorded on the form provided in the NOISE conditions of certification. All other complaints shall be recorded on the complaint form (Attachment A).		Approved - COMPLETED (CONSTRUCTION) IN PROGRESS DURING OPERATIONS	within 10 days of receipt of complaints	7-Oct-2010	7-Oct-2010		
Compliance Conditions	COMP-10 (Continued)	FACILITY CLOSURE At some point in the future, the project will cease operation and close down. At that time, it will be necessary to implement the Closure, Revegetation and Restoration Plan to ensure that the closure occurs in such a way that public health and safety and the environment are protected from adverse impacts. Although the project setting for this project does not appear, at this time, to present any special or unusual closure problems, it is impossible to foresee what the situation will be in 30 years or more when the project ceases operation. Therefore, provisions must be made that provide the flexibility to deal with the specific situation and project setting that exist at the time of closure. Laws, Ordinances, Regulations and Standards (LORS) pertaining to facility closure are identified in the sections dealing with each technical area. Facility closure will be consistent with LORS in effect at the time of closure. Closure would be conducted in accordance with Condition of Certification BIO-14 that requires the project owner to develop and implement a Closure, Revegetation and Rehabilitation Plan. There are at least three circumstances in which a facility closure can take place: planned closure, unplanned temporary closure and unplanned permanent closure.		Approved - COMPLETED (CONSTRUCTION) IN PROGRESS DURING OPERATIONS	within 10 days of receipt of complaints	7-Oct-2010	7-Oct-2010		
Compliance Conditions	COMP-10 (Continued-1)	CLOSURE DEFINITIONS Planned Closure A planned closure occurs when the facility is closed in an anticipated, orderly manner, at the end of its useful economic or mechanical life, or due to gradual obsolescence. Unplanned Temporary Closure An unplanned temporary closure occurs when the facility is closed suddenly and/or unexpectedly, on a short-term basis, due to unforeseen circumstances such as a natural disaster or an emergency. Short-term is defined as cessation of construction activities or operations of a power plant for a period less than 6 months long. Cessation of construction of operations for a period longer than 6 months is considered a permanent closure. Unplanned Permanent Closure An unplanned permanent closure occurs if the project owner closes the facility suddenly and/or unexpectedly, on a permanent basis. This includes unplanned closure where the owner implements the on-site contingency plan. It can also include unplanned closure where the project owner fails to implement the contingency plan, and the project is essentially abandoned.		Approved - COMPLETED (CONSTRUCTION) IN PROGRESS DURING OPERATIONS	within 10 days of receipt of complaints	7-Oct-2010	7-Oct-2010		

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Compliance Conditions	COMP-11	<p>Planned Closure: In order to ensure that a planned facility closure does not create adverse impacts, a closure process that provides for careful consideration of available options and applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure, will be undertaken. To ensure adequate review of a planned project closure, the project owner shall submit a revision or update to the approved Closure, Revegetation and Rehabilitation Plan to BLM and the Energy Commission for review and approval at least 12 months (or other period of time agreed to by BLM's Authorized Officer and the CPM) prior to commencement of closure activities. The project owner shall file 50 copies and 50 CDs with the Energy Commission and 10 copies and 10 CDs with BLM (or other number of copies agreed upon by BLM's Authorized Officer and the CPM) of a proposed facility closure plan/Closure, Revegetation and Rehabilitation Plan. The plan shall:</p> <ol style="list-style-type: none"> 1. identify and discuss any impacts and mitigation to address significant adverse impacts associated with proposed closure activities and to address facilities, equipment, or other project related materials that must be removed from the site; 2. identify a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project; 		Not Yet Started	12 months prior to commencement of closure activities				Submission not required at this time
Compliance Conditions	COMP-11 (Continued-1)	<ol style="list-style-type: none"> 3. address conformance of the plan with all applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of facility closure, and applicable conditions of certification; and. 4. Address any changes to the site revegetation, rehabilitation, monitoring and longterm maintenance specified in the existing plan that are needed for site revegetation and rehabilitation to be successful. <p>Prior to submittal of an amended or revised Closure, Revegetation and Restoration Plan, a meeting shall be held between the project owner, BLM's Authorized Officer and the Energy Commission CPM for the purpose of discussing the specific contents of the plan. In the event that there are significant issues associated with the proposed facility Closure, Revegetation and Restoration plan's approval, or the desires of local officials or interested parties are inconsistent with the plan, BLM's Authorized Officer the CPM shall hold one or more workshops and/or BLM and the Energy Commission may hold public hearings as part of its approval procedure.</p> <p>As necessary, prior to or during the closure plan process, the project owner shall take appropriate steps to eliminate any immediate threats to public health and safety and the environment, but shall not commence any other closure activities until BLM and the Energy Commission approves the facility Closure, Revegetation and Restoration plan.</p>		Not Yet Started	12 months prior to commencement of closure activities				Submission not required at this time
Compliance Conditions	COMP-12	<p>Unplanned Temporary Closure/On-Site Contingency Plan: In order to ensure that public health and safety and the environment are protected in the event of an unplanned temporary facility closure, it is essential to have an On-Site Contingency Plan in place. The On-Site Contingency Plan will help to ensure that all necessary steps to mitigate public health and safety impacts and environmental impacts are taken in a timely manner.</p> <p>The project owner shall submit an On-Site Contingency Plan for BLM's Authorized Officer and CPM review and approval. The plan shall be submitted no less than 60 days (or other time agreed to by BLM's Authorized Officer and the CPM) after approval of any NTP or letter granting approval to commence construction for each phase of construction. A copy of the approved plan must be in place during commercial operation of the facility and shall be kept at the site at all times.</p> <p>The project owner, in consultation with BLM's Authorized Officer and the CPM, will update the On-Site Contingency Plan as necessary. BLM's Authorized Officer and the CPM may require revisions to the On-Site Contingency Plan over the life of the project. In the annual compliance reports submitted to the Energy Commission, the project owner will review the On-Site Contingency Plan, and recommend changes to bring the plan up to date. Any changes to the plan must be approved by BLM's Authorized Officer and the CPM.</p>		Submitted - COMPLETED (CONSTRUCTION)	60 days after approval of any NTP or letter granting approval to commence work.	31-Jan-2011			

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Compliance Conditions	COMP-12 (Continued)	<p>The On-Site Contingency Plan shall provide for taking immediate steps to secure the facility from trespassing or encroachment. In addition, for closures of more than 90 days, unless other arrangements are agreed to by BLM's Authorized Officer and the CPM, the plan shall provide for removal of hazardous materials and hazardous wastes, draining of all chemicals from storage tanks and other equipment, and the safe shutdown of all equipment. (Also see specific conditions of certification for the technical areas of Hazardous Materials Management and Waste Management.)</p> <p>In addition, consistent with requirements under unplanned permanent closure addressed below, the nature and extent of insurance coverage, and major equipment warranties must also be included in the On-Site Contingency Plan. In addition, the status of the insurance coverage and major equipment warranties must be updated in the annual compliance reports.</p> <p>In the event of an unplanned temporary closure, the project owner shall notify BLM's Authorized Officer and the CPM, as well as other responsible agencies, by telephone, fax, or e-mail, within 24 hours and shall take all necessary steps to implement the On-Site Contingency Plan. The project owner shall keep BLM's Authorized Officer and the CPM informed of the circumstances and expected duration of the closure.</p> <p>If BLM's Authorized Officer and the CPM determine that an unplanned temporary closure is likely to be permanent, or for a duration of more than 6 months, a Closure Plan consistent with the requirements for a planned closure shall be developed and submitted to BLM's Authorized Officer and the CPM within 90 days of BLM's Authorized Officer and the CPM's determination (or other period of time agreed to by BLM's Authorized Officer and the CPM).</p>		Submitted - COMPLETED (CONSTRUCTION)	60 days after approval of any NTP or letter granting approval to commence work.	31-Jan-2011			
Compliance Conditions	COMP-14	<p>Post Certification Changes to BLM's ROW Grant and/or the Energy Commission Decision: Amendments, Ownership Changes, Insignificant Project Changes and Verification Changes: The project owner must petition the Energy Commission pursuant to Title 20, California Code of Regulations, section 1769, in order to modify the project (including linear facilities) design, operation or performance requirements, and to transfer ownership or operational control of the facility. The BLM ROW holder must file a written requests in the form an application to the BLM Authorized Officer in order to change the terms and conditions of their ROW grant or POD. Written requests will be in a manner prescribed by the BLM Authorized Officer.</p> <p>It is the responsibility of the project owner to contact BLM's Authorized Officer and the CPM to determine if a proposed project change should be considered a project modification pursuant to section 1769. Implementation of a project modification without first securing BLM and either Energy Commission or Energy Commission staff approval, may result in enforcement action in accordance with section 25534 of the Public Resources Code.</p> <p>A Petition to Amend is required for changes to the project as specified below. For verification changes, a letter from the project owner is sufficient. In all cases, the petition or letter requesting a change should be submitted to BLM's Authorized Officer and the CPM, who will file it with the Energy Commission's Dockets Unit in accordance with Title 20, California Code of Regulations, section 1209.</p> <p>The criteria that determine which type of approval and the process that applies are explained below. They reflect the provisions of Section 1769 at the time this condition was drafted. If the Commission's rules regarding amendments are amended, the rules in effect at the time an amendment is requested shall apply.</p>		As needed	As needed				
Compliance Conditions	COMP-14 (Continued)	<p>Amendment - The project owner shall petition the Energy Commission, pursuant to Title 20, California Code of Regulations, Section 1769(a), when proposing modifications to the project (including linear facilities) design, operation, or performance requirements. If a proposed modification results in deletion or change of a condition of certification, or makes changes that would cause the project not to comply with any applicable laws, ordinances, regulations or standards, the petition will be processed as a formal amendment to the Energy Commission's final decision, which requires public notice and review of the BLM-Energy Commission staff analysis, and approval by the full Energy Commission. The petition shall be in the form of a legal brief and fulfill the requirements of Section 1769(a). Upon request, the CPM will provide you with a sample petition to use as a template. The ROW holder shall file an application to amend the BLM ROW grant for any substantial deviation or change in use. The requirements to amend a ROW grant are the same as when filing a new application including paying processing and monitoring fees and rent.</p>		As needed	As needed	See amendments under specific condition			

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Compliance Conditions	COMP-14 (Continued-1)	<p>Change of Ownership Change of Ownership - Change of ownership or operational control also requires that the project owner file a petition pursuant to section 1769(b). This process requires public notice and approval by the full Commission and BLM. The petition shall be in the form of a legal brief and fulfill the requirements of Section 1769(b). Upon request, the CPM will provide you with a sample petition to use as a template. The transfer of ownership of a BLM ROW grant must be through the filing of an application for assignment of the grant.</p> <p>Insignificant Project Change - Insignificant Project Change Modifications that do not result in deletions or changes to conditions of certification, and that are compliant with laws, ordinances, regulations and standards may be authorized by BLM's Authorized Officer and the CPM as an insignificant project change pursuant to section 1769(a) (2). This process usually requires minimal time to complete, and it requires a Energy Commission 14-day public review of the Notice of Insignificant Project Change that includes the BLM and Energy Commission staff's intention to approve the modification unless substantive objections are filed. These requests must also be submitted in the form of a "Petition to Amend" as described above. BLM and the Energy Commission intend to integrate a process to jointly approve insignificant project changes to avoid duplication of approval processes and ensure appropriate documentation for the public record.</p> <p>Verification Change - A verification change may be modified by the BLM's Authorized Officer and the without requesting an amendment to the ROW Grant or Energy Commission decision if the change does not conflict with the conditions of certification and provides an effective alternate means of verification.</p>		As needed	As needed	See amendments under specific condition			
Cultural Resources	CUL-10	If fill soils must be acquired from a non-commercial borrow site or disposed of to a non-commercial disposal site, unless less-than-five-year-old surveys of these sites for archaeological resources are documented to and approved by the BLM's Authorized Officer and the CPM, the CRS shall survey the borrow and/or disposal site(s) for cultural resources and record on DPR 523 forms any that are identified. When the survey is completed, the CRS shall convey the results and recommendations for further action to the project owner, the BLM's Authorized Officer, and the CPM, who will determine what, if any, further action is required. If the BLM's Authorized Officer and the CPM determine that significant archaeological resources that cannot be avoided are present at the borrow site, all these conditions of certification shall apply. The CRS shall report on the methods and results of these surveys in the CRR.	<p>1. As soon as the project owner knows that a non-commercial borrow site and/or disposal site will be used, he/she shall notify the CRS and CPM and provide documentation of previous archaeological survey, if any, dating within the past five years, for CPM approval.</p> <p>2. In the absence of documentation of recent archaeological survey, at least 30 days prior to any soil borrow or disposal activities on the noncommercial borrow and/or disposal sites, the CRS shall survey the site/s for archaeological resources. The CRS shall notify the project owner, the BLM's Authorized Officer, and the CPM of the results of the cultural resources survey, with recommendations, if any, for further action.</p>	Ongoing	As needed				
Facility Design	GEN-1	<p>The project owner shall design, construct, and inspect the project in accordance with the 2007 California Building Standards Code (CBCS), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (CBC), California Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering LORS in effect at the time initial design plans are submitted to the chief building official (CBO) for review and approval (the CBCS in effect is the edition that has been adopted by the California Building Standards Commission and published at least 180 days previously). The project owner shall ensure that all the provisions of the above applicable codes are enforced during the construction, addition, alteration, moving, demolition, repair, or maintenance of the completed facility (2007 CBC, Appendix Chapter 1, section 101.2, Scope). All transmission facilities (lines, switchyards, switching stations, and substations) are covered in the Conditions of Certification in the Transmission System Engineering section of this document.</p> <p>In the event that the initial engineering designs are submitted to the CBO when the successor to the 2007 CBCS is in effect, the 2007 CBCS provisions shall be replaced with the applicable successor provisions.</p> <p>Where, in any specific case, different sections of the code specify different materials, methods of construction, or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.</p> <p>The project owner shall ensure that all contracts with contractors, subcontractors, and suppliers clearly specify that all work performed and materials supplied comply with the codes listed above.</p>	<p>Within 30 days following receipt of the certificate of occupancy, the project owner shall submit to BLM's Authorized Officer and the Compliance Project Manager (CPM) a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation, and inspection requirements of the applicable LORS and the Energy Commission's decision have been met in the area of facility design. The project owner shall provide BLM's Authorized Officer and the CPM a copy of the certificate of occupancy within 30 days of receipt from the CBO (2007 CBC, Appendix Chapter 1, section 110, Certificate of Occupancy).</p> <p>Once the certificate of occupancy has been issued, the project owner shall inform BLM's Authorized Officer and the CPM at least 30 days prior to any construction, addition, alteration, moving, demolition, repair, or maintenance to be performed on any portion(s) of the completed facility that requires CBO approval for compliance with the above codes. BLM's Authorized Officer and the CPM will then determine if the CBO needs to approve the work.</p>	Completed	30 days following receipt of the certificate of occupancy	22-Jan-2015			<p>The Certificate of Occupancy was issued by CEC/CBO on January 21, 2015.</p> <p>The Certificate of Occupancy was submitted to BLM on 1/22/2015.</p>

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Facility Design	GEN-8	The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. The project owner shall notify BLM's Authorized Officer and the CPM after obtaining the CBO's final approval. The project owner shall retain one set of approved engineering plans, specifications, and calculations (including all approved changes) at the project site or at an alternative site approved by BLM's Authorized Officer and the CPM during the operating life of the project (2007 CBC, Appendix Chapter 1, section 106.3.1, Approval of Construction Documents). Electronic copies of the approved plans, specifications, calculations, and marked-up as-builts shall be provided to the CBO for retention by BLM's Authorized Officer and the CPM.	Within 15 days of the completion of any work, the project owner shall submit to the CBO, with a copy to BLM's Authorized Officer and the CPM, in the next monthly compliance report, (a) a written notice that the completed work is ready for final inspection, and (b) a signed statement that the work conforms to the final approved plans. After storing the final approved engineering plans, specifications, and calculations described above, the project owner shall submit to BLM's Authorized Officer and the CPM a letter stating both that the above documents have been stored and the storage location of those documents. Within 90 days of the completion of construction, the project owner shall provide to the CBO three sets of electronic copies of the above documents at the project owner's expense. These are to be provided in the form of "read only" (Adobe .pdf 6.0) files, with restricted (password-protected) printing privileges, on archive quality compact discs.	COMPLETED (CONSTRUCTION) SUBMITTED	within 15 days of completion of any work; within 90 days of completion of construction	8-Dec-2014			Electronic copies of the final approved engineering plans were hand-delivered by Doug Davis to CEC on 12/8/2014.
Hazardous Materials	HAZ-1	The project owner shall not use any hazardous materials not listed in Hazardous Materials Appendix A, below, or in greater quantities than those identified by chemical name in Hazardous Materials Appendix A, unless approved in advance by the BLM's Authorized Officer and Compliance Project Manager (CPM).	The project owner shall provide to BLM's Authorized Officer and the CPM in the Annual Compliance Report, a list of hazardous materials contained at the facility.	ONGOING - ANNUALLY	ANNUALLY - To be submitted with the ACR	1/30/2015; 1/29/2016			Submitted in the Annual Compliance Report
Hazardous Materials	HAZ-2	The project owner shall concurrently provide a Hazardous Materials Business Plan to the Hazardous Materials Division of the County of San Bernardino Fire Department, BLM's Authorized Officer and the CPM for review. After receiving comments from the Hazardous Materials Division of the County of San Bernardino Fire Department, BLM's Authorized Officer and the CPM, the project owner shall reflect all received recommendations in the final documents. If no comments are received from the county within 30 days of submittal, the project owner may proceed with preparation of final documents upon receiving comments from BLM's Authorized Officer and the CPM. . Copies of the final Hazardous Materials Business Plan shall then be provided to the Hazardous Materials Division of the County of San Bernardino Fire Department for information and to the BLM's Authorized Officer and CPM for approval.	At least 60 days prior to receiving any hazardous material on the site for commissioning or operations, the project owner shall provide a copy of a final Hazardous Materials Business Plan to BLM's Authorized Officer and the CPM for approval.	COMPLETED (CONSTRUCTION) ONGOING COMPLIANCE DURING OPERATIONS	60 days prior receiving any hazardous material on the site	9/26/2012, 11/01/12 & 12/14/12; 2/13/2013			Chem Clean procedures submitted 9/26/12, 11/01/12 and 12/14/12. Submitted Hazardous Materials Business Plan on 2/13/2013.
Hazardous Materials	HAZ-3	The project owner shall develop and implement a Safety Management Plan for delivery of liquid hazardous materials. The plan shall include procedures, protective equipment requirements, training and a checklist. It shall also include a section describing all measures to be implemented to prevent mixing of incompatible hazardous materials. This plan shall be applicable during construction, commissioning, and operation of the power plant.	At least sixty (60) days prior to the delivery of any liquid hazardous material to the facility, the project owner shall provide a Safety Management Plan as described above to BLM's Authorized Officer and the CPM for review and approval	Approved - COMPLETED (CONSTRUCTION) ONGOING COMPLIANCE DURING OPERATIONS	60 days prior to the delivery of any liquid hazardous material to the facility	29-Apr-2013	13-Jun-2013		Safety Management Plan submitted on 4/29/13
Hazardous Materials	HAZ-5	The project owner shall prepare a site-specific Operation Security Plan for the operational phase, which shall be made available to BLM's Authorized Officer and the CPM for review and approval. The project owner shall implement site security measures addressing physical site security and hazardous materials storage.	At least 30 days prior to the initial receipt of hazardous materials onsite, the project owner shall notify BLM's Authorized Officer and the CPM that a sitespecific Operations Site Security Plan is available for review and approval. In the Annual Compliance Report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed, and updated certification statements are appended to the Operations Security Plan. In the Annual Compliance Report, the project owner shall include a statement that the Operations Security Plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations. The level of security to be implemented shall not be less than that described below (as per NERC 2002). The Operations Security Plan shall include the following: 1. Permanent full perimeter fence or wall, at least eight feet high around the Solar Field; Ivanpah Solar Electric Generating System Page 15 07-AFC-5 2. Main entrance security gate, either hand operable or motorized; 3. Evacuation procedures; 4. Protocol for contacting law enforcement, BLM's Authorized Officer and the CPM in the event of suspicious activity or emergency or conduct endangering the facility, its employees, or contractors; and 5. Written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on-site or off-site; a. A statement (refer to sample, attachment "A") signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to ascertain the accuracy of employee identity and employment history, and shall be conducted in accordance with state and federal law regarding security and privacy;	ONGOING	30 days prior to the initial receipt of hazardous materials ANNUALLY beginning 2015	1/30/2015; 1/29/2016			Submitted with the Annual Compliance Report on 1/30/2015

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Hazardous Materials	HAZ-5 (continued-1)	The project owner shall prepare a site-specific Operation Security Plan for the operational phase, which shall be made available to BLM's Authorized Officer and the CPM for review and approval. The project owner shall implement site security measures addressing physical site security and hazardous materials storage.	<p>b. A statement(s) (refer to sample, attachment "B") signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by BLM's Authorized Officer and the CPM after consultation with the project owner) that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by BLM's Authorized Officer and the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractor personnel that visit the project site. Background investigations shall be restricted to ascertain the accuracy of employee identity and employment history, and shall be conducted in accordance with state and federal law regarding security and privacy;</p> <p>6. a. A statement (refer to sample, attachment "A") signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to ascertain the accuracy of employee identity and employment history, and shall be conducted in accordance with state and federal law regarding security and privacy;</p> <p>b. A statement(s) (refer to sample, attachment "B") signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by BLM's Authorized Officer and the CPM after consultation with the project owner) that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by BLM's Authorized Officer and the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractor personnel that visit the project site. Background investigations shall be restricted to ascertain the accuracy of employee identity and employment history, and shall be conducted in accordance with state and federal law regarding security and privacy;</p> <p>7. Site access controls for employees, contractors, vendors, and visitors;</p>	ONGOING	30 days prior to the initial receipt of hazardous materials ANNUALLY beginning 2015	1/30/2015; 1/29/2016			Submitted with the Annual Compliance Report on 1/30/2015
Hazardous Materials	HAZ-5 (continued-2)	The project owner shall prepare a site-specific Operation Security Plan for the operational phase, which shall be made available to BLM's Authorized Officer and the CPM for review and approval. The project owner shall implement site security measures addressing physical site security and hazardous materials storage.	<p>8. Closed Circuit TV (CCTV) monitoring system, recordable, and viewable in the power plant control room and security station (if separate from the control room) capable of viewing, at a minimum, the main entrance gate; and</p> <p>9. Additional measures to ensure adequate perimeter security consisting of either:</p> <p>a. Security guard present 24 hours per day, seven days per week, OR</p> <p>b. Power plant personnel on-site 24 hours per day, seven days per week and all of the following:</p> <p>1) The CCTV monitoring system required in number 8 above shall include cameras that are able to pan, tilt, and zoom (PTZ), have Ivanpah Solar Electric Generating System Page 16 07-AFC-5 low-light capability, are recordable, and are able to view 100% of the perimeter fence, the outside entrance to the control room, and the front gate from a monitor in the power plant control room; AND</p> <p>2) Perimeter breach detectors or on-site motion detectors.</p> <p>The project owner shall fully implement the security plans and obtain BLM's Authorized Officer and CPM approval of any substantive modifications to the security plans. BLM's Authorized Officer and the CPM may authorize modifications to these measures, or may require additional measures, such as protective barriers for critical power plant components (e.g., transformers, gas lines, compressors, etc.) depending on circumstances unique to the facility or in response to industry-related standards, security concerns, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Council, after consultation with appropriate law enforcement agencies and the project owner.</p>	ONGOING	30 days prior to the initial receipt of hazardous materials ANNUALLY	30-Jan-2015			Submitted with the Annual Compliance Report on 1/30/2015
Hazardous Materials	HAZ-6	The holder (project owner) shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b	A copy of any report required or requested by any Federal agency or State government entity as a result of a reportable release or spill of any toxic substances shall be furnished to BLM's Authorized Officer and the CPM concurrent with the filing of the reports with the Federal or State governmental entity.	ONGOING	As Needed				

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Land Use	LAND-1	<p>The project owner shall obtain a Right-of-Way Grant (ROW Grant) from the Bureau of Land Management (BLM). Among the conditions for obtaining the ROW grant, the applicant shall provide the following:</p> <p>A. Prior to issuance of any right of way grant, the project owner shall submit a final Plan(s) of Development that describes in detail the construction, operation, maintenance, and termination of the right-of-way and its associated improvements and/or facilities. The project owner shall construct, operate, and maintain the facilities, improvements, and structures within this right-of-way in strict conformity with the final approved Plan of Development. The degree and scope of these plans will vary depending upon (1) the complexity of the right-of-way or its associated improvements and/or facilities, (2) the anticipated conflicts that require mitigation, and (3) additional technical information required by BLM's Authorized Officer and the CPM. The plans will be reviewed, and if appropriate, modified by the project owner until acceptable, and approved by BLM's Authorized Officer and the CPM.</p> <p>B. A bond, acceptable to BLM's Authorized Officer, shall be furnished by the owner prior to the issuance of a Notice to Proceed with construction or at such earlier date as may be specified by BLM's Authorized Officer. The amount of this bond shall be determined by BLM's Authorized Officer. This bond must be maintained in effect until removal of improvements and restoration of the right-of-way have been accepted by BLM's Authorized Officer and the CPM.</p>	<p>At least 30 days prior to the start of construction and prior to any Notice to Proceed with construction issued by BLM's Authorized Officer and the CPM, the project owner shall provide BLM's Authorized Officer and the CPM with documentation of the following:</p> <p>A. BLM's ROW Grant and final approved Plan of Development;</p> <p>B. The bond satisfactory to BLM's Authorized Officer;</p> <p>C. Certification that the project owner acknowledges that the ISEGS development and all related construction, operation, maintenance and closure activities are to be conducted in conformance with the approved Plan of Development and within the approved ROW boundaries for the life of the project.</p>	<p>COMPLETED (CONSTRUCTION)</p> <p>ONGOING COMPLIANCE DURING OPERATIONS</p>	30 days prior to start of construction	4-Oct-2010	3/14/2012 CLA and Tortoise Pen along I-15; 5/07/12 Yates Well rd;		BLM issued ROW grants: CACA 049502 (CLA) - 10/7/10; CACA 049504 (Unit 1) - 10/7/10; CACA 048668 (Unit 2) - 10/7/10; CACA 049503 (Unit 3) - 10/7/13; CACA 049502 Amend. #1 - 3/14/11; Amend. #2 - 3/9/12; Amend. #3 - 5/2/12; Amend. #4 - 3/26/13 and Amend. #5 - 4/16/13
Land Use	LAND-3	<p>Prior to the start of commercial operations of the first ISEGS power plant to be constructed, the project owner shall prepare plans for a <u>Solar / Ecological Interpretive Center</u> to be developed to in the vicinity of the ISEGS project. The project owner in consultation with the County shall propose a location on-site or off-site that provides a vantage point to observe as many features as is possible of the ISEGS project without compromising safety or security. The project owner's plans for the Solar / Ecological Interpretive Center may be coordinated with San Bernardino County. The Solar / Ecological Interpretive Center shall include or make accessible to the public the following features:</p> <ol style="list-style-type: none"> 1. surfaced public parking 2. information kiosks describing ISEGS solar energy technology; 3. picnic area with tables, 4. garbage cans; 5. interpretive signs identifying local landmarks and ecological features; 6. a contained restroom facility (or reasonable access to a facility with flush toilets and sinks should the Solar / Ecological Interpretive Center be constructed adjacent to another facility having a restroom). 	<p>At least 30 days prior to commercial operation of the first power plant of the ISEGS development, the project owner shall submit plans to BLM's Authorized Officer and the CPM for review and approval for a Solar / Ecological Interpretive Center to be developed in the ISEGS vicinity in coordination with San Bernardino County. Within 6 months of approval of the proposed Solar Ecological Interpretive Center plans (1) by the Commission and the BLM, for an on-site Center, or (2) by the County of San Bernardino, for an off-site Center, being final and no longer subject to administrative or judicial review, the project owner shall commence construction of the Center and shall to the extent feasible complete construction within one year following the start of construction if the Center is located off of the ISEGS site. If located onsite, then construction of the Center shall follow the completion of all ISEGS construction. Upon completion the project owner shall submit notice to BLM and the Energy Commission that it has completed construction of the Solar / Ecological Interpretive Center.</p> <p>In each Annual Compliance Report, the project owner shall provide a summary of estimated public use of the Solar / Ecological Interpretive Center and summarize any issues associated with operating and maintenance activities.</p>	<p>Submitted and Approved -</p> <p>ONGOING DURING PROJECT OPERATIONS</p>	30 days prior to commercial operations. 60 days after completion of construction Annually beginning 2016	9/23/2013; 7/16/2015; 1/29/2016	BLM Approved on 9/23/13		<p>9/25/13: Solar/Ecological Interpretive Center Plan was submitted to BLM on 9/23/2013; BLM approved on 9/25/13. The Plan was submitted to BLM on 9/25/13.</p> <p>1/20/2015 to 4/17/2015: Construction period.</p> <p>5/13/2015: BLM inspected and accepted the Solar Ecological Interpretive Center.</p> <p>7/16/2015: Submitted post-construction report for the Solar Ecological Interpretive Center</p>
Noise & Vibration	NOISE-3	<p>The project owner shall submit to BLM's Authorized Officer and the CPM for review and approval a <u>noise control program</u> and a statement, signed by the project owner's project manager, verifying that the noise control program will be implemented throughout construction of the project. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal/OSHA standards.</p>	<p>At least 30 days prior to the start of ground disturbance, the project owner shall submit to BLM's Authorized Officer and the CPM the <u>noise control program</u> and the project owner's project manager's signed statement. The project owner shall make the program available to Cal/OSHA upon request.</p>	<p>Approved - COMPLETED</p> <p>ONGOING COMPLIANCE DURING OPERATIONS</p>	30 days prior to the start of ground disturbance	11-Aug-2010	7-Oct-2010		
Noise & Vibration	NOISE-4	<p>The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that operation of the project will not cause noise complaints from residents of Primm, Nevada, or from the operator of the Primm Valley Golf Course or from visitors from the Mojave National Preserve. If legitimate project-related noise complaints are received from residents of Primm, the project owner shall perform a noisuresurvey to demonstrate that noise levels due to plant operation do not exceed an average of 45 dBA Leq measured at the nearest residence of the community of Primm, Nevada. If legitimate project-related noise complaints are received from the operator of the Primm Valley Golf Course, or the visitors from the Mojave National Preserve, the project owner shall perform a noise survey to demonstrate that noise levels due to plant operation do not exceed an average of 55 dBA Leq measured at the nearest boundary of the golf course, or the nearest boundary of the Mojave National Preserve, respectively. No new project components creating pure-tone noises will be added to the project unless they are balanced by other plant features. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.</p> <p>A. The measurement of power plant noise for the purposes of demonstrating compliance with this condition of certification may alternatively be made at a location, acceptable to BLM's Authorized Officer and the CPM, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the affected location. The character of the plant noise shall be evaluated at the affected residential locations to determine the presence of pure tones or other dominant sources of plant noise.</p>	<p>The survey shall take place within 30 days of the receipt of the noise complaint, unless the complaint has been resolved to the complaining party's satisfaction. Within 15 days after completing the survey, the project owner shall submit a summary report of the survey to BLM's Authorized Officer and the CPM. Included in the survey report will be a description of additional mitigation measures (if any) necessary to achieve compliance with the above-listed noise limit and a schedule, subject to BLM's Authorized Officer and CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.</p> <p>Within 15 days of completion of the new survey, the project owner shall submit to BLM's Authorized Officer and the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.</p>	<p>ONGOING DURING OPERATIONS</p>	Within 30 days of the Receipt of noise Complaint				

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Noise & Vibration	NOISE-5	Following each phase (Ivanpah 1, Ivanpah 2, and Ivanpah 3) of the project's first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility. The surveys shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations sections 5095-5099 and Title 29, Code of Federal Regulations section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure. The project owner shall prepare reports of the survey results and, if necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.	Within 30 days after completing each survey, the project owner shall submit the noise survey report to BLM's Authorized Officer and the CPM. The project owner shall make the reports available to OSHA and Ca/OSHA upon request.	ONGOING DURING OPERATIONS	Within 30 days after completing each survey	28-Oct-2014			Noise survey was conducted on 10/3/2014. The report was submitted to CEC and BLM on 10/28/2014.
Noise & Vibration	NOISE-6	Noisy construction work or heavy equipment operation that causes offsite annoyance as evidenced by the filing of a legitimate noise complaint shall be restricted to 7:00 am to 7:00 pm time period. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.	Prior to ground disturbance, the project owner shall transmit to BLM's Authorized Officer and the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.	Approved - COMPLETED (CONSTRUCTION)	prior to ground disturbance	28-Jul-2010	2-Sep-2010		
Geology & Paleontology	PAL-6	The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed including collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all paleontological resource materials encountered and collected during project construction.	The project owner shall maintain in his/her compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The project owner shall maintain these files for a period of three years after project completion and approval of BLM Authorized Officer- and CPM-approved paleontological resource report (see PAL-7). The project owner shall be responsible for paying any curation fees charged by the museum for fossils collected and curated as a result of paleontological mitigation. A copy of the letter of transmittal submitting the fossils to the curating institution shall be provided to BLM's Authorized Officer and the CPM.	ONGOING	Files are needed to be maintained for 3 years after project completion.				
Geology & Paleontology	PAL-7	The project owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated PRS. The PRR shall be prepared following completion of the ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information, and submit it to the CPM for review and approval. The report shall include, but is not limited to, a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; determinations of sensitivity and significance; and a statement by the PRS that project impacts to paleontological resources have been mitigated below the level of significance.	Within 90 days after completion of ground-disturbing activities, including landscaping, the project owner shall submit the PRR under confidential cover to BLM's Authorized Officer and the CPM.	SUBMITTED	90 days after completion of ground disturbing activities	9-Jan-2014			1/9/14: Paleontological Resources Report was submitted by CH2M Hill to CEC and BLM on 1/9/2014.
Recreation	REC-1	Prior to the start of construction and in conformance with § 25529 of the Warren-Alquist Act, the project owner shall prepare plans for a Solar / Ecological Interpretive Center to be developed in the ISEGS Construction Logistics Area and submit them to BLM's Authorized Officer and the CPM for review and approval. The plans shall propose a location that if possible provides a vantage point to observe as many features as is possible of the ISEGS project without compromising ISEGS security requirements. The Solar / Ecological Interpretive Center shall include the following features: 1. surfaced public parking for 12 vehicles (4 of which would allow vehicles with trailers); 2. information kiosks describing ISEGS solar energy technology; 3. picnic area with 8 shaded tables; 4. garbage cans; 5. interpretive signs identifying local landmarks and ecological features; 6. a two stall contained restroom facility (or a facility with flush toilets and sinks); 7. a drinking fountain; and 8. native plant landscaping with plant identification labels. Prior to commercial operation of the first constructed power plant of the ISEGS development, the project owner shall complete construction of the Solar / Ecological Interpretive Center and request final approval by both BLM's Authorized Officer and the CPM. The project owner shall operate and maintain the Solar / Ecological Interpretive Center for the life of the ISEGS project.	Verification: At least 30 days prior to completion of construction of the first power plant of the ISEGS development, the project owner shall submit plans for a Solar / Ecological Interpretive Center to be developed in the ISEGS Construction Logistics Area and submit them to BLM's Authorized Officer and the CPM for review and approval. Prior to commercial operation, the project owner shall submit notice to BLM and the Energy Commission that it has completed construction of the Solar / Ecological Interpretive Center and shall request final approval by both BLM's Authorized Officer and the CPM. <u>After commercial operation and in each Annual Compliance Report for the life of the ISEGS project, the project owner shall provide a summary of estimated public utilization of the Solar / Ecological Interpretive Center and summarize any issues associated with operating and maintenance activities.</u>	Submitted and Approved - ONGOING DURING PROJECT OPERATIONS	30 days prior to commercial operations. 60 days after completion of construction Annually beginning 2016	9/23/2013; BLM was notified of SEIC completion and accepted on 5/13/2015; CEC was notified of SEIC completion and accepted on 5/19/2015; SEIC Post Construction report was submitted on 7/16/2015	BLM Approved on 9/23/13; BLM accepted on 5/13/2015; CEC accepted on 5/19/2015		9/25/13: Solar/Ecological Interpretive Center Plan was submitted to BLM on 9/23/2013; BLM approved on 9/25/13. The Plan was submitted to CEC on 9/25/13. SEIC has been bid out and construction will start in early 2015. 5/13/2015: BLM inspected and accepted the Solar Ecological Interpretive Center. 7/16/2015: Submitted post-construction report for the Solar Ecological Interpretive Center
Recreation	REC-2	The applicant shall allow and be required to afford public access to the routes for which BLM grants a right of way, as noted above. Effectiveness: By allowing public access to the routes that are redirected around the project perimeter, the current level of public access to recreational areas would be maintained.	No Verification: see Effectiveness	ONGOING	N/A				

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Soil & Water	S&W-1	<p>Prior to site mobilization, the project owner shall obtain both BLM's Authorized Officer and the CPM's approval for a site specific DRAINAGE EROSION AND SEDIMENT CONTROL PLAN (DESCP) that ensures protection of water quality and soil resources of the project site and all linear facilities for both the construction and operation phases of the project. This plan shall address appropriate methods and actions, both temporary and permanent, for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, and identify all monitoring and maintenance activities. The project owner shall complete all engineering plans, reports, and documents necessary for both LM's Authorized Officer and the CPM to conduct a review of the proposed project and provide a written evaluation as to whether the proposed grading, drainage improvements, and flood management activities comply with all requirements presented herein. The plan shall be consistent with the grading and drainage plan as required by Condition of Certification CIVIL-1 and shall contain the following elements:</p> <p>Vicinity Map: A map shall be provided indicating the location of all project elements with depictions of all major geographic features to include watercourses, washes, irrigation and canals, major utilities, roads, and drainage facilities. Adjacent property owners shall be identified on the plan maps. All maps shall be presented at a legible scale.</p> <p>Site Delineation: The site and all project elements shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, underground utilities, roads, and drainage facilities. Adjacent property owners shall be identified on the plan maps. All maps shall be presented at a legible scale.</p> <p>Drainage: The DESCP shall include the following elements:</p> <p>a. Topography. Topography for offsite areas are required to define the existing upstream tributary areas to the site and downstream to provide enough definition to map the existing storm water flow and flood hazard. Spot elevations shall be required where relatively flat conditions exist.</p> <p>b. Proposed Grade. Proposed grade contours shall be shown at a scale appropriate for delineation of onsite ephemeral washes, drainage ditches, and tie-ins to the existing topography.</p> <p>c. Hydrology. Existing and proposed hydrologic calculations for onsite areas and offsite areas that drain to the site; include maps showing the drainage area boundaries and sizes in acres, topography and typical overland flow directions, and show all existing, interim, and proposed drainage infrastructure and their intended direction of flow.</p> <p>d. Hydraulics. Provide hydraulic calculations to support the selection and sizing of the onsite drainage network, diversion facilities and BMPs.</p> <p>Watercourses and Critical Areas: The DESCP shall show the location of all onsite and nearby watercourses including washes, irrigation and drainage canals, and drainage ditches, and shall indicate the proximity of those features to the construction site. Maps shall identify high hazard flood prone areas.</p>	<p>The DESCP shall be consistent with the grading and drainage plan as required by Condition of Certification CIVIL-1, and relevant portions of the DESCP shall be submitted to the chief building official (CBO) for review and approval. In addition, the project owner shall do all of the following:</p> <p>a. No later than ninety (90) days prior to start of site mobilization, the project owner shall submit a copy of the DESCP to the County of San Bernardino and the RWQCB for review and comment. Both BLM's Authorized Officer and the CPM shall consider comments received from San Bernardino County and RWQCB and approve the DESCP.</p> <p>b. During construction, the project owner shall provide an analysis in the monthly compliance report on the effectiveness of the drainage-, erosion- and sedimentcontrol measures and the results of monitoring and maintenance activities.</p> <p>c. Once operational, the project owner shall provide in the annual compliance report information on the results of storm water BMP monitoring and maintenance activities.</p> <p>d. Provide BLM's Authorized Officer and the CPM with two (2) copies each of all monitoring or compliance reports.</p>	<p>DESCP was submitted and approved</p> <p>IN PROGRESS / ONGOING DURING OPERATIONS</p>	<p>90 days prior to the start of site mobilization,</p> <p>Annually Beginning 2015</p>	<p>DESCP (Phase 1) 6/15/2010; (Phase 2) 1/28/2011; (Phase 3) 4/8/2011.</p> <p>Submitted with the Annual Compliance Report on 1/30/2015.;</p> <p>1/29/2016</p>	<p>DESCP (Phase 1) 10/4/2010</p>		<p>Ongoing reporting in the monthly compliance report, Annual SWPP submitted 8/31/12</p> <p>DESCP (Phase 1) - Approved; (Phase 2) - Submitted; (Phase 3) - Submitted;</p> <p>Submitted in the Annual Compliance Report</p>
Soil & Water	S&W-1 (continued-1)	<p>Site Delineation: The site and all project elements shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, underground utilities, roads, and drainage facilities. Adjacent property owners shall be identified on the plan maps. All maps shall be presented at a legible scale.</p> <p>Drainage: The DESCP shall include the following elements:</p> <p>a. Topography. Topography for offsite areas are required to define the existing upstream tributary areas to the site and downstream to provide enough definition to map the existing storm water flow and flood hazard. Spot elevations shall be required where relatively flat conditions exist.</p> <p>b. Proposed Grade. Proposed grade contours shall be shown at a scale appropriate for delineation of onsite ephemeral washes, drainage ditches, and tie-ins to the existing topography.</p> <p>c. Hydrology. Existing and proposed hydrologic calculations for onsite areas and offsite areas that drain to the site; include maps showing the drainage area boundaries and sizes in acres, topography and typical overland flow directions, and show all existing, interim, and proposed drainage infrastructure and their intended direction of flow.</p> <p>d. Hydraulics. Provide hydraulic calculations to support the selection and sizing of the onsite drainage network, diversion facilities and BMPs.</p> <p>Watercourses and Critical Areas: The DESCP shall show the location of all onsite and nearby watercourses including washes, irrigation and drainage canals, and drainage ditches, and shall indicate the proximity of those features to the construction site. Maps shall identify high hazard flood prone areas.</p>	<p>The DESCP shall be consistent with the grading and drainage plan as required by Condition of Certification CIVIL-1, and relevant portions of the DESCP shall be submitted to the chief building official (CBO) for review and approval. In addition, the project owner shall do all of the following:</p> <p>a. No later than ninety (90) days prior to start of site mobilization, the project owner shall submit a copy of the DESCP to the County of San Bernardino and the RWQCB for review and comment. Both BLM's Authorized Officer and the CPM shall consider comments received from San Bernardino County and RWQCB and approve the DESCP.</p> <p>b. During construction, the project owner shall provide an analysis in the monthly compliance report on the effectiveness of the drainage-, erosion- and sedimentcontrol measures and the results of monitoring and maintenance activities.</p> <p>c. Once operational, the project owner shall provide in the annual compliance report information on the results of storm water BMP monitoring and maintenance activities.</p> <p>d. Provide BLM's Authorized Officer and the CPM with two (2) copies each of all monitoring or compliance reports.</p>	<p>DESCP was submitted and approved</p> <p>IN PROGRESS / ONGOING DURING OPERATIONS</p>	<p>90 days prior to the start of site mobilization,</p> <p>Annually Beginning 2015</p>	<p>DESCP (Phase 1) 6/15/2010; (Phase 2) 1/28/2011; (Phase 3) 4/8/2011.</p> <p>Submitted with the Annual Compliance Report on 1/30/2015.;</p> <p>1/29/2016</p>	<p>DESCP (Phase 1) 10/4/2010</p>		<p>Ongoing reporting in the monthly compliance report, Annual SWPP submitted 8/31/12</p> <p>DESCP (Phase 1) - Approved; (Phase 2) - Submitted; (Phase 3) - Submitted;</p> <p>Submitted in the Annual Compliance Report</p>

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Soil & Water (Continued)	S&W-1 (continued-2)	<p>Clearing and Grading: The plan shall provide a delineation of all areas to be cleared of vegetation, areas to be preserved, and areas where vegetation would be cut to allow clear movement of the heliostats. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross-sections, cut/fill depths or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Existing and proposed topography tying in proposed contours with existing topography shall be illustrated. The DESC shall include a statement of the quantities of material excavated at the site, whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported or a statement explaining that there would be no clearing and/or grading conducted for each element of the project. Areas of no disturbance shall be properly identified and delineated on the plan maps.</p> <p>Soil Wind and Water Erosion Control: The plan shall address exposed soil treatments to be used during construction and operation of the proposed project for both road and non-road surfaces including specifically identifying all chemical based dust palliatives, soil bonding, and weighting agents appropriate for use at the proposed project site that would not cause adverse effects to vegetation; BMPs shall include measures designed to prevent wind and water erosion including application of chemical dust palliatives after rough grading to limit water use. All dust palliatives, soil binders, and weighting agents shall be approved by both BLM's Authorized Officer and the CPM prior to use.</p> <p>Project Schedule: The DESC shall identify on the topographic site map the location of the site-specific BMPs to be employed during each phase of construction (initial grading, project element construction, and final grading/stabilization). BMP implementation schedules shall be provided for each project element for each phase of construction.</p>	<p>The DESC shall be consistent with the grading and drainage plan as required by Condition of Certification CIVIL-1, and relevant portions of the DESC shall be submitted to the chief building official (CBO) for review and approval. In addition, the project owner shall do all of the following:</p> <p>a. No later than ninety (90) days prior to start of site mobilization, the project owner shall submit a copy of the DESC to the County of San Bernardino and the RWQCB for review and comment. Both BLM's Authorized Officer and the CPM shall consider comments received from San Bernardino County and RWQCB and approve the DESC.</p> <p>b. During construction, the project owner shall provide an analysis in the monthly compliance report on the effectiveness of the drainage-, erosion- and sediment control measures and the results of monitoring and maintenance activities.</p> <p>c. Once operational, the project owner shall provide in the annual compliance report information on the results of storm water BMP monitoring and maintenance activities.</p> <p>d. Provide BLM's Authorized Officer and the CPM with two (2) copies each of all monitoring or compliance reports.</p>	<p>DESCP was submitted and approved</p> <p>IN PROGRESS / ONGOING DURING OPERATIONS</p>	<p>90 days prior to the start of site mobilization,</p> <p>Annually Beginning 2015</p>	<p>DESCP (Phase 1) 6/15/2010; (Phase 2) 1/28/2011; (Phase 3) 4/8/2011.</p> <p>Submitted with the Annual Compliance Report on 1/30/2015.;</p> <p>1/29/2016</p>	<p>DESCP (Phase 1) 10/4/2010</p>		<p>Ongoing reporting in the monthly compliance report, Annual SWPP submitted 8/31/12</p> <p>DESCP (Phase 1) - Approved; (Phase 2) - Submitted; (Phase 3) - Submitted;</p> <p>Submitted in the Annual Compliance Report</p>
Soil & Water	S&W-1 (continued-3)	<p>Best Management Practices: The DESC shall show the location, timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading, during project element excavation and construction, during final grading/stabilization, and after construction. BMPs shall include measures designed to control dust and stabilize construction access roads and entrances. The maintenance schedule shall include post-construction maintenance of treatment-control BMPs applied to disturbed areas following construction.</p> <p>Erosion Control Drawings: The erosion-control drawings and narrative shall be designed, stamped and sealed by a professional engineer or erosion control specialist.</p> <p>Agency Comments: The DESC shall include copies of recommendations from the County of San Bernardino, California Department of Fish and Game (CDFG), and Lahontan Regional Water Quality Control Board (RWQCB).</p> <p>Monitoring Plan: Monitoring activities shall include routine measurement of the volume of accumulated sediment in the onsite drainage ditches, and storm water diversions and the requirements specified in Appendix B, C, and D.</p>	<p>The DESC shall be consistent with the grading and drainage plan as required by Condition of Certification CIVIL-1, and relevant portions of the DESC shall be submitted to the chief building official (CBO) for review and approval. In addition, the project owner shall do all of the following:</p> <p>a. No later than ninety (90) days prior to start of site mobilization, the project owner shall submit a copy of the DESC to the County of San Bernardino and the RWQCB for review and comment. Both BLM's Authorized Officer and the CPM shall consider comments received from San Bernardino County and RWQCB and approve the DESC.</p> <p>b. During construction, the project owner shall provide an analysis in the monthly compliance report on the effectiveness of the drainage-, erosion- and sediment control measures and the results of monitoring and maintenance activities.</p> <p>c. Once operational, the project owner shall provide in the annual compliance report information on the results of storm water BMP monitoring and maintenance activities.</p> <p>d. Provide BLM's Authorized Officer and the CPM with two (2) copies each of all monitoring or compliance reports.</p>	<p>DESCP was submitted and approved</p> <p>IN PROGRESS / ONGOING DURING OPERATIONS</p>	<p>90 days prior to the start of site mobilization,</p> <p>Annually Beginning 2015</p>	<p>DESCP (Phase 1) 6/15/2010; (Phase 2) 1/28/2011; (Phase 3) 4/8/2011.</p> <p>Submitted with the Annual Compliance Report on 1/30/2015.;</p> <p>1/29/2016</p>	<p>DESCP (Phase 1) 10/4/2010</p>		<p>Ongoing reporting in the monthly compliance report, Annual SWPP submitted 8/31/12</p> <p>DESCP (Phase 1) - Approved; (Phase 2) - Submitted; (Phase 3) - Submitted;</p> <p>Submitted in the Annual Compliance Report</p>
Soil & Water	S&W-2	<p>The project owner shall comply with the requirements specified in Appendix B, C, and D for dredge and fill, wastewater, and storm water discharges associated with construction and industrial activity. These requirements relate to discharges, or potential discharges, of waste that could affect the quality of waters of the state, and were developed in consultation with staff of the State Water Resources Control Board and/or the applicable California Regional Water Quality Control Board (hereafter "Water Boards"). It is the Commission's intent that these requirements be enforceable by both the Commission and the Water Boards. In furtherance of that objective, the Commission hereby delegates the enforcement of these requirements, and associated monitoring, inspection and annual fee collection authority, to the Water Boards. Accordingly, the Commission and the Water Board shall confer with each other and coordinate, as needed, in the enforcement of the requirements. The project owner shall pay the annual waste discharge permit fee associated with this facility to the Water Boards. In addition, the Water Boards may "prescribe" these requirements as waste discharge requirements pursuant to Water Code Section 13263 solely for the purposes of enforcement, monitoring, inspection, and the assessment of annual fees, consistent with Public Resources Code Section 25531, subdivision (c). <u>The project owner shall develop, obtain both BLM's Authorized Officer and CPM approval of, and implement a construction Storm Water Pollution Prevention Plan (SWPPP) for the construction of the project and an Industrial SWPPP for operation of the project.</u></p>	<p>At least sixty (60) days prior to commercial operation, the project owner shall submit to both BLM's Authorized Officer and the CPM a copy of the Industrial SWPPP for operation of the project for review and approval prior to commercial operation. The project owner shall retain a copy on site. <i>The project owner shall submit copies to both BLM's Authorized Officer and the CPM of all correspondence between the project owner and the Lahontan RWQCB regarding the WDRs for discharge of storm water associated with construction and industrial activity within ten (10) days of its receipt or submittal.</i></p>	<p>ONGOING DURING OPERATIONS</p>	<p>60 days Prior to Commercial Operations</p>	<p>8/27/2013; 6/30/2014; 6/30/2015; 1/29/2016</p>			<p>Industrial SWPPP for Operations submitted to CEC/BLM on 8/27/13</p> <p>SWPPP Annual Reports submitted to SWRCB - 6/30/2014; 6/30/2015;</p> <p>Submitted in the Annual Compliance Report</p>

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Soil & Water	S&W-3	<p>Pre-Well Installation. The project owner shall construct and operate up to two onsite groundwater wells that produce water from the IVGB. The project owner shall ensure that the wells are completed in accordance with all applicable state and local water well construction permits and requirements, including the San Bernardino County's Desert Groundwater Management Ordinance. Prior to initiation of well construction activities, the project owner shall submit for review and comment a well construction packet to the County of San Bernardino, in accordance with the County of San Bernardino Code Title 2, Division 3, Chapter 6, Article 5, containing the documentation, plans, and fees normally required for the county's well permit, with copies to both BLM's Authorized Officer and the CPM. The project shall not construct a well or extract and use groundwater until both BLM's Authorized Officer and the CPM provides approval to construct and operate the well.</p> <p>Post-Well Installation. The project owner shall provide documentation to both BLM's Authorized Officer and the CPM that the well has been properly completed. In accordance with California's Water Code section 13754, the driller of the well shall submit to the DWR a <u>Well Completion Report</u> for each well installed.</p> <p>No later than 180 days prior to the construction of the onsite groundwater wells, the project owner shall submit a <u>Groundwater Monitoring and Management Plan</u> to the County of San Bernardino for review and comment (see Condition of Certification Soil & Water - 6)</p>	<p>The project owner shall ensure the Well Completion Reports are submitted and shall ensure compliance with all county water well standards and requirements for the life of the wells. The project owner shall do all of the following:</p> <ol style="list-style-type: none"> 1. No later than 180 days prior to the construction of the onsite groundwater wells, the project owner shall submit a <u>Groundwater Monitoring and Management Plan</u> to the County of San Bernardino for review and comment (see Condition of Certification Soil & Water - 6) 2. No later than sixty (60) days prior to the construction of the onsite groundwater wells, the project owner shall submit to both BLM's Authorized Officer and the CPM a copy of the water well construction packet submitted to the County of San Bernardino for review and comment. 3. No later than thirty (30) days prior to the construction of the onsite groundwater supply wells, the project owner shall submit a copy of any written comments received from the County of San Bernardino indicating whether the proposed well construction activities comply with all county well requirements and meet the requirements established by the county's water well permit program. 4. No later than sixty (60) days after installation of each well at the project site, the project owner shall provide to both BLM's Authorized Officer and the CPM copies of the Well Completion Reports submitted to the DWR by the well driller. The project owner shall submit to the CPM with the Well Completion Report a copy of well drilling logs, water quality analyses, and any inspection reports. 5. During well construction and for the operational life of the well, the project owner shall submit two (2) copies each to BLM's Authorized Officer and the CPM for review and approval any proposed well construction or operation changes. 6. The project owner shall provide BLM's authorized officer and the CPM with (2) two copies each of all monitoring and other reports required for compliance with the County of San Bernardino water well standards and operation requirements. 7. No later than fifteen (15) days after completion of the onsite water supply wells, the project owner shall submit documentation to BLM's Authorized Officer and the CPM, confirming that well drilling activities were conducted in compliance with Title 23, California Code of Regulations, Chapter 15, Discharges of Hazardous Wastes to Land, (23 CCR, sections 2510 et seq.) requirements and that any onsite drilling sumps used for project drilling activities were removed in compliance with 23 CCR section 2511(c). 8. Annual Monitoring Reports will be submitted which include Quarterly monitoring data as described in the Approved Groundwater Monitoring and Management Plan. The First Annual Report will be a Baseline Report which includes the Well Network and level monitoring report and plan 	<p>GWMMP Approved 11/03/10; Well Completion Reports Filed for PW-1 PW-2 MW-1(3/03/11) . Baseline First Annual Monitoring Report submitted on August 10, 2012</p> <p>ANNUAL MONITORING REPORT ONGOING</p>	<p>9/23/2010(GWMMP); Baseline Report 8/1/12, 2nd Annual report 1/31/13</p> <p>ANNUALLY</p>	<p>11/2/2010 Addendum to GWMMP submitted to San Bernardino Co and CEC; First Annual Report(Baseline) submitted on 8/10/12, 2nd annual Report to be submitted January 31, 2013 for 2012 data</p>	<p>GWMMP 11/3/2010</p>		<p>GWMMP Approved 11/03/10; Well Completion Reports Filed for PW-1 PW-2 MW-1(3/03/11) , Baseline First Annual Monitoring Report submitted on August 10, 2012.</p> <p>9/23/2010(GWMMP); Baseline Report 8/1/12, 2nd Annual report 1/31/13</p>
Soil & Water	S&W-4	<p>The proposed project's use of groundwater during each year of construction shall not exceed an average of 200 acre-feet per year over the forty-three (43) month construction period. Groundwater use for operations activities shall not exceed 100 acre-feet per year. Prior to the use of groundwater for construction, the project owner shall install and maintain metering devices as part of the water supply and distribution system to document project water use and to monitor and record in gallons per day the total volume(s) of water supplied to the project from this water source. The metering devices shall be operational for the life of the project.</p>	<p>Beginning six (6) months after the start of construction, the project owner shall prepare a semi-annual summary of amount of water used for construction purposes. The summary shall include the monthly range and monthly average of daily water usage in gallons per day. At least sixty (60) days prior to the start of construction of the proposed project, the project owner shall submit to both BLM's Authorized Officer and the CPM a copy of evidence that metering devices have been installed and are operational. The project owner shall prepare an annual summary, which will include daily usage, monthly range and monthly average of daily water usage in gallons per day, and total water used on a monthly and annual basis in acre-feet. For years subsequent to the initial year of operation, the annual summary will also include the yearly range and yearly average water use by source. For calculating the total water use, the term "year" will correspond to the date established for the annual compliance report submittal.</p>	<p>Semi-annual reporting in MCR Completed.</p> <p>ONGOING ANNUAL REPORTING</p>	<p>2011, 2012, 2013..</p> <p>Operations annual report due on January 31st ANNUALLY</p>	<p>Semi Annual Water Usage Calcs filed on 5/9/2011; 10/7/2011; 4/20/2012, 10/20/12</p> <p>1/30/2015</p>			<p>2014 Annual Compliance Report was submitted on 1/31/2015</p>

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Soil & Water	S&W-5 (Continued-1b)	The project owner shall ensure that the heliostats are designed and installed to withstand storm water scour as a result of a 100-year storm event. The analysis of the storm event and resulting heliostat stability will be provided within a Pylon Insertion Depth and Heliostat Stability Report to be completed by the applicant. This analysis will incorporate results from site-specific geotechnical stability testing, as well as hydrologic and hydraulic stormwater modeling performed by the applicant. The modeling will be completed using methodology and assumptions approved by the CPM and BLM's Authorized Officer.	<p>The Storm Water Damage Monitoring and Response Plan shall be submitted to both the BLM's authorized office and CPM for review and approval and shall include the following:</p> <ul style="list-style-type: none"> Detailed maps showing the installed location of all heliostats within each project phase; Description of the method of removing all soil spoils should any be generated; Each heliostat should be identified by a unique ID number marked to show initial ground surface at its base, and the depth of the pylon below ground; Minimum Depth Stability Threshold to be maintained of pylons to meet long-term stability for applicable wind, water and debris loading effects; Above and below ground construction details of a typical installed heliostat; BMPs to be employed to minimize the potential impact of broken mirrors to soil resources; Methods and response time of mirror cleanup and measures that may be used to mitigate further impact to soil resources from broken mirror fragments; and Monitoring, documenting, and restoring the Ivanpah plays surface when impacted by sedimentation or broken mirror shards. <p>A plan to monitor and inspect periodically, before first seasonal and after every storm event:</p> <ul style="list-style-type: none"> Security and Tortoise Exclusion Fence: Inspect for damage and buildup of sediment or debris Heliostats within Drainages or subject to drainage overflow: Inspect for tilting, mirror damage, depth of scour compared to pylon depth below ground and the Minimum Depth Stability Threshold, collapse, and downstream transport. Drainage Channels: Inspect for substantial migration or changes in depth, and transport of broken glass. Constructed Diversion Channels: Inspect for scour and structural integrity issues caused by erosion, and for sediment and debris buildup. Ivanpah Playa Surface: Inspect for changes in the surface texture and quality from sediment buildup, erosion, or broken glass. <p>Short-Term Incident-Based Response:</p> <ul style="list-style-type: none"> Security and Tortoise Exclusion Fence: repair damage, and remove built-up of sediment and debris. Heliostats: Remove broken glass, damaged structure, and wiring from the ground, and for pylons no longer meeting the Minimum Depth Stability Threshold, either replace/reinforce or remove the mirrors to avoid exposure for broken glass. 	Submitted ONGOING REPORTING DURING OPERATIONS	60 days Prior to Commercial Operations ANNUALLY	8/27/2013; 1/30/2015; 1/29/2016			Storm Water Damage Monitoring & Response Plan for Operations submitted to CEC/BLM on 8/27/13" 2014 Annual Compliance Report was submitted on 1/30/2015
Soil & Water	S&W-5 (Continued-1c)	The project owner shall ensure that the heliostats are designed and installed to withstand storm water scour as a result of a 100-year storm event. The analysis of the storm event and resulting heliostat stability will be provided within a Pylon Insertion Depth and Heliostat Stability Report to be completed by the applicant. This analysis will incorporate results from site-specific geotechnical stability testing, as well as hydrologic and hydraulic stormwater modeling performed by the applicant. The modeling will be completed using methodology and assumptions approved by the CPM and BLM's Authorized Officer.	<p>The Storm Water Damage Monitoring and Response Plan shall be submitted to both the BLM's authorized office and CPM for review and approval and shall include the following:</p> <ul style="list-style-type: none"> Detailed maps showing the installed location of all heliostats within each project phase; Description of the method of removing all soil spoils should any be generated; Each heliostat should be identified by a unique ID number marked to show initial ground surface at its base, and the depth of the pylon below ground; Minimum Depth Stability Threshold to be maintained of pylons to meet long-term stability for applicable wind, water and debris loading effects; Above and below ground construction details of a typical installed heliostat; BMPs to be employed to minimize the potential impact of broken mirrors to soil resources; Methods and response time of mirror cleanup and measures that may be used to mitigate further impact to soil resources from broken mirror fragments; and Monitoring, documenting, and restoring the Ivanpah plays surface when impacted by sedimentation or broken mirror shards. <p>A plan to monitor and inspect periodically, before first seasonal and after every storm event:</p> <ul style="list-style-type: none"> Security and Tortoise Exclusion Fence: Inspect for damage and buildup of sediment or debris Heliostats within Drainages or subject to drainage overflow: Inspect for tilting, mirror damage, depth of scour compared to pylon depth below ground and the Minimum Depth Stability Threshold, collapse, and downstream transport. Drainage Channels: Inspect for substantial migration or changes in depth, and transport of broken glass. Constructed Diversion Channels: Inspect for scour and structural integrity issues caused by erosion, and for sediment and debris buildup. Ivanpah Playa Surface: Inspect for changes in the surface texture and quality from sediment buildup, erosion, or broken glass. <p>Short-Term Incident-Based Response:</p> <ul style="list-style-type: none"> Security and Tortoise Exclusion Fence: repair damage, and remove built-up of sediment and debris. Heliostats: Remove broken glass, damaged structure, and wiring from the ground, and for pylons no longer meeting the Minimum Depth Stability Threshold, either replace/reinforce or remove the mirrors to avoid exposure for broken glass. 	Submitted ONGOING REPORTING DURING OPERATIONS	60 days Prior to Commercial Operations ANNUALLY	8/27/2013; 1/30/2015; 1/29/2016			Storm Water Damage Monitoring & Response Plan for Operations submitted to CEC/BLM on 8/27/13"
Soil & Water	S&W-5 (Continued-1d)	The project owner shall ensure that the heliostats are designed and installed to withstand storm water scour as a result of a 100-year storm event. The analysis of the storm event and resulting heliostat stability will be provided within a Pylon Insertion Depth and Heliostat Stability Report to be completed by the applicant. This analysis will incorporate results from site-specific geotechnical stability testing, as well as hydrologic and hydraulic stormwater modeling performed by the applicant. The modeling will be completed using methodology and assumptions approved by the CPM and BLM's Authorized Officer.	<ul style="list-style-type: none"> Monitoring, documenting, and restoring the Ivanpah plays surface when impacted by sedimentation or broken mirror shards. A plan to monitor and inspect periodically, before first seasonal and after every storm event: Security and Tortoise Exclusion Fence: Inspect for damage and buildup of sediment or debris Heliostats within Drainages or subject to drainage overflow: Inspect for tilting, mirror damage, depth of scour compared to pylon depth below ground and the Minimum Depth Stability Threshold, collapse, and downstream transport. Drainage Channels: Inspect for substantial migration or changes in depth, and transport of broken glass. Constructed Diversion Channels: Inspect for scour and structural integrity issues caused by erosion, and for sediment and debris buildup. Ivanpah Playa Surface: Inspect for changes in the surface texture and quality from sediment buildup, erosion, or broken glass. <p>Short-Term Incident-Based Response:</p> <ul style="list-style-type: none"> Security and Tortoise Exclusion Fence: repair damage, and remove built-up of sediment and debris. Heliostats: Remove broken glass, damaged structure, and wiring from the ground, and for pylons no longer meeting the Minimum Depth Stability Threshold, either replace/reinforce or remove the mirrors to avoid exposure for broken glass. 	Submitted ONGOING REPORTING DURING OPERATIONS	60 days Prior to Commercial Operations ANNUALLY	8/27/2013; 1/30/2015; 1/29/2016			Storm Water Damage Monitoring & Response Plan for Operations submitted to CEC/BLM on 8/27/13" 2014 Annual Compliance Report was submitted on 1/30/2015

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Soil & Water	S&W-5 (Continued-2)	The project owner shall ensure that the heliostats are designed and installed to withstand storm water scour as a result of a 100-year storm event. The analysis of the storm event and resulting heliostat stability will be provided within a Pylon Insertion Depth and Heliostat Stability Report to be completed by the applicant. This analysis will incorporate results from site-specific geotechnical stability testing, as well as hydrologic and hydraulic stormwater modeling performed by the applicant. The modeling will be completed using methodology and assumptions approved by the CPM and BLM's Authorized Officer.	At least sixty (60) days prior to construction, the project owner shall submit to both BLM's Authorized Officer and the CPM a copy of the Pylon Insertion Depth and Heliostat Stability Report for review and approval prior to construction. At least sixty (60) days prior to commercial operation, the project owner shall submit to both BLM's Authorized Officer and the CPM a copy of the Storm Water Damage Monitoring and Response Plan for review and approval prior to commercial operation. The project owner shall retain a copy of this plan onsite at the power plant at all times. <i>The project owner shall prepare an annual summary of the number of heliostats failed, cause of the failure, and cleanup and mitigation performed for each failed heliostat.</i>	Submitted ONGOING REPORTING DURING OPERATIONS	60 days Prior to Commercial Operations ANNUALLY	8/27/2013; 1/30/2015; 1/29/2016			Storm Water Damage Monitoring & Response Plan for Operations submitted to CEC/BLM on 8/27/13" 2014 Annual Compliance Report was submitted on 1/30/2015
Soil & Water	S&W-6 (continued-2)	The project owner shall submit a <u>Groundwater Monitoring and Reporting Plan</u> to both BLM's Authorized Officer and the CPM for review and approval and to San Bernardino County for review and comment regarding consistency with the County of San Bernardino Code Title 2, Division 3, Chapter 6, Article 5 (Desert Groundwater Management Ordinance). The Groundwater Level Monitoring and Reporting Plan shall provide a description of the methodology for monitoring background and site groundwater levels. Monitoring shall include pre-construction, construction, and project operation water use. The primary objective for the monitoring is to establish pre-construction and project related groundwater level that can be quantitatively compared against observed and simulated levels near the project pumping well and near potentially impacted existing wells. Prior to construction, monitoring shall commence to establish preconstruction base-line conditions and shall incorporate the existing monitoring and reporting data collected for the Pimm Valley Golf Club. The monitoring network shall be designed to incorporate the ongoing monitoring and reporting program established for the Pimm Valley Golf Course. The monitoring plan and network may make use of existing wells in the basin that would satisfy the requirements for the monitoring program.	4. At least two (2) months prior to project construction, all water level monitoring data shall be provided to both BLM's Authorized Officer and the CPM. The data transmittal shall include an assessment of pre-project water level trends, a summary of available climatic information (monthly average temperature and rainfall records from the nearest weather station), and a comparison and assessment of water level data relative to the assumptions and spatial levels simulated by the applicant's groundwater model. 5. <u>After project construction and during project operations, the project owner shall submit the monitoring data annually to both BLM's Authorized Office and the CPM. The summary shall document water level monitoring methods, the water level data, water level plots, and a comparison between pre- and post-project start-up waterlevel trends. The report shall also include a summary of actual water use conditions, monthly climatic information (temperature and rainfall), and a comparison and assessment of water level data relative to the assumptions and spatial levels simulated by the applicant's groundwater model.</u>	ONGOING	ANNUALLY DURING PROJECT OPERATIONS	11/17/2014; 2014 GWMR was submitted on 8/13/2015			8/18/2010(GWMP); First Annual Baseline Report incl Well Monitoring, Installation & GW Level Network Report Submitted 8/10/12 ANNUAL REPORT FOR 2012 was submitted on 5/11/2013; ANNUAL REPORT FOR 2013 was submitted on 11/17/2014;
Soil & Water	S&W-7	The project owner shall recycle and reuse all process wastewater streams to the extent practicable. Prior to transport and disposal of any facility operation wastewaters that are not suitable for treatment and reuse onsite, the project owner shall test and classify the stored wastewater to determine proper management and disposal requirements. The project manager shall ensure that the wastewater is transported and disposed of in accordance with the wastewater's characteristics and classification and all applicable LORS (including any CCR Title 22 Hazardous Waste and Title 23 Waste Discharges to Land requirements).	Prior to transport and disposal of any facility operation wastewaters that are not suitable for treatment and reuse onsite, the project owner shall test and classify the stored wastewater to determine proper management and disposal requirements. The project manager shall ensure that the wastewater is transported and disposed of in accordance with the wastewater's characteristics and classification and all applicable LORS (including any CCR Title 22 Hazardous Waste and Title 23 Waste Discharges to Land requirements).	ONGOING	prior to transport and disposal of any facility operation wastewater				
Soil & Water	S&W-8	Prior to the start of construction of the sanitary waste system, the project owner shall submit to the County of San Bernardino for review and comment, and to both the BLM's authorized officer and CPM for review and approval, plans for the construction and operation of the project's proposed sanitary waste septic system and leach field. These plans shall comply with the requirements set forth in County of San Bernardino codes and Appendices B, C, and D. Project construction shall not proceed until both BLM's Authorized Officer and the CPM have approved the plans. The project owner shall remain in compliance with the San Bernardino County code requirements for the life of the project.	Sixty (60) days prior to the start of commercial operations, the project owner shall submit to the County of San Bernardino appropriate fees and plans for review and comment for the construction and operation of the project's sanitary waste septic system and leach field. A copy of these plans shall be submitted to both the BLM's authorized officer and CPM for review and approval. The plans shall demonstrate compliance with the sanitary waste disposal facility requirements of County of San Bernardino and Appendices B, C, and D.	Submitted	60 days prior to start of commercial operations	25-Mar-2013			Sanitary Waste System Plan Submitted on 3/25/13
Traffic & Transport.	TRANS-2 (continued)	The project owner shall restore all public roads, easements, and rights-of-way that have been damaged due to project-related construction activities to original or near-original condition in a timely manner, as directed by the BLM's Authorized Officer and CPM. The project owner's use of Yates Well Road shall not diminish the rights or use of the road by other BLM authorized users. Repairs and restoration of access roads may be required at any time during the construction phase of the project to assure safe ingress and egress. Prior to the start of site mobilization, the project owner shall consult with the County of San Bernardino and Caltrans District 8 and notify them of the proposed schedule for project construction. The purpose of this notification is to request that the County of San Bernardino and Caltrans consider postponement of public right-of-way repair or improvement activities in areas affected by project construction until construction is completed and to coordinate with the project owner regarding any concurrent construction related activities that are planned or in progress and cannot be postponed.	<u>Within 60 calendar days after completion of construction, the project owner shall meet with BLM's Authorized Officer and the CPM, the County of San Bernardino and Caltrans District 8 to identify sections of public right-of-way to be repaired. At that time, the project owner shall establish a schedule to complete the repairs and to receive approval for the action(s). Following completion of any public right-of-way repairs, the project owner shall provide a letter signed by the County of San Bernardino and Caltrans District 8 stating their satisfaction with the repairs to BLM's Authorized Officer and the CPM.</u>	Approved; ONGOING	10-Aug-2010	24-Jun-2010	2-Sep-2010		7/31/2014: Solar Partners/NRG is coordinating with appropriate agencies to complete the ROW inspections for repairs.

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Traffic & Transport.	TRANS-3 (continued)	The project owner shall prepare a Heliostat Positioning Plan that would avoid potential for human health and safety hazards from solar radiation exposure.	<p>2. Describe within the HPP how programmed heliostat operation would avoid potential for human health and safety hazards at locations of observers as attributable to momentary solar radiation exposure greater than the Maximum Permissible Exposure of 10 kw/m² (for a period of 0.25 second or less).</p> <p>3. Prepare a monitoring plan that would: a) obtain field measurements in response to legitimate complaints; b) verify that the Heliostat Positioning Plan would avoid potential for human health and safety hazards including temporary and permanent blindness at locations of observers; and c) provide requirements and procedures to document, investigate and resolve legitimate complaints regarding glare.</p> <p>4. The monitoring plan should be coordinated with the FAA, U.S. Department of the Navy, CalTrans, CHP, and Clark County Department of Aviation in relation to the proposed Southern Nevada Supplemental Airport and be updated on an annual basis for the first 5 years, and at 2-year intervals thereafter for the life of the project.</p>	Approved - ONGOING	ANNUALLY FOR THE FIRST 5 YEARS	<p>Heliostat Positioning Plan was submitted on 1/14/2013. Revision 1 was submitted on 4/19/2013. Approved by BLM on 6/13/13. Revision 1 was resubmitted on 9/13/13. Approved by CEC on 12/10/13</p> <p>Submitted HPP RReport 2nd Flyover on 8/29/2014</p> <p>HPP Addendum/Update was submitted on 12/10/2014;</p> <p>HPP addendum/updae submitted on 12/10/2015</p>	6/13/2013 12/10/13		<p>Heliostat Positioning Plan Addendum / Update was submitted to BLM and CEC on 12/10/2014;</p> <p>Also submitted in the Annual Compliance Reports</p>
Traffic & Transport.	TRANS-4	The project owner shall prepare a Power Tower Lumiance Monitoring Plan to provide procedures to conduct periodic monitoring and to document, investigate and resolve complaints regarding distraction effects to aviation, vehicular and pedestrian traffic associated with the power towers.	<p>Within 60 days prior to commercial operation of the first ISEGS power plant to become operational, the project owner shall provide a Power Tower Lumiance Monitoring Plan applicable for the ISEGS Project for review and approval by BLM's Authorized Officer and the CPM. The plan shall specify procedures to document, investigate and resolve complaints regarding glare, and report these to BLM's Authorized Officer and the CPM within 10 days of receiving a complaint.</p> <p>The project owner shall evaluate the effects of the intensity of the lumiance of light reflected from the power tower receivers for the following scenarios:</p> <p>A. Within 90 days following commercial operation;</p> <p>B. After the initial 5 years of operation;</p> <p>C. If a major design change is implemented that results in an increase of the reflective lumiance of the power towers for each of the three ISEGS power plants (Ivanpah 1, 2 and 3); and</p> <p>D. After receiving a legitimate complaint regarding a distraction associated with the power towers.</p>	Submitted and Approved - ONGOING DURING PROJECT OPERATIONS	<p>60 days Prior Commercial Operations.</p> <p>90 days Following Commercial Operations.</p> <p>After the Initial 5 years of Operation</p>	<p>4/18/13: Power Tower Lumiance Monitoring Plan Submitted on 4/5/2013. Approved by BLM on 6/13/13. Revision 1 was resubmitted on 9/13/13. Approved by CEC on 12/10/13</p>	6/13/2013 12/10/13		
Traffic & Transport.	TRANS-4 (continued-1)	The project owner shall prepare a Power Tower Lumiance Monitoring Plan to provide procedures to conduct periodic monitoring and to document, investigate and resolve complaints regarding distraction effects to aviation, vehicular and pedestrian traffic associated with the power towers.	<p>The Power Tower Lumiance Monitoring Plan shall include provisions for the following:</p> <p>1. Coordination of lumiance evaluations with the FAA, U.S. Department of the Navy, CalTrans, CHP, and with Clark County Department of Aviation in relation to the proposed Southern Nevada Supplemental Airport;</p> <p>2. Reporting within 30 days after completing lumiance measurements required under this plan; the project owner shall submit a summary report to FAA, U.S. Department of the Navy, CalTrans, San Bernardino County, SANBAG, CHP and Clark County Department of Aviation for review and comment, and to BLM's Authorized Officer and the CPM for review and approval.</p> <p>3. Measurement of lumiance at the locations where any distraction effects have been reported and at the locations nearest the power towers from the four sides of the power plant boundaries, and the nearest public road, which may be substituted for one of the sides of the power tower of each of the three power plants during the time of day when values would be highest;</p> <p>4. Measurement of lumiance using an illuminance meter, photometer, or similar device and reporting of data in photometric units; the measurements are intended to provide a relative and quantifiable measure of lumiance that can be associated with any observed and reported distraction effect from the power tower receivers that may support anticipation and investigation of any future effects.</p>	Approved - COMPLETED ONGOING DURING PROJECT OPERATIONS	<p>60 days Prior Commercial Operations.</p> <p>90 days Following Commercial Operations.</p> <p>After the Initial 5 years of Operation</p>	<p>4/18/13: Power Tower Lumiance Monitoring Plan Submitted on 4/5/2013. Approved by BLM on 6/13/13. Revision 1 was resubmitted on 9/13/13. Approved by CEC on 12/10/13</p>	6/13/2013 12/10/13		

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Traffic & Transport.	TRANS-4 (continued-2)	The project owner shall prepare a Power Tower Luminance Monitoring Plan to provide procedures to conduct periodic monitoring and to document, investigate and resolve complaints regarding distraction effects to aviation, vehicular and pedestrian traffic associated with the power towers.	5. Provisions for identifying and implementing appropriate mitigation measures if reported distraction is determined to be legitimate and if power tower luminance is determined to be causing a safety concern; The project owner shall consider and propose any reasonable mitigation measures that are technically and financially feasible. The mitigation measures may include surface treatment or material changes to increase absorption and reduce reflectivity of the power tower receivers, road signage, screening or other reasonable measures. 6. Post-mitigation verification; Within 30 days following the implementation of mitigation measures designed to reduce reflectivity of the power towers, the project owner shall repeat the luminance measurements to demonstrate the effectiveness of mitigation measures and prepare a supplemental survey report for review and comment by FAA, U.S. Department of the Navy, CalTrans, San Bernardino County, SANBAG, CHP and Clark County Department of Aviation, and for review and approval by BLM's Authorized Officer and the CPM.	Approved - COMPLETED	Post Mitigation Verification - within 30 days following implementation of Mitigation Measures	4/18/13: Power Tower Luminance Monitoring Plan Submitted on 4/5/2013. Approved by BLM on 6/13/13. Revision 1 was resubmitted on 9/13/13. Approved by CEC on 12/10/13	6/13/2013 12/10/13		
Transmission System Engineering	TSE-7	The project owner shall be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent BLM authorized officer, CPM and CBO approved changes thereto, to ensure conformance with CPUC GO-95 or NESC; Title 8, CCR, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders"; applicable interconnection standards; NEC; and related industry standards. In case of non-conformance, the project owner shall inform BLM's Authorized Officer, the CPM and CBO in writing, within 10 days of discovering such non-conformance and describe the corrective actions to be taken.	Within 60 days after first synchronization of the project, the project owner shall transmit to BLM's Authorized Officer, the CPM and CBO: 1. "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC GO-95 or NESC; Title 8, California Code of Regulations, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders"; applicable interconnection standards; NEC; and related industry standards, and these conditions shall be provided concurrently. 2. An "as built" engineering description of the mechanical, structural, and civil portion of the transmission facilities signed and sealed by the registered engineer in responsible charge or acceptable alternative verification. "As built" drawings of the electrical, mechanical, structural, and civil portion of the transmission facilities shall be maintained at the power plant and made available, if requested, for BLM's Authorized Officer or CPM audit as set forth in the "Compliance Monitoring Plan." 3. A summary of inspections of the completed transmission facilities, and identification of any nonconforming work and corrective actions taken, signed and sealed by the registered engineer in charge	COMPLETED (CONSTRUCTION)	60 days After First Synchronization	19-Nov-2013			Submitted As-Built engineering description of the electrical, mechanical, structural and civil portion of the transmission facilities
Transm. Lines	TLSN-2	The project owner shall use a qualified individual to measure the strengths of the electric and magnetic fields from the line at the points of maximum intensity along the route for which the applicant provided specific estimates. The measurements shall be made before and after energization according to the American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) standard procedures. These measurements shall be completed no later than 6 months after the start of operations.	The project owner shall file copies of the pre-and post-energization measurements with BLM's Authorized Officer and the CPM within 60 days after completion of the measurements.	Submitted	60 days after Completion of Measurements	31-Jul-2014			Pre and Post Energization Measurement Report was submitted on 7/31/2014.
Transm. Lines	TLSN-3	The project owner shall ensure that the rights-of-way of the proposed generation tie lines are kept free of combustible material, as required under the provisions of section 4292 of the Public Resources Code and section 1250 of Title 14 of the California Code of Regulations.	During the first 5 years of plant operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the right-of-way and provide such summaries in the Annual Compliance Report to be provided to BLM's Authorized Officer and the CPM.	Ongoing - Annually	First 5 years of Plant Operation	1/30/2015; 1/29/2016			Submitted with the Annual Compliance Report

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Visual Resources	VIS-1	<p><u>Surface Treatment of Project Structures and Buildings:</u> The project owner shall treat the surfaces of all project structures and buildings visible to the public, other than surfaces that are included to direct or reflect sunlight, such that a) their colors minimize visual intrusion and contrast by blending with the existing tan and brown color of the surrounding landscape; and b) their colors and finishes do not create excessive glare. The transmission line conductors shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive. The project owner shall submit for CPM review and approval, a specific Surface Treatment Plan that will satisfy these requirements.</p>	<p>At least 90 days prior to specifying to the vendor the colors and finishes for each set of structures or buildings that are surface treated during manufacture, the project owner shall submit the proposed treatment plan to BLM's Authorized Officer and the CPM for review and approval and simultaneously to San Bernardino County for review and comment. If BLM's Authorized Officer and the CPM determine that the plan requires revision, the project owner shall provide to BLM's Authorized Officer and the CPM a plan with the specified revision(s) for review and approval by BLM's Authorized Officer and the CPM before any treatment is applied. Any modifications to the treatment plan must be submitted to BLM's Authorized Officer and the CPM for review and approval. BLM's Authorized Officer and the CPM shall review and approve the Surface Treatment Plan or identify any material deficiencies within thirty (30) days of receipt. The treatment plan shall include: A. A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes; B. A list of each major project structure, building, tank, pipe, and wall; the transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and number; or according to a universal designation system; C. One set of color brochures or color chips showing each proposed color and finish; D. A specific schedule for completion of the treatment; and E. A procedure to ensure proper treatment maintenance for the life of the project. The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated in the field, until the project owner receives notification of approval of the treatment plan by BLM's Authorized Officer and the CPM. Subsequent modifications to the treatment plan are prohibited without BLM's Authorized Officer and CPM approval. Prior to the start of commercial operation, the project owner shall notify BLM's Authorized Officer and the CPM that surface treatment of all listed structures and buildings has been completed and they are ready for inspection and shall submit to each one set of electronic color photographs from the same key observation points identified in (d) above. The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify: a) the condition of the surfaces of all structures and buildings at the end of the reporting year; b) maintenance activities that occurred during the reporting year; and c) the schedule of maintenance activities for the next year.</p>	Approved During Construction. ONGOING ANNUAL REPORTING DURING OPERATIONS	90 days Prior Specifying to the Vendor the Colors and Finishes. ANNUAL REPORTING REQUIRED DURING PROJECT OPERATIONS	6/30/2010; 11/4/2010 (amend. 1 & 2); 12/8/2010 (amend. 3 & 4); 4/5/2011 (amend. 5 & 6); Plan Revision 1 May 27, 2011; Revision 1.2 submitted June 27, 2011; Revision 1.3 submitted September 7, 2011; 1/30/2015; 1/29/2016	10/7/2010; 11/23/2010 (amend. 1 & 2); 1/10/2011 (amend. 3 & 4); 4/15/2011 (amend. 5); 5/2/2011 (amend. 6)		Submitted in the Annual Compliance Reports

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Visual Resources	VIS-2	<p><u>Landscape Screening of Golf Course:</u> At the request of, and in consultation with BLM's Authorized Officer, the CPM and the golf course owner, the project owner shall prepare a perimeter landscape screening plan to reduce the visibility of the proposed ISEGS project as seen from the golf course. The purpose of the plan shall be to provide screening of the power project, particularly the mirror fields, while retaining as much of the scenic portion of the overall views of Ivanpah Valley and Clark Mountains as feasible. The design approach shall be developed with prior consultation with the golf course owner, and implemented only at the golf course owner's request.</p> <p>The project owner shall submit to BLM's Authorized Officer and the CPM for review and approval and simultaneously to the golf course owner for review and comment a preliminary conceptual landscaping plan whose objective is to provide an attractive visual screen to views of the ISEGS project mirror fields. Upon approval by BLM's Authorized Officer and the CPM and golf course owner, the project owner shall submit to BLM's Authorized Officer and the CPM for review and approval and simultaneously to the golf course owner for review and comment a landscaping plan whose proper implementation will satisfy these requirements.</p> <p>The plan shall not be implemented until the project owner receives final approval from BLM's Authorized Officer and the CPM.</p>	<p>The landscaping plan shall be submitted to BLM's Authorized Officer and the CPM for review and approval and simultaneously to the golf course owner for review and comment at least 90 days prior to installation of the landscaping. If BLM's Authorized Officer and the CPM determine that the plan requires revision, the project owner shall provide to BLM's Authorized Officer and the CPM and simultaneously to the golf course owner a revised plan for review and approval by BLM's Authorized Officer and the CPM. The plan shall include:</p> <p>A. A detailed landscape, grading, and irrigation plan, at a reasonable scale. The plan shall demonstrate how the requirements stated above shall be met. The plan shall provide a detailed installation schedule demonstrating installation of as much of the landscaping as early in the construction process as is feasible in coordination with project construction.</p> <p>B. A list (prepared by a qualified professional arborist familiar with local growing conditions) of proposed species, specifying installation sizes, growth rates, expected time to maturity, expected size at five years and at maturity, spacing, number, availability, and a discussion of the suitability of the plants for the site conditions and mitigation objectives, with the objective of providing the widest possible range of species from which to choose;</p> <p>C. Maintenance procedures, including any needed irrigation and a plan for routine annual or semi-annual debris removal for the life of the project;</p> <p>D. A procedure for monitoring for and replacement of unsuccessful plantings for the life of the project; and</p> <p>E. One set each for BLM's Authorized Officer and the CPM of 11"x17" color photo simulations of the proposed landscaping at five years and twenty years after planting, as viewed from adjoining segments of I-15 .</p> <p>The plan shall not be implemented until the project owner receives final approval from BLM's Authorized Officer and the CPM.</p> <p>The planting must occur during the first optimal planting season following site mobilization. The project owner shall simultaneously notify BLM's Authorized Officer and the CPM and the golf course owner within seven days after completing installation of the landscaping, that the landscaping is ready for inspection.</p> <p>The project owner shall report landscape maintenance activities, including replacement of dead or dying vegetation, for the previous year of operation in each Annual Compliance Report.</p>	COMPLETED LANDSCAPING WORKS. MAINTENANCE WORKS IN PROGRESS	ANNUALLY (To be included in the Annual Compliance Report)	1/30/2015; 1/29/2016			Landscaping along the Golf Course was completed. Landscape maintenance monitoring in progress and shall be reported in the Annual Compliance Report.
Visual Resources	VIS-4 (Continued-1)	<p><u>Temporary and Permanent Exterior Lighting:</u> To the extent feasible, consistent with safety and security considerations, the project owner shall design and install all permanent exterior lighting and all temporary construction lighting such that a) lamps and reflectors are not visible from beyond the project site, including any off-site security buffer areas; b) lighting does not cause excessive reflected glare; c) direct lighting does not illuminate the nighttime sky, except for required FAA aircraft safety lighting; d) illumination of the project and its immediate vicinity is minimized, and e) the plan complies with local policies and ordinances.</p> <p>The project owner shall submit to BLM's Authorized Officer and the CPM for review and approval and simultaneously to the County of San Bernardino for review and comment a lighting mitigation plan.</p>	<p>E. All lighting shall be of minimum necessary brightness consistent with operational safety and security; and</p> <p>F. Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied.</p> <p>The project owner shall not order any exterior lighting until receiving BLM Authorized Officer and CPM approval of the lighting mitigation plan.</p> <p>Prior to commercial operation, the project owner shall notify BLM's Authorized Officer and the CPM that the lighting has been completed and is ready for inspection. <i>If after inspection, BLM's Authorized Officer and the CPM notify the project owner that modifications to the lighting are needed, within 30 days of receiving that notification the project owner shall implement the modifications and notify BLM's Authorized Officer and the CPM that the modifications have been completed and are ready for inspection.</i></p>	Approved - COMPLETED (CONSTRUCTION) AS NEEDED DURING OPERATIONS	Within 30 days of Receiving Notification from BLM & CEC	11/1/2010; 12/14/2010 (amend. 1)	Amend 1 approved by BLM and CEC on 1/11/2012		Lighting Plan Addendum 1 submitted 11/02/12
Waste Mgmt	WASTE-5	Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify BLM's Authorized Officer and the CPM of any such action taken or proposed to be taken against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.	The project owner shall notify BLM's Authorized Officer and the CPM in writing within 10 days of becoming aware of an impending enforcement action. BLM's Authorized Officer and the CPM shall notify the project owner of any changes that will be required in the way project-related wastes are managed.	As needed	As needed				

Technical Area	COC No.	Description	Verification	Compliance Status	Required Submittal Date	Date Submitted	Approval Date	Date of Amendment	NOTES
Waste Mgmt	WASTE-6	<p>The project owner shall prepare an Operation Waste Management Plan for all wastes generated during operation of the facility and shall submit the plan to BLM's Authorized Officer and the CPM for review and approval. The plan shall contain, at a minimum, the following:</p> <ul style="list-style-type: none"> a detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications; management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans; information and summary records of conversations with the local Certified Unified Program Agency and the Department of Toxic Substances Control regarding any waste management requirements necessary for project activities. Copies of all required waste management permits, notices, and/or authorizations shall be included in the plan and updated as necessary; a detailed description of how facility wastes will be managed and any contingency plans to be employed, in the event of an unplanned closure or planned temporary facility closure; and a detailed description of how facility wastes will be managed and disposed upon closure of the facility. 	<p>The project owner shall submit the Operation Waste Management Plan to BLM's Authorized Officer and the CPM for approval no less than 30 days prior to the start of project operation. BLM's Authorized Officer and the CPM shall approve or identify any material deficiencies in the Operation Waste Management Plan within 30 days following receipt of the Plan. The project owner shall submit any required revisions to BLM's Authorized Officer and the CPM within 20 days of notification from BLM's Authorized Officer and the CPM that revisions are necessary.</p> <p><u>The project owner shall also document in each Annual Compliance Report the actual volume of wastes generated and the waste management methods used during the year; provide a comparison of the actual waste generation and management methods used to those proposed in the original Operation Waste Management Plan; and update the Operation Waste Management Plan as necessary to address current waste generation and management practices.</u></p>	Operations Waste Management Plan was submitted on 9/24/2013	30 days Prior to the Start of Project Operations	9/24/2013; 1/30/2015; 1/29/2016			Operations Waste Management Plan was submitted on 9/24/2013; Actual volume of wastes generated submitted in the Annual Compliance Report
Waste Mgmt	WASTE-7	<p>The project owner shall ensure that all spills or releases of hazardous substances, hazardous materials, or hazardous waste are reported, cleaned up, and remediated as necessary, in accordance with all applicable federal, state, and local requirements.</p>	<p>The project owner shall document all unauthorized releases and spills of hazardous substances, materials, or wastes that occur on the project property or related pipeline and transmission corridors. The documentation shall include, at a minimum, the following information: location of release; date and time of release; reason for release; volume released; amount of contaminated soil/material generated; how release was managed and material cleaned up; if the release was reported; to whom the release was reported; release corrective action and cleanup requirements imposed by regulating agencies; level of cleanup achieved and actions taken to prevent a similar release or spill; and disposition of any hazardous wastes and/or contaminated soils and materials that may have been generated by the release. Copies of the unauthorized spill documentation shall be provided to BLM's Authorized Officer and the CPM within 30 days of the date the release was discovered.</p>	As needed/ONGOING REPORTED IN MCR	As needed				
Worker Safety & FP	WS-2	<p>The project owner shall submit to BLM's Authorized Officer and the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following:</p> <ul style="list-style-type: none"> An Operation Injury and Illness Prevention Plan; An Emergency Action Plan; Hazardous Materials Management Program; Fire Prevention Program (8 CCR § 3221); and; Personal Protective Equipment Program (8 CCR §§ 3401-3411). 	<p>At least thirty (30) days prior to the start of first-fire or commissioning, the project owner shall submit to BLM's Authorized Officer and the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program. The project owner shall provide a copy of a letter to BLM's Authorized Officer and the CPM from the San Bernardino County Fire Department stating the Fire Department's comments on the Operations Fire Prevention Plan and Emergency Action Plan.</p> <p>The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to BLM's Authorized Officer and the CPM for review and approval concerning compliance of the program with all applicable Safety Orders. The Operation Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the San Bernardino County Fire Department for review and comment.</p>	Submitted Project Operations Safety and Health Program to BLM's Authorized Officer and the CPM and SBCFD.	30 days Prior Start of First Fire or Commissioning	19-Nov-2013			
Worker Safety & FP	WS-5	<p>The project owner shall ensure that a portable automatic external defibrillator (AED) is located on site during construction and operations and shall implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functioning at all times. During construction and commissioning, the following persons shall be trained in its use and shall be on-site whenever the workers that they supervise are on-site: the Construction Project Manager or delegate, the Construction Safety Supervisor or delegate, and all shift foremen. During operations, all power plant employees shall be trained in its use. The training program shall be submitted to BLM's Authorized Officer and the CPM for review and approval.</p>	<p>At least thirty (30) days prior to the start of site mobilization the project owner shall submit to BLM's Authorized Officer and the CPM proof that a portable AED exists on site and a copy of the training and maintenance program for review and approval.</p>	Approved (Construction) ONGOING DURING OPERATIONS.	30 days Prior Site Mobilization	13-Aug-2010	2-Sep-2010		

Exhibit 3

Air Quality Conditions of Certifications

Appendix A

Condition of Certification AQ-01

**Project Owner Statement
Pertaining to Equipment Non-
Compliant Operations**



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

December 31, 2015

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C) Project Owner Statement Pertaining to Equipment Non-compliant Operations that shall be Listed in the Annual Compliance Report (COMPLIANCE-7) to fulfill California Energy Commission Conditions of Certifications, AQ-01 and AQ-27

Dear Mr. Douglas and Mr. Ahrens,

In accordance with the requirements of Conditions of Certifications AQ-01 and AQ-27 of the Commission's approval of the Ivanpah Solar Electric Generating System, we are providing the following statement as a requirement in the Annual Compliance Report:

Operation of all auxiliary boilers and nighttime preservation boilers are conducted in compliance with all data and specifications submitted with the applications under which the permits were issued. MDAQMD conducted an Air Quality Inspection on November 19, 2015 and reported that the facility is in compliance with this Condition of Certification. Therefore, at the end of the reporting period, there are no non-compliant operations to be listed in the annual compliance report.


William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364

CC: Doug Davis, NRG
Tim Sisk, NRG
Mitch Samuelian, NRG
Document Control Specialist – NRG.

Appendix B

**Condition of Certification
AQ-02 & AQ-28**

**Project Owner Statement
Pertaining to Violations in
Equipment Operations**



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

December 31, 2015

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C) Project Owner/Operator Statement Pertaining to Violations in Equipment Operations that shall be Included in the Annual Compliance Report (COMPLIANCE-7) to fulfill California Energy Commission Conditions of Certifications, AQ-02 and AQ-28

Dear Mr. Douglas and Mr. Ahrens,

In accordance with the requirements of Conditions of Certifications AQ-02 and AQ-28 of the Commission's approval of the Ivanpah Solar Electric Generating System, we are providing the following statement as a requirement in the Annual Compliance Report:

The owner's/operator's operation of all auxiliary boilers and nighttime preservation boilers are in strict accord with the recommendations of the manufacturer or supplier and/or sound engineering principles and consistent with all information submitted with the permit applications. MDAQMD conducted an Air Quality Inspection on November 19, 2015 and reported that the facility is in compliance with this Condition of Certification. Therefore, at the end of the reporting period, there are no violations or operational non-compliance information to be included in the annual compliance report.

A handwritten signature in black ink that reads "William Dusenbury". The signature is written in a cursive, flowing style.

William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

CC: Doug Davis, NRG
Tim Sisk, NRG
Mitch Samuelian, NRG
Document Control Specialist – NRG.

Appendix C

**Conditions of Certification
AQ-03 & AQ-29**

**Project Owner Statement
Pertaining to Use of Natural Gas
as Fuel for the Boilers**



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

December 31, 2015

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C) Project Owner/Operator Statement Pertaining to Use of Natural Gas as Fuel for the Boilers and Include Proofs in the Annual Compliance Report (COMPLIANCE-7) to fulfill California Energy Commission Conditions of Certifications, AQ-03 and AQ-29

Dear Mr. Douglas and Mr. Ahrens,

In accordance with the requirements of Conditions of Certifications AQ-03 and AQ-29 of the Commission's approval of the Ivanpah Solar Electric Generating System, we are providing the following statement as a requirement in the Annual Compliance Report:

The facility is using natural gas supplied from Kern River Gas Transmission Company pipeline. KRGT Company is a Public Utility Company that was previously approved for this project. MDAQMD conducted an Air Quality Inspection on November 19, 2015 and reported that the facility is in compliance with this Condition of Certification.


William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

CC: Doug Davis, NRG
Tim Sisk, NRG
Mitch Samuelian, NRG
Document Control Specialist – NRG.

Appendix D

**Conditions of Certification
AQ-12 & AQ-34**

**Auxiliary Boilers & Nighttime
Preservation Boilers Gas
Consumption Record**

2015 - ISEGS AUXILIARY BOILERS and NIGHTTIME PRESERVATION BOILERS GAS CONSUMPTION RECORD

(Compliance with AQ-03, AQ-04, AQ-08, AQ-11, AQ-12, AQ-29, AQ-30, AQ-32 & AQ-34)

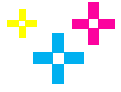
Last Reading Taken on: 31-Dec-2015

LOCATION (MDAQMD PERMIT No.)	2015 AUXILIARY BOILER GAS CONSUMPTION			2015 NIGHTTIME PRESERVATION BOILER GAS CONSUMPTION			2015 YTD CONSUMPTION			ANNUAL GAS CONSUMPTION LIMIT (MMSCF)	2015 AVAILABLE CAPACITY FOR CONSUMPTION (MMSCF)	2015 AVERAGE DAILY AVAILABLE CAPACITY (MMSCF)
	(lbm)	(SCF)	(MMSCF)	(lbm)	(SCF)	(MMSCF)	(lbm)	(SCF)	(MMSCF)			
Unit 1 Gas Consumption by Month:												
Jan-2015	324,433	7,206,819	7.21	33,363	741,125.83	0.74	357,796	7,947,945	7.95			
Feb-2015	1,173,382	26,022,226	26.02	99,729	2,212,803.97	2.21	1,273,111	28,235,030	28.24			
Mar-2015	1,174,227	26,074,121	26.07	99,413	2,207,206.85	2.21	1,273,640	28,281,328	28.28			
Apr-2015	1,825,051	40,467,515	40.47	70,303	1,559,002.01	1.56	1,895,355	42,026,517	42.03			
May-2015	1,333,983	29,603,826	29.60	89,337	1,983,051.71	1.98	1,423,320	31,586,877	31.59			
Jun-2015	2,055,705	45,601,094	45.60	77,591	1,721,249.86	1.72	2,133,295	47,322,343	47.32			
Jul-2015	2,130,160	47,266,470	47.27	76,349	1,694,475.82	1.69	2,206,509	48,960,945	48.96			
Aug-2015	1,871,644	41,542,774	41.54	85,442	1,896,058.39	1.90	1,957,086	43,438,832	43.44			
Sep-2015	1,655,580	36,739,664	36.74	83,549	1,854,426.97	1.85	1,739,129	38,594,091	38.59			
Oct-2015	882,813	19,633,718	19.63	94,402	2,100,401.78	2.10	977,214	21,734,120	21.73			
Nov-2015	1,315,720	29,260,713	29.26	102,048	2,270,179.25	2.27	1,417,768	31,530,892	31.53			
Dec-2015	1,437,335	32,028,344	32.03	108,324	2,412,423.19	2.41	1,545,659	34,440,767	34.44			
Ivanpah 1 Aux. Boiler (B010375) & Nighttime Preservation Boiler (B011544)	17,180,033	381,447,283	381.45	1,019,851	22,652,405.64	22.65	18,199,883	404,099,688	404.10	525.00	120.90	8.64
Unit 2 Gas Consumption by Month:												
Jan-2015	582,097	12,922,568	12.92	52,854	1,172,847.22	1.17	634,952	14,095,416	14.10			
Feb-2015	838,847	18,596,442	18.60	49,689	1,101,871.23	1.10	888,535	19,698,314	19.70			
Mar-2015	1,326,611	29,456,235	29.46	80,987	1,797,949.42	1.80	1,407,598	31,254,185	31.25			
Apr-2015	1,220,648	27,061,939	27.06	65,767	1,458,702.39	1.46	1,286,415	28,520,642	28.52			
May-2015	1,770,098	39,296,048	39.30	55,501	1,231,848.96	1.23	1,825,599	40,527,897	40.53			
Jun-2015	2,110,781	46,816,657	46.82	50,802	1,127,093.70	1.13	2,161,582	47,943,750	47.94			
Jul-2015	1,626,828	36,091,837	36.09	74,320	1,649,084.58	1.65	1,701,149	37,740,922	37.74			
Aug-2015	1,823,831	40,476,583	40.48	57,399	1,273,722.91	1.27	1,881,230	41,750,306	41.75			
Sep-2015	1,718,474	38,135,686	38.14	61,381	1,362,382.77	1.36	1,779,856	39,498,068	39.50			
Oct-2015	1,075,041	23,919,628	23.92	123,242	2,742,783.45	2.74	1,198,283	26,662,412	26.66			
Nov-2015	1,462,060	32,526,631	32.53	68,822	1,530,669.90	1.53	1,530,882	34,057,301	34.06			
Dec-2015	1,608,484	35,828,810	35.83	77,375	1,723,316.74	1.72	1,685,859	37,552,127	37.55			
Ivanpah 2 Aux. Boiler (B010376) & Nighttime preservation Boiler (B011572)	17,163,801	381,129,065	381.13	818,139	18,172,273.27	18.17	17,981,941	399,301,339	399.30	525.00	125.70	8.98
Unit 3 Gas Consumption by Month:												
Jan-2015	656,312	14,546,414	14.55	103,098	2,288,745.01	2.29	759,410	16,835,159	16.84			
Feb-2015	336,741	7,480,690	7.48	28,788	639,336.08	0.64	365,529	8,120,026	8.12			
Mar-2015	1,185,667	26,325,755	26.33	75,953	1,685,986.38	1.69	1,261,621	28,011,741	28.01			
Apr-2015	1,628,821	36,124,253	36.12	49,996	1,108,441.78	1.11	1,678,816	37,232,695	37.23			
May-2015	1,836,975	40,772,412	40.77	60,421	1,341,217.14	1.34	1,897,396	42,113,629	42.11			
Jun-2015	2,023,980	44,896,337	44.90	47,705	1,058,316.18	1.06	2,071,685	45,954,653	45.95			
Jul-2015	1,684,556	37,374,848	37.37	57,489	1,275,877.06	1.28	1,742,045	38,650,725	38.65			
Aug-2015	2,583,312	57,333,438	57.33	19,815	439,435.09	0.44	2,603,127	57,772,873	57.77			
Sep-2015	1,574,523	34,938,297	34.94	50,133	1,112,945.66	1.11	1,624,656	36,051,243	36.05			
Oct-2015	886,060	19,701,400	19.70	189,377	4,215,627.31	4.22	1,075,436	23,917,027	23.92			
Nov-2015	1,899,980	42,286,954	42.29	46,238	1,027,554.14	1.03	1,946,218	43,314,508	43.31			
Dec-2015	1,720,186	38,327,025	38.33	76,706	1,707,636.65	1.71	1,796,892	40,034,661	40.03			
Ivanpah 3 Aux. Boiler (B010377) & Nighttime Preservation Boiler (B011573)	18,017,113	400,107,822	400.11	805,719	17,901,118.47	17.90	18,822,832	418,008,940	418.01	525.00	106.99	7.64
2015 YTD COMBINED GAS CONSUMPTION	52,360,947	1,162,684,170	1,162.68	2,643,709	58,725,797.38	58.73	55,004,656	1,221,409,967	1,221.41	1,575.00	353.59	25.26

Appendix E

Condition of Certification AQSC-06

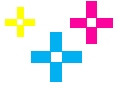
Onsite Vehicles and Equipment Fleet Plan for Mirror Washing and Facility Maintenance Activities



Ivanpah Solar Electric Generating System (07-AFC-5C)

On-site Vehicle and Equipment Fleet Plan for Mirror Washing and Facility Maintenance Activities (AQSC-06)

Revision 1
December 17, 2015



Revision History

Date	Revision	Action
5/23/2013	Revision 0	First Edition
12/17/2015	Revision 1	Updated Equipment Fleet for maintenance activities and mirror washing equipment

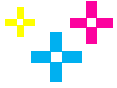
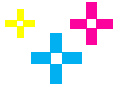


Table of Contents

1. INTRODUCTION	4
2. PURPOSE	4
3. ONSITE VEHICLE AND EQUIPMENT UPDATE.....	4
4. ATTACHMENTS	5



1. INTRODUCTION

In accordance with the Condition of Certification AQSC-06 of the California Energy Commission (CEC) approval of the Ivanpah Solar Electric Generating System, the project owner, when obtaining dedicated on or off-road vehicles for mirror washing activities and other facility maintenance activities, shall only obtain new model year vehicles that meet California on-road vehicle emission standards or appropriate U.S.EPA/California off-road engine emission standards for the model year when obtained.

At least 60 days prior to the start of commercial operation, the project owner shall submit to the CPM a copy of the plan that identifies the size and type of the on-site vehicle and equipment fleet and the vehicle and equipment purchase orders and contracts and/or purchase schedule. The plan shall be updated every other year and submitted in the Annual Compliance Report (COMPLIANCE-7).

The Plan was initially submitted to CEC and BLM on August 22, 2013 and based on the requirement; the Plan is due for an update and is submitted in the 2015 Annual Compliance Report.

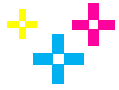
2. PURPOSE

The purpose of this Plan is to identify the size and type of onsite/on and off-road vehicles and equipment fleet for mirror washing activities and other facility maintenance activities. During the course of plant operations and maintenance activities, various type of vehicle and equipment are being used to achieve operational and maintenance goals of the facility. It is anticipated that vehicles and equipment used for maintenance activities and mirror washing activities may change from time to time and periodic updates of this plan deemed to be necessary.

3. ONSITE VEHICLE AND EQUIPMENT UPDATE

3.1 ONSITE VEHICLE FLEET

In 2014, NRG Energy added various types of onsite vehicles and equipment for facility operations and maintenance activities. In 2013 when this Plan was developed, there are about six (6) vehicles used for operations and maintenance activities. This list grew up to twenty one (21) vehicles for operations and maintenance activities. The owners also bought equipment for maintenance works in 2014. These vehicles and equipment are currently owned and maintained by NRG Construction LLC.



By 2015, there are no vehicles or equipment on lease. A list of the current onsite on and off-road vehicle fleet and equipment for facility operations and maintenance activities are shown on Table 1 in Section 4.

3.2 MIRROR WASHING MACHINES

The Kenworth T-800 Mirror Washing Machines (FFT) that were bought for solar field mirror washing activities in 2013 were sold in 2014 and these equipment are no longer on site. They were not utilized for their intended use as they were not efficient for mirror washing. They were eventually removed from site in June 2014.

Since the start of commercial operations, the mirror washing activities are performed by a contractor who utilizes manpower to hand wash the mirrors with power washers and brushes, then left to air dry. The power washers are mounted on trailers with a 500 gallon water tank and towed with a small side by side gas powered buggies. The power washers are run with lawnmower type gas engines. Two to three teams of four people can wash up to 2,000 heliostats per day.

New Mirror Washing Machines were delivered to the ISEGS facility on August 29, 2015. These machines were intended to be back-up for mirror washing machine activities in case the need arises to speed up the cleaning of mirrors in the solar field. A list of mirror washing equipment is shown on Table 1.

4. ATTACHMENTS

A list of onsite vehicles and equipment fleet for facility operations and maintenance activities and mirror washing activities is shown on Table 1 below.

TABLE 1 - IVANPAH VEHICLE LISTING

VEHICLES & EQUIPMENT FOR FACILITY MAINTENANCE ACTIVITIES

DESCRIPTION	IVANPAH ID#	YEAR	MAKE	MODEL	CA LICENSE	REGISTRATION	VIN	ENGINE	Est. Cost	TIRES		NOTES
										FRONT	REAR	
PICKUP	019	2012	FORD	F-250 SUPER DUTY 4x4	13295B1	4/11/2012 - 4/30/2013	1FT7W2B68CEA07084	6.2L GAS	\$30,000	LT245/75R17E	LT245/75R17E	Crew use
PICKUP	020	2012	FORD	F-250 SUPER DUTY 4x4	13294B1	4/11/2012 - 4/30/2013	1FT7W2B62CEA80628	6.2L GAS	\$30,000	LT245/75R17E	LT245/75R17E	Crew use
PICKUP	012	2012	CHEVROLET	SILVERADO 1500 4X4	67866C1	7/2/14 - 7/1/15	3GCPKREA6CG107438	4.8I FLEX FUEL	\$35,000	P265/70R17	P265/70R17	Took Possession 3/2014
PICKUP	74117 (11)	2011	CHEVROLET	SILVERADO 1500	98702B1	12/31/2015 - 12/31/2016	3GCPCREA0BG374117		\$33,000			Took Possession 8/28/14
PICKUP	77240 (13)	2011	CHEVROLET	SILVERADO 1500	98703B1	12/31/2015 - 12/31/2016	3GCPCREA3BG377240		\$33,000			Took Possession 8/28/15
SIDE BY SIDE	C17		POLARIS	RANGER 500/2 SEATER				500cc EFI	\$8,000			Took Possession 8/29/14
SIDE BY SIDE	C18		POLARIS	RANGER 500/2 SEATER				500cc EFI	\$8,000			Took Possession 5/2014
SIDE BY SIDE	C19		POLARIS	RANGER 500/2 SEATER				500cc EFI	\$8,000			Took Possession 8/29/14
SIDE BY SIDE	C20		POLARIS	RANGER 500/2 SEATER				500cc EFI	\$8,000			Took Possession 8/29/14
SIDE BY SIDE	C21		John Deere	Gator 625i			1M0625GSCAM010611		\$8,000			Took Possession 10/8/14
SIDE BY SIDE	C30		POLARIS	RANGER 500/2 SEATER				500cc EFI	\$8,000			Took Possession 8/28/14
SIDE BY SIDE	C31		POLARIS	RANGER 500/2 SEATER				500cc EFI	\$8,000			Took Possession 8/28/14
SIDE BY SIDE	C45		John Deere	Gator 625i			1M0625GSAAM010442		\$8,000			Took Possession 10/8/14
SIDE BY SIDE	C47	2012	POLARIS	RANGER 500/4 SEATER				500cc EFI	\$10,000			Took possession in 2013
SIDE BY SIDE	C48	2012	POLARIS	RANGER 500/4 SEATER				500cc EFI	\$10,000			Took possession in 2013
SIDE BY SIDE	C49	2012	POLARIS	RANGER 500/4 SEATER				500cc EFI	\$10,000			Took possession in 2013
SIDE BY SIDE	C50	2012	POLARIS	RANGER 500/4 SEATER				500cc EFI	\$10,000			Took possession in 2013
SIDE BY SIDE	C51		Kawasaki	Mule 4010					\$8,000			Took Possession 10/8/14
SIDE BY SIDE	C55		E-Z-GO	ST 4x4					\$10,000			No Cage - Took Possession 8/27/14 - Honda Engine
SIDE BY SIDE	C56		IR	1550 XRT					\$9,000			No Cage
SIDE BY SIDE	C62		Kawasaki	Mule 4010					\$8,000			Took Possession 10/8/14
SKID STEER			Catapillar	259B3			S/N YYZ01301	Diesel	\$57,320			Attachments: 12" Auger; 18" Auger; 66" bucket; 46" Fork Carriage; 48" Pallet Forks; A19B Auger; BH150 Backhoe; 12" Backhoe Bucket; BA18 Hydraulic Broom & Harness. Purchased 2014
TELE-HANDLER FORK-LIFT			Catapillar	TL1055				Diesel	\$143,525			Purchased 7/2014
MAN-LIFT			Genie	Z-135			Z13512-1579		\$274,000			Purchased 8/2014
MIRROR TRAILER									\$2,000			Non-Motorized
MIRROR TRAILER									\$2,000			Non-Motorized
MIRROR TRAILER									\$2,000			Non-Motorized
Water Tank Trailers (Buffaloes)									\$2,500			Purchased from Argus 2013: Non-motorized
Water Tank Trailers (Buffaloes)									\$2,500			Purchased from Argus 2013: Non-motorized

VEHICLES FOR MIRROR WASHING ACTIVITIES

DESCRIPTION	IVANPAH ID#	YEAR	MAKE	MODEL	CA LICENSE	REGISTRATION	VIN	ENGINE	Est. Cost	TIRES		NOTES
										FRONT	REAR	
MIRROR WASHING MACHINES (NT)	1		New Holland	T7.170				131 HP Tier 4a	Unknown			Delivered from Coalinga 8/29/15
MIRROR WASHING MACHINES (NT)	2		New Holland	T7.170			ZCBMN21227	131 HP Tier 4a	Unknown			Delivered from Coalinga 8/29/15
MIRROR WASHING MACHINES (NT)	3		New Holland	T7.170				131 HP Tier 4a	Unknown			Delivered from Coalinga 8/29/15
MIRROR WASHING MACHINES THAT ARE NO LONGER ON SITE												
MIRROR WASHING MACHINES (FFT)	1	2012	KENWORTH	T-800			1NKDX7TX4DR336832	2010 310	\$140,000	425/65R22.5	315/80R22.5L	Vehicle sold @ Auction June 2015.
MIRROR WASHING MACHINES (FFT)	2	2012	KENWORTH	T-800					\$140,000	425/65R22.5	315/80R22.5L	Vehicle sold @ Auction June 2015.
MIRROR WASHING MACHINES (FFT)	3	2012	KENWORTH	T-800					\$140,000	425/65R22.5	315/80R22.5L	Vehicle sold @ Auction June 2015.
MIRROR WASHING MACHINES (FFT)	4	2012	KENWORTH	T-800					\$140,000	425/65R22.5	315/80R22.5L	Sale Pending Dec 2015. Awaiting ownership documents from Brightsource to allow transfer.

Appendix F

Conditions of Certification AQSC-07

Dust Control Annual Report



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

December 31, 2015

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C) Operations Dust Control Annual Report, to fulfill California Energy Commission Condition of Certification, AQSC-07

Dear Mr. Douglas and Mr. Ahrens,

In accordance with Section 5.1 of the Operations Dust Control Plan submitted under the requirements of Condition of Certification AQSC-07 of the Commission's approval of the Ivanpah Solar Electric Generating System, we are providing the following recordkeeping and reporting requirements of the Operations Dust Control Plan as a requirement in the Annual Compliance Report:

Requirement #1: For dust suppressants, the CARB equipment precertification Executive Order and Evaluation Report or EPA Environmental Technology Verification Report, as appropriate. Only dust suppressants certified through CARB's Equipment Precertification Program⁴ or U.S. EPA's Environmental Technology Verification Program⁵ will be used onsite, unless approved in advance in writing by the CEC CPM. Dust suppressants that are disallowed by California's Regional Water Quality Control Boards and/or the Mojave Desert AQMD will not be utilized.

Water was the only medium of dust suppressant applied during the reporting period.

Requirement #2: Documentation of any fugitive dust complaints made to the Mojave Desert AQMD (where ISEGS was subsequently notified), and documentation of any fugitive dust complaints made directly with the ISEGS.

ISEGS did not receive any fugitive dust complaints during the reporting period, either from the Mojave Desert AQMD or directly.



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

Requirement #3: Copies of any fugitive dust violations received, and immediate actions taken to return to compliance.

ISEGS did not receive any fugitive dust violations during the reporting period.

Requirement #4: A record of each visible dust plume response performed under Section 4.0. The record will identify the date and time that a visible dust plume meeting the criteria of Section 4.2 was observed; the source of the dust plume; the specific mitigation measures directed under Steps 1, 2, or 3; the time that the specific mitigation measures were directed under Steps 1, 2, or 3; the effectiveness of each mitigation measure directed, and a record of any appeals/responses to/from the CEC CPM or the Bureau of BLM Authorized Officer in relation to the shutdown of dust plume generating activities.

ISEGS implemented standard control measures as listed in section 3.3 of the Operations Dust Control Plan. Per section 4.0, the Environmental Specialist (VEE Certified) monitored the site for dust plumes. No visible plumes were observed either 400 feet upwind from any regularly occupied structure not owned by ISEGS or 200 feet beyond the centerline of a linear feature. No additional response as outlined in sections 4.2.1 – 4.2.3 was taken.

William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364

CC: Doug Davis, NRG
Tim Sisk, NRG
Mitch Samuelian, NRG
Document Control Specialist – NRG.

Exhibit 4

Biological Resources Conditions of Certification

Appendix G

**Conditions of Certification BIO-02,
BIO-04, BIO-10, BIO-11, BIO-18,
BIO-20, & BIO-21**

**Ivanpah Solar Electric Generating System
California Energy Commission (07-AFC-5C)
Bureau of Land Management
(CACA-48668, 49502, 49503, and 49504)
Conditions of Certification BIO-2, BIO-4, BIO-10, BIO-11,
BIO-18, BIO-20, BIO-21**

**Annual Biological Report
January 1, 2015 – December 31, 2015
Reporting Period
Submitted
January 31, 2016**

Prepared by: Designated Biologist on behalf of Solar Partners I, II, VIII LLC

**100302 Yates Well Road
Nipton, CA 92364**

Table of Contents

1.0 Introduction	5
2.0 Project Status	7
2.1 Operations Monitoring Summary	7
2.1.1 Ivanpah 1, 2, and 3, Construction Logistics Areas, and Colosseum Road.....	7
2.1.2 Construction in 2015.....	8
2.1.3 Interstate 15 pen.....	8
3.0 Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP)	9
4.0 Assessment of Mitigation Measures	10
4.1 Worker Environmental Awareness Program BIO-6	10
4.2 Impact Avoidance and Minimization Measures BIO-11	10
4.2.1 Limit Disturbance Areas	10
4.2.2 Minimize Road Impacts.....	10
4.2.3 Minimize Traffic Impacts.....	10
4.2.4 Monitoring During Construction occurring as part of Maintenance Activities.....	11
4.2.5 Minimize Impacts of Transmission/Pipeline Alignments, Roads, Staging Areas.....	11
4.2.6 Avoid Use of Toxic Substances	11
4.2.7 Minimize Lighting Impacts	11
4.2.8 Badger Surveys	11
4.2.9 Gila Monster Surveys.....	12
4.2.10 Avoid Vehicle Impacts to Desert Tortoise.....	12
4.2.11 Avoid Wildlife Pitfalls	12
4.2.12 Minimize Standing Water	12
4.2.13 Dispose of Road-killed Animals.....	13
4.2.14 Bird Carcasses	13
4.2.15 Minimize Spills of Hazardous Materials	13
4.2.16 Worker Guidelines.....	13
4.2.17 Monitor Ground Disturbing Activities Prior to Site Mobilization	13
4.3 Raven Management BIO-12	13
4.4 Weed Management Activities BIO-13	14
4.5 Closure, Revegetation and Rehabilitation Plan BIO-14	14
4.6 Nesting Birds BIO-15	14
4.6.1 Raptor Nests.....	15
4.7 Burrowing Owls BIO-16	16
4.8 Desert Tortoise Compensatory Mitigation BIO-17	16
4.9 Special-status Plant Impact Avoidance and Minimization BIO-18	16
4.10 Streambed Impact Avoidance and Minimization BIO-20	17
4.11 Bird or Bats Injuries and Fatalities BIO-21	17
4.11.1 Avian and Bat Monitoring and Management Plan (ABMMP).....	17
4.12 Desert Tortoises BIO-8, BIO-9, BIO-10	17

Table 2. Definition of ISEGS monitored tortoise types.....	18
Figure 1: Locations of ISEGS tortoise groups	19
Table 3. Summary of monitored tortoises.....	20
4.12.1 Tortoise Discoveries - 2015.....	20
Table 4. New project tortoises inside project boundaries in 2015	20
4.12.2 Husbandry and the Holding Pens.....	20
4.12.3 Husbandry Protocols	20
4.12.4 Head Start.....	21
4.12.5 Desert Tortoise Health Analyses and ELISA Testing.....	21
4.12.6 Translocations.....	22
4.12.7 Short-Distance Translocations	22
4.12.8 Long-Distance Translocation	22
4.12.9 Tortoise Fatalities	22
4.13 Precipitation Events and Fence Monitoring	23
Table 5: ISEGS Precipitation Data for 2015	24
4.14 Miscellaneous	25
5.0 Summary of Data	25
5.1 Mammal Fatalities	25
5.2 Wildlife Fatalities.....	26

Appendices

Appendix A	BRMIMP Table
Appendix B	Map of ISEGS 2015 Nesting Bird Locations
Appendix C	Map of 2015 Raptor Nest Locations
Appendix D	BIO-20 Biological Change of Conditions Reports
Appendix E	ISEGS 2015 Desert Tortoise Disposition Table
Appendix F	Maps of ISEGS Monitored Tortoise Locations
Appendix G	ISEGS 2015 ELISA Results
Appendix H	Summary of Tortoise Fatalities Discovered in 2015
Appendix I	Map of 2015 Mammal Fatality Locations

1.0 Introduction

This report is submitted in accordance with condition of certification (COC) BIO-2, BIO-4, BIO-10, BIO-11, BIO-18, BIO-20 and BIO-21 of the California Energy Commission (CEC) Ivanpah Solar Electric Generating System (ISEGS) Commission Decision and terms, conditions, and stipulations of the Bureau of Land Management (BLM) right of way agreement. Each of these conditions requires reporting on an annual basis for particular aspects of the project related to biological resources. The requirements of each of these conditions are outlined below and this report addresses each of these requirements.

BIO-2 and BIO-4 require:

“During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report.”

BIO-10 requires:

The Designated Biologist will provide the Bureau of Land Management (BLM) Authorized Officer (AO) and the CEC Compliance Project Manager (CPM) with an annual Listed Species Status Report which shall include at a minimum: “1) A general description of the status of the project site and construction activities, including actual or projected completion dates, if known; 2) a copy of the table in the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) for the Ivanpah Solar Electric Generating System, San Bernardino County, California (07-AFC-5C), COC BIO-7 with notes showing the current implementation status of each mitigation measure; and 3) an assessment of the effectiveness of each completed or partially completed mitigation measure in minimizing and compensating for project impacts.”

BIO-11 requires:

“The Designated Biologist shall provide to the CPM, BLM’s Authorized Officer, CDFG, and USFWS an annual report summarizing all available data (species of carcass, date and location collected, and cause of death) describing bird and other carcasses collected within the project site each year.”

BIO-18 requires:

“During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report for a period not less than 10 years for the Gas Pipeline Revegetation Plan, and for the life of the project for the Special-Status Plant Protection and Monitoring Plan, and the

Special-Status Plant Remedial Action Plan, including funding for the seed storage.”

BIO-20 requires:

“A copy of the notify change of conditions report shall be included in the annual reports”

BIO-21 requires:

“Following the completion of the fourth quarter of monitoring, the Designated Biologist shall prepare an Annual Report that summarizes the year’s data, analyzes any Project-related bird fatalities or injuries detected, and provides recommendations for future monitoring and any adaptive management actions needed.”

This report provides the required information for BIO-2, BIO-4, BIO-10, BIO-20 and the data for non-avian species as required in BIO-11. Avian reporting as required by BIO-11, BIO-21, and terms, conditions, and stipulations of the BLM right of way agreement is provided under separate cover. In addition, BIO-18 requirements are provided under a separate cover. This report provides an update on the project status, the BRMIMP table, an assessment of mitigation measures, and a summary of data for non-avian species.

2.0 Project Status

On December 30, 2013, Ivanpah 1 commenced commercial operations. On December 31, 2013, Ivanpah 2 and 3 commenced commercial operations. As a result of the commencement of commercial operations, the management of the environmental compliance at the facility was transferred to NRG Energy Services, the operator of the facility.

NRG Energy Services operated the ISEGS facility from January 1, 2015 through December 31, 2015. The Designated Biologist and/or Biological Monitors are still present at the facility seven (7) days a week working with the operator to implement the CEC's conditions of certifications, terms, conditions, and stipulations of the BLM right of way agreement, and the USFWS biological opinions mitigation measures.

2.1 Operations Monitoring Summary

Within the project boundaries, fence lines, kit fox activity, weeds, and tortoises at the quarantine pen were monitored. In addition, biological staff responded to reports of wildlife presence or incidents involving wildlife. The Avian & Bat Management and Monitoring Plan (ABMMP) was implemented during January 2015 by HT Harvey and Associates biologists. During the month of February, responsibility for implementing the ABMMP was delegated to WEST Inc. biologists.

On a typical weekday:

- The designated biologist or biological monitor inspected the three units and the construction logistic areas (CLA), for fence integrity and fence repairs, weed presence, kit fox activity, presence of avian and bat mortalities and injuries.
- Commencing in spring of 2015 the designated biologist performed maintenance on avian deterrent systems in Unit 1. Avian deterrence was installed in Units 2 and 3 in fall and once operational was subsequently monitored and maintained by the biological staff.
- One authorized biologist implemented the Husbandry Plan at the quarantine pens.
- One biological monitor collected raven and nesting bird data.

2.1.1 Ivanpah 1, 2, and 3, Construction Logistics Areas, and Colosseum Road

The designated biologist or biological monitor performed the following activities:

- Monitored fences for breaches

- Surveyed for weeds
- Monitored tortoise activity
- Performed maintenance on Bird Buffer and Gard
- Responded to the presence or incident involving wildlife
- Collected raven and nesting bird data

2.1.2 Construction in 2015

In 2015, two construction activities were undertaken at the facility. The first was the revegetation of the Construction Logistics Area (CLA) and the second was utility line maintenance alongside Colosseum Road. Revegetation of the CLA East area began in October 2015. Prior to the commencement of the revegetation activities, this area was surveyed by a biological monitor for the presence of mammals or other wildlife.

During December of 2015 excavation activities were conducted in Colosseum Wash to ensure utility lines remained at an appropriate depth underground. Prior to the commencement of this activity the designated biologist surveyed the wash and adjacent areas for the presence or absence of mammals or other wildlife.

2.1.3 Interstate 15 pen

A biological monitor periodically surveyed fences for breaches and weeds. All fence line repair resulting from storm water runoff was escorted by a biological monitor.

3.0 Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP)

BIO-10 requires a copy of the table in the BRMIMP with notes showing the current implementation status of each mitigation measure. See Appendix A for a copy of the BRMIMP table.

4.0 Assessment of Mitigation Measures

Mitigation measures discussed in this section are limited to those measures included as BIO-6 Worker Environmental Awareness Program, BIO-8 Desert Tortoise Clearance Surveys and Fencing, BIO-9 Desert Tortoise Translocation Plan, BIO-10 Desert Tortoise Compliance Verification, BIO-11 Impact Avoidance and Minimization Measures, BIO-12 Raven Management, BIO-13 Weed Management Measures, BIO-15 Nest Surveys, BIO-16 Burrowing Owl Impact Avoidance and Minimization Measures, BIO-17 Desert Tortoise Compensatory Mitigation, BIO-19 Special-status Plant Impact Avoidance and Minimization, and BIO-20 Streambed Impact Avoidance and Minimization .

The measures described below represent best management practices that were either specified in the CEC License, BLM ROW or developed independently at the site. For each of these broad categories of measures a succinct summary and an evaluation of the effectiveness is provided as required under BIO-10

4.1 Worker Environmental Awareness Program BIO-6

The approved Worker Environmental Awareness Program (WEAP) was implemented throughout 2015. Workers were trained after arrival at the site, prior to commencing work and annually. Training records were maintained and are provided under a separate cover of this annual report.

4.2 Impact Avoidance and Minimization Measures BIO-11

BIO-11 requires impact avoidance and minimization measures to protect biological resources during construction. BIO-11 contains seventeen specific measures and each of these measures is evaluated below.

4.2.1 Limit Disturbance Areas

No construction activities took place within the project fence line that required delineation with stakes and there was no additional storage of dirt during 2015. All project vehicles were parked within the project fence line. No measures were undertaken for this measure and therefore, no evaluation is presented.

4.2.2 Minimize Road Impacts

Established roads exist at the site and site fencing constrains vehicles to these areas. No new roads were constructed within the ISEGS fence line in 2015. Monitors supervised any activities that occurred outside of the fence line and ensured workers stayed on existing roads. Having a monitor present for activities outside of the fence line ensured the effectiveness of the mitigation measure.

4.2.3 Minimize Traffic Impacts

Vehicular traffic during project operations was confined to existing routes of travel to and from the project site. Cross-country vehicle and equipment use outside designated work areas is prohibited. The

speed limit is 20 miles per hour within the project area or on maintenance roads for linear facilities. All workers go through a site orientation. The orientation discusses the site egress route, prohibition of cross-country travel, the requirement of a biological monitor outside of the project fence line, and the speed limit of access routes. Orientation of all workers has been an effective means ensuring workers are aware of the mitigation measure. There have been no recorded instances of workers traveling cross-country, using equipment outside the project fence line, or using alternative routes of travel to and from the site. Biologists have reported vehicles going over 20 miles an hour on paved roads on site. This information was brought to the plant manager who then addressed the issue with site staff during a morning meeting.

4.2.4 Monitoring During Construction occurring as part of Maintenance Activities

This mitigation measure was successful as at least one biological monitor was at the site when there was potential to disturb soil, vegetation, and wildlife during 2015. The Designated Biologist was available by cell phone when offsite to respond as needed. See Section 2.1 Operations Monitoring Summary for more details.

4.2.5 Minimize Impacts of Transmission/Pipeline Alignments, Roads, Staging Areas

Staging areas for operations on the plant site are within the areas that had been fenced with desert tortoise exclusion fencing and cleared. These areas were concentrated rather than dispersed, with the primary staging areas located in the eastern portion of the CLA, and within the paved parking lot of the power blocks. This mitigation measure was effective during 2015.

4.2.6 Avoid Use of Toxic Substances

Separate cover in this annual report discusses hazardous materials used on site. See reporting for HAZ-01 and HAZ-06, provided under separate cover.

4.2.7 Minimize Lighting Impacts

The installation of downcast lighting on site has been effective in not shining light into adjacent wildlife habitat. Nighttime lighting was discontinued in the tower in July 2014, with the exception of the required FAA lighting. Illumination in the tower will only be used when required for maintenance. The results of these mitigation measures continue to be monitored and evaluated.

4.2.8 Badger Surveys

Per the requirements of COC BIO-11, no badger surveys were conducted and no known badger dens were located onsite in 2015. On three separate occasions a camera placed in the solar field as part of the Carcass Removal Trials for the ABMMP captured an American Badger. On April 8, 2015 a badger was photographed by a camera equipped with a motion sensor in Ivanpah 2 solar field. On July 6, 2015 a badger was photographed using similar equipment in the Ivanpah 3 solar field. Finally, on July 9, 2015 a

badger was photographed using similar equipment in the Ivanpah 3 solar field. In all instances the badger was photographed walking by the camera. On June 3, 2015 a camera equipped with a motion sensor was placed on a mammal den (identified as den number 104) that was incidentally found in the Ivanpah 2 solar field. The camera photographed a badger entering the den on June 6, 2015 at 05:28 hours and exiting the den at 09:33 hours. The den continued to be monitored until June 11, 2015 and no other badger photographs were obtained. This burrow was monitored monthly for the remaining of 2015 and no other badger photographs were obtained. Per COC BIO-2, the American Badger observations were submitted to the California Natural Diversity Data Base. No measures were undertaken for these species and therefore, no evaluation is presented.

4.2.9 Gila Monster Surveys

Per the requirements of COC BIO-11, no Gila monster surveys were conducted and no Gila monsters were seen onsite in 2015. No measures were undertaken for these species and therefore, no evaluation is presented.

4.2.10 Avoid Vehicle Impacts to Desert Tortoise

Except for work on the gas line, the Long-Distance Translocation Pen (“I-15 Pen”), and offsite mitigation fences, all vehicles were confined to the area enclosed by desert tortoise exclusion fencing. WEAP training emphasized that workers should routinely inspect the ground beneath vehicles for the presence of wildlife prior to moving the vehicle. Biological monitors reminded workers of the requirement to inspect under vehicles. Outside of fenced areas, biological monitors were responsible to search under all vehicles they escorted. Monitors were required to escort all vehicles traveling on offsite roads. These protective measures were effective at avoiding vehicle impacts to desert tortoise. Adult and juvenile tortoises, snakes, lizards, and small mammals were found under vehicles, and allowed to move or, if necessary, moved out of harm’s way per applicable protocols.

4.2.11 Avoid Wildlife Pitfalls

During 2015 there were no open trenches or pipes stored outside areas fenced with desert tortoise exclusion fences. After the mirrors were installed, several hundred pylons remained uncapped. Biological monitors covered uncapped pylons with temporary caps that were weighted to maintain position. Pylons capped using this method are located on the exterior of the solar field. These temporary caps are working well, preventing entrapment until mirrors are installed in the future.

4.2.12 Minimize Standing Water

There was a minimal amount of water applied to unpaved roads for dust abatement during 2015. Biological monitors communicated directly with water truck drivers if standing water from leaking or spraying water was observed. Speaking directly with the water truck drivers was a successful measure to

reduce standing water.

4.2.13 Dispose of Road-killed Animals

Carcasses of small mammals (rabbits and rodents) and reptiles found in the project area and along access roads were removed by biological monitors as soon as they were detected. Carcasses are disposed of in covered containers so that they were not accessible to ravens or other scavengers per the Raven Management Plan. See Section 5.2 for a list of onsite wildlife fatalities disposed of in 2015.

4.2.14 Bird Carcasses

Bird carcasses found onsite were photographed and the location recorded. A database is maintained of the date, bird species, location data, and suspected cause of death. H.T. Harvey and Associates and WEST Inc. performed the avian and bat injury and fatality surveys during 2015 and this data is presented under separate cover.

4.2.15 Minimize Spills of Hazardous Materials

All vehicles were routinely inspected and maintained in accordance with servicing specifications. A Construction Waste Management Plan was prepared in accordance with WASTE-3 and an Operations Waste Management Plan prepared in accordance with WASTE-6. The annual report for WASTE-6 is provided separately. All spills were reported according to applicable county, state and federal requirements.

4.2.16 Worker Guidelines

All workers and visitors to the site were provided a basic orientation that included specific instruction on biological resources, safety, placement of trash, etc. in accordance with CEC COCs. In addition, workers were provided additional instruction in the worker orientations. All workers were informed as part of the worker training of the requirement that pets were not allowed onsite nor were wildlife to be fed. All site visitors and workers were made aware of the firearms restrictions through worker and visitor orientations.

4.2.17 Monitor Ground Disturbing Activities Prior to Site Mobilization

All site mobilization occurred prior to 2015.

4.3 Raven Management BIO-12

During 2015, the Raven Management Plan was implemented per COC BIO-12 and the 2011 Biological Opinion. The goal of the raven management plan is to deter raven depredation of hatchling and juvenile desert tortoises in Ivanpah Valley. The raven management plan was designed to implement mitigation measures, which would discourage the presences of ravens on site. The plan specifies measures to prevent raven access to anthropogenic food and water resources. There was a decrease in observations made in 2015 of ravens successfully foraging from truck beds, bagged trash, ground scraps, or improperly covered dumpsters, as compared with 2014. Decreases have occurred in the anthropogenic sources of

water by water trucks and pipes, however, water sourced from leaks has increased during this period. The increases in leaks are centered in the power block of the units and are addressed quickly by technicians. The plan calls for perch prevention on structures associated with ISEGS and to discourage roosting. Deployments of perch prevention devices were installed in Unit 1 power block on February 5, 2015. An annual monitoring report for ravens was submitted on December 31, 2015 as per the requirements of the Raven Management Plan.

4.4 Weed Management Activities BIO-13

Biological monitors conducted bimonthly weed surveys throughout the site during the active growing season (March through August) in accordance with COC BIO-13 requirements. Data was collected when noxious weeds were located, the plants were collected, and both were transferred to the Designated Biologist for reporting and disposal. All weed surveys were successfully implemented and completed according to the Weed Management Plan and 2011 USFWS Biological Opinion. A report summarizing weed management activities on site is provided under a separate cover.

4.5 Closure, Revegetation and Rehabilitation Plan BIO-14

A report summarizing the assessments of the Closure, Revegetation and Rehabilitation Plan is provided under a separate cover.

4.6 Nesting Birds BIO-15

Per the requirements of COC BIO-15, no pre-construction surveys for nesting birds were required for the ISEGS site in 2015. A total of 4 nests were found incidentally on the site by avian biologists, from March 19 to May 23. Nesting species found were black-throated sparrow (BTSP), horned lark (HOLA), and American kestrel (AMKE; see “Nesting Raptors” below).

ISEGS biologists continued to use the standard protocol recommended by the California Department of Fish and Wildlife (CDFW) for buffering active nests (containing eggs or nestlings) to a minimum of 250 feet (80 meters). Work supervisors and area personnel were provided with maps and location descriptions of all nests, and asked to stay away a distance of 100 meters. Signage, flagging, and orange traffic safety cones were placed at appropriate distances and locations so as to be clearly visible. For instances where an active nest was found within 250 feet of an existing road or work activity, the Designated Biologist was consulted to determine an appropriate buffer zone or restrictions on nearby activities. When appropriate, nests were monitored to document and prevent disturbance near the buffer perimeter.

There were no documented disturbances of a buffered nest by on site personnel. Buffering nests with signage, flagging, and orange safety cones was an appropriate and clear demarcation to keep workers out

of the area. Providing maps and location description of all nests aided in ensuring disturbances of buffered nests did not occur. Thus, these mitigation measures were deemed to be successful.

See the Map in Appendix B for locations of nests on the ISEGS site in 2015.

4.6.1 Raptor Nests

The first known nesting attempt by a raptor species to occur on the ISEGS site was documented in 2015. On March 19, 2015 an avian biologist conducting mortality surveys observed a male American kestrel fly to a heliostat that appeared to contain nesting material. The heliostat was non-operational and located in a remote area of the western solar field of Ivanpah 3. Closer inspection confirmed unorganized nesting material inside the torque tube, which formed an artificial cavity apparently utilized by the pair. The area was marked with signage buffers, and crew supervisors and workers advised to stay at least 200 meters away from the possible nest location. The solar field supervisor and control room operators were asked to keep the heliostat offline until further notice by the Designated Biologist. Adult male and female kestrels were seen several times in the area, but there was no evidence of continued activity until April 4, 2015 when they were seen to be in egg lay or early incubation. Observations through late April confirmed they were still incubating. However, in early May an operational error allowed the heliostat to recommence operations. Further observations indicated that the kestrels had abandoned the nest. Subsequently, the heliostat was taken offline in the event this pair made another nesting attempt. All buffer signage and area activity restrictions were left in place. On May 21, the pair was observed in the nest area copulating, but there was no sign of egg lay by the end of May. The kestrels were monitored into June but no further nesting behavior was observed. On June 21, the area was declared inactive, signage buffers removed, and access restrictions lifted.

Off site, biologists conducting raven nest surveys observed and monitored six pairs of red-tailed hawks that began nesting in March, all in transmission towers located in the recipient areas. In late May and early June all six pairs successfully fledged a total of 13 nestlings (2,2,2,3,3,1).

The golden eagles occupying the Umberci Mine nesting territory were observed incubating eggs in early March, using the same nest as in 2014, more than 3.5 kilometers north of the unit 3 fence line. They successfully hatched in early April, and were observed feeding and brooding at least one nestling. However, by May 19 the nest was abandoned and considered failed.

Buffering nests with signage, flagging, and orange safety cones was an appropriate and clear demarcation to keep workers out of the area. Providing maps and location description of all nests aided in ensuring

disturbances of buffered nests did not occur. Going forward all active nests will be reported on a weekly basis to control room supervisors to ensure no nests are inadvertently disturbed by heliostat operations.

See the Map in Appendix C for location of nesting raptors in 2015.

4.7 Burrowing Owls BIO-16

Per the stipulations of COC BIO-16, no pre-construction surveys for burrowing owls were required or warranted on the ISEGS site in 2015. No visual or auditory detections were made of burrowing owls on the ISEGS site during 2015, and no photos of owls have been caught this year on motion sensor cameras placed at mammal burrows and shelter sites. No burrowing owl sign was found in 2015 by biological monitors on the site.

Off site, tortoise trackers made 13 observations of burrowing owls in 2015: 7 in the control areas, and 6 in the resident and translocated area which are also known as the recipient areas (See Figure 1). All sightings were of solitary birds, with the majority in January (5), October (3), and November (2).

No measures were undertaken for these species and therefore, no effectiveness evaluation is presented.

4.8 Desert Tortoise Compensatory Mitigation BIO-17

As part of the compensatory mitigation for desert tortoise, 50 miles of desert tortoise exclusion fence was required to be installed. The installation commenced along Interstates 15 and 40 in October 2015. Completion of the installation is anticipated in February of 2016. Once construction is complete the fence will be inspected and maintained by a third party with funds provided from an endowment for the compensatory mitigation. Habitat acquisition was completed through the California Department of Fish and Wildlife (CDFW) SB34 program in accordance with BIO-17. This program preserved in perpetuity over 7000 acres of wildlife habitat for various species, including desert tortoise. In addition, an endowment was established as part of the program to provide for the wildlife management on these lands in accordance with BIO-17.

August 28, 2013 marked the completion of restoring and habitat restoration of at least 50 routes within the Desert Wildlife Management Area managed by the BLM. During August and September of 2014 all fifty-one routes were inspected as part of an annual inspection and a report submitted to BLM on the findings of the inspection. On February 26, 2015 BLM confirmed the requirements of this condition were satisfied. Therefore, no further reporting is required.

4.9 Special-status Plant Impact Avoidance and Minimization BIO-18

A report summarizing the assessments of the mitigations measures is under a separate cover.

4.10 Streambed Impact Avoidance and Minimization BIO-20

See Appendix D for reports on change of biological conditions from 2015. Each of the reports satisfies this condition.

4.11 Bird or Bats Injuries and Fatalities BIO-21

Per the requirements of COC BIO-21, the Designated Biologist was informed of any avian or bat injury or fatality discovered on the site in 2015, and each incident was documented and reported as per the ABMMP. Per COC BIO-21 all listed bird or bat species or special-status species observed were submitted to the California Natural Diversity Data Base. The surveying, reporting, and data analysis for avian and bat injury and fatality were performed as prescribed in the ABMMP by H.T. Harvey and Associates and WEST Inc. The results of these are presented under separate cover.

4.11.1 Avian and Bat Monitoring and Management Plan (ABMMP)

Avian biologists and personnel from H.T. Harvey and Associates Ecological Consultants implemented the ABMMP through January 2015. During the month of February avian biologists and personnel from both H.T. Harvey and WEST Inc. worked together implementing the ABMMP while transitioning the responsibility for the ABMMP to WEST Inc. to take over the implementation of the ABMMP for the remaining of 2015. All results and actions, including deterrence measures are reported as part of the ABMMP and are provided under separate cover.

4.12 Desert Tortoises BIO-8, BIO-9, BIO-10

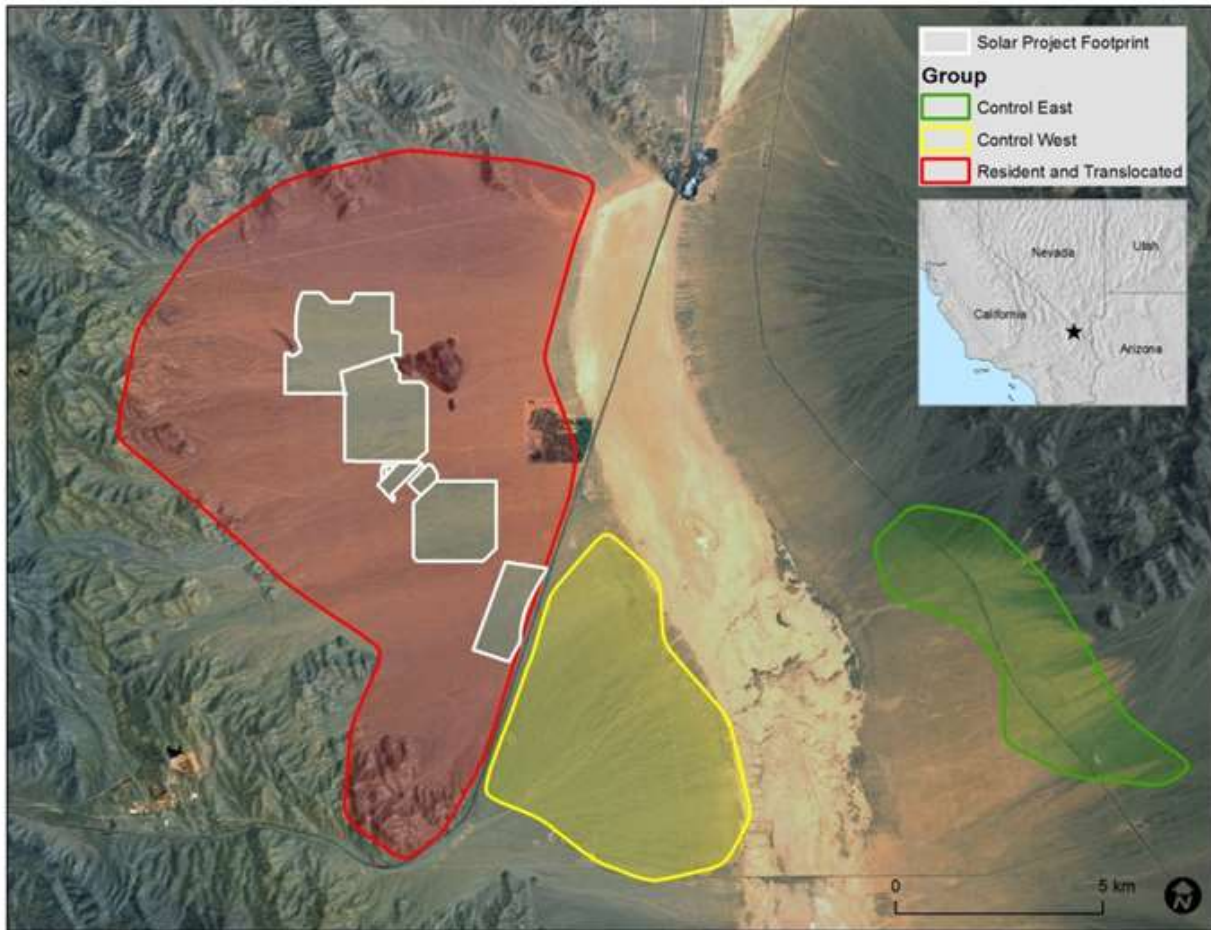
The following section describes the ISEGS desert tortoise best management practices that were prescribed as part of the CEC License Conditions and 2011 Revised Biological Opinion. ISEGS has also independently developed additional measures for tortoises.

Between October 2010 (ISEGS project construction start) and December 31, 2015, tortoises were numbered on the site and in the recipient and control areas as part of the project (Figure 1). Collectively those 515 tortoises will further be referred to as “monitored tortoises.” See Table 2 below for definitions of ISEGS monitored tortoise types. Monitored tortoises are broken down into three general groups: 1) **translocatee tortoises**, or numbered tortoises initially located within the site boundaries (234 total, includes long-distance translocation tortoises, short-distance translocation tortoises and Head Start tortoises (includes tortoises hatched in captivity)), 2) **resident tortoises**, or numbered tortoises initially located in the recipient area surrounding the site (125 total), and 3) **control tortoises**, or numbered tortoises initially located in the control area (156 total). Other tortoises that exist in the recipient and control areas will be referred to as “unmarked, unmonitored tortoises” throughout the report.

Table 2. Definition of ISEGS monitored tortoise types

Tortoise Type	Sub-Type	Definition
Translocated	Long-Distance Translocation	Numbered tortoises initially located within site boundaries whose mean location was greater than 500 meters from the perimeter fence.
Translocated	Short-Distance Translocation	Numbered tortoises initially located within site boundaries whose mean location was less than 500 meters from the perimeter fence
Translocated	Head Start	Numbered tortoises initially located within site boundaries with a straight mid-line carapace length (MCL) of less than 120 mm. Head Start tortoises include tortoises hatched in the holding pens.
Translocated	Never Tracked	Numbered tortoises initially located within the site boundaries with a straight mid-line carapace length (MCL) of less than 120mm after the commencement of commercial operations.
Resident		Numbered tortoises initially located in the recipient area surrounding the site.
Control		Numbered tortoises initially located in the control area.

Figure 1: Locations of ISEGS tortoise groups



18 of the 515 total monitored tortoises were not affixed with radio transmitters and thus are not technically monitored. Ten of those non-transmitted tortoises were numbered and not affixed with radio transmitters because they were only necessary for a one-time blood sampling effort and not for monitoring. Five of those non-transmitted tortoises were not transmitted because their carapaces were either too small or misshapen such that they could not hold a transmitter. The final three were juveniles found inside the project boundaries during operations. These tortoises were numbered, a health assessment completed, and released outside the project boundaries. See Table 3 below for a summary of monitored tortoises. Also note that these numbers include tortoises that died or were found dead initially. See the section on “Tortoise Fatalities” below for more information. See Appendix E for the ISEGS 2015 Desert Tortoise Disposition Table. See Maps in Appendix F for initial and current locations of all monitored tortoises.

Table 3. Summary of monitored tortoises

Tortoise Size and Sex	Translocatee	Resident	Control	Total
Male >159 mm MCL	44	61	66	171
Female >159 mm MCL	40	45	59	144
Sex Unknown >159 mm MCL	7	2	4	13
120-159 mm MCL	27	6	13	46
0-119 mm MCL	116*	11	14	141
Total	234	125	156	515

* Includes 57 tortoises hatched in captivity.

4.12.1 Tortoise Discoveries - 2015

One previously unmonitored juvenile tortoise was found in a cleared area in 2015. BS360 was translocated to the recipient site on April 22, 2015. See Table 4 below for details.

Table 4. New project tortoises inside project boundaries in 2015

Tort ID	Tortoise Type	Tortoise Status	Sex	Initial MCL	Initial Site	Initial Date
BS360	Translocatee (Short 2015)	Not Tracked	Unknown	102	Ivanpah 2	21-Apr-2015

4.12.2 Husbandry and the Holding Pens

In 2015, the holding pens (located in Construction Logistics Area West of the ISEGS project site) consisted of 84 (20 by 20 meter) adult tortoise pens, and 24 smaller (ten by ten meters) juvenile tortoise (Head Start) pens enclosed in a predator-proof facility. As of December 31, 2015, the holding pens housed 104 Head Start tortoises, six of which are missing. The successful hatching, monitoring, and protection of the juveniles in these pens document the success of these measures. The specifics of the Head Start program are described below.

4.12.3 Husbandry Protocols

In compliance with the Husbandry Plan developed for the ISEGS Project, desert tortoises moved to the holding pens within the Construction Logistics Area West were monitored daily by husbandry personnel.

The area around the pens was inspected for any sign of predators on a daily basis. Purified water and a combination of native forage and organic store-bought food (including dandelion greens, timothy hay and mixed with a calcium supplement) was provided to all penned tortoises from approximately March through October.

4.12.4 Head Start

The ISEGS Head Start facility was designed to house all live translocatee tortoises that were under 120 mm MCL at the time of capture (68 tortoises) and all tortoises that hatched in captivity in 2011 (39 tortoises). The Head Start tortoises will be released per the requirements of the 2011 Revised Biological Opinion into the recipient area in cohorts of 30 as they reach 120 mm MCL, or in five years whichever comes first. The Head Start facility is located within the holding pen area and is comprised of two structures containing 24 ten by ten meter pens. Metal flashing surrounds each pen and contains man-made tortoise burrows constructed of perforated PVC pipe. The entire facility is surrounded by chain-link fence and was covered in netting to prevent predation by birds and mammals.

Fourteen Head Start tortoises that had originally hatched in the holding pens were permanently transferred to the Mojave National Preserve Head Start facility on April 26 and 27, 2012, per instructions by the BLM and USFWS reducing the number of hatched-in-captivity tortoises on site from 53 to 39.

4.12.5 Desert Tortoise Health Analyses and ELISA Testing

Per the requirements of the 2011 Revised Biological Opinion, health analyses were conducted on all transmitterd monitored tortoises (translocated, recipient and control) twice per year. The prevalence of *Mycoplasma agassizii* and *Mycoplasma testudineum* in the population of tortoises associated with the ISEGS project was unknown before the project began.

Both spring and fall health assessments were conducted on the majority of monitored tortoises. A typical health assessment included a visual evaluation for clinical signs of disease (as determined by a data form created by the USFWS specifically for tortoise translocations associated with solar projects), size measurements, and photos. For animals over 100 grams, a series of specimen samples including blood and oral swabs were collected and sent to laboratories for analysis. Blood samples were spun down in centrifuges to separate plasma from red blood cells. The plasma was sent to the University of Florida for ELISA testing. ELISA tests to detect antibodies for both *M. agassizii* and *M. testudineum* were conducted. For *M. agassizii* titer levels of less than 32 were considered negative for exposure; titer levels of 32 were suspect and titer levels greater than 32 were positive. For *M. testudineum* titer levels of less than 32 were negative, 32 and 64 suspect, and 128 and greater positive. The ELISA results from the

health assessments are being used as part of the Effectiveness Monitoring Program required by the 2011 Revised Biological Opinion. See Appendix G for ELISA Results for 2015

4.12.6 Translocations

During 2015, continued monitoring of all translocated tortoises occurred. Three types of translocations have and/or will happen at ISEGS: 1) short-distance translocation, 2) long-distance translocation and 3) Head Start translocation. The Head Start translocation process was detailed above in the section entitled “Head Start Program.” The 2011 Revised Biological Opinion requires an investigation of the drivers of post-translocation survival. The results of these mitigation measures continue to be monitored and evaluated.

4.12.7 Short-Distance Translocations

Short-distance translocation refers to the translocation method employed for the tortoises (>120 mm MCL) whose known home range center was located less than 500 meters from the ISEGS perimeter fence. All translocated tortoises were tracked per the requirements of the 2011 Revised Biological Opinion and ISEGS Desert Tortoise Translocation Plan Revision 5.1.

4.12.8 Long-Distance Translocation

Long-distance translocation refers to the translocation method employed for the tortoises greater than 120 mm MCL whose known home range center was located greater than 500 meters from the ISEGS perimeter fence. Those tortoises were translocated into a long-distance translocation pen per the requirements of the ISEGS Desert Tortoise Translocation Plan, the 2011 Biological Opinion and the Conditions of Certification on September 23, 2012.

All translocated tortoises were tracked per the requirements of the 2011 Revised Biological Opinion and ISEGS Desert Tortoise Translocation Plan.

4.12.9 Tortoise Fatalities

See Appendix H for a summary and map of all monitored tortoises that died in 2015. There were a total of 10 fatalities in 2015. Of these 10 fatalities 4 were control tortoises, 4 resident tortoises, 1 translocated tortoise, and 1 head start tortoise.

Since the translocation commenced in the spring of 2012 a total of 54 tortoise fatalities have been discovered among the monitored tortoises in the control and recipient areas. Of the 54 tortoises 18 were control tortoises, 17 resident tortoises, and 19 translocated tortoises.

4.13 Precipitation Events and Fence Monitoring

Precipitation events were recorded several times during 2015. These events are detailed in Table 5. Immediately following each storm, after the cessation of runoff, site fences were inspected and designated biologist and biological monitors worked to temporarily repair any breach and remove debris from tortoise guards. As a result, following each event, the fence integrity was restored sufficiently to prevent tortoise from accessing the cleared areas. Therefore, tortoises did not have the opportunity to enter the site as a result of these measures. All rain data presented in Table 5 was obtained from the weather station located at the quarantine pens.

Table 5: ISEGS Precipitation Data for 2015

DATE	Jan-2015	Feb-2015	Mar-2015	Apr-2015	May-2015	Jun-2015	Jul-2015	Aug-2015	Sep-2015	Oct-2015	Nov-2015	Dec-2015
	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1	0	0	0.24	0	0	0	0.14	0	0	0	0	0
2	0	0	0.12	0	0	0	0.01	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0.16	0	0	0	0	0	0.18	0
5	0	0	0	0	0	0	0.01	0	0	0.52	0	0
6	0	0	0	0	0	0	0.97	0	0	0.01	0	0
7	0	0	0	0	0	0	0.17	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0.47	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0.03	0	0	0	0.08
14	0	0	0	0	0	0	0	0.03	0	0	0	0.04
15	0	0	0	0	0	0	0	0	0.09	0.07	0.05	0
16	0	0	0	0	0	0	0	0	0	0.33	0.07	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0.04	0	0.05	0	0	0.18	0	0
19	0	0	0	0	0	0	0.08	0	0	0	0	0
20	0	0	0	0	0	0	0.07	0	0	0	0	0.03
21	0	0	0	0	0	0	0	0	0	0	0	0.01
22	0	0.18	0	0	0	0	0	0	0	0	0	0
23	0	0.55	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0.14	0	0	0	0.06	0	0	0	0
26	0.20	0	0	0.00	0	0	0	0.09	0	0	0	0
27	0.03	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0.2	0	0	0	0
29	0		0	0	0	0	0	0	0	0.03	0	0
30	0.41		0	0	0	0	0.01	0	0	0	0	0
31	0.01		0		0		0.23	0		0		0
MTD	1.12	0.73	0.36	0.14	0.20	0.00	1.74	0.41	0.09	1.14	0.30	0.16
YTD	6.39											

In accordance with the 2011 Revised Biological Opinion and the project COCs, all tortoise proof fences and tortoise guards on site were checked twice monthly and after significant rain events for breaches by the designated biologist or biological monitor. When fence breaches were identified, they were temporarily repaired by the biologist immediately to maintain the integrity of the fence, and reported to NRG Energy Operations for permanent repair. Issues that had not been addressed in a timely manner with permanent repairs were reported in the monthly fence report. As a result, the integrity of the fence was maintained throughout 2015. The practices associated with monitoring and fence repair are therefore effective.

4.14 Miscellaneous

Monitors captured venomous snakes within the project boundaries that were reported by operations personnel and sub-contractors. They were relocated nearby, but outside the site perimeter. Non-venomous snakes found in harm's way were relocated a short distance away from their capture location, within the project boundary. If not in danger, non-venomous snakes were not relocated.

5.0 Summary of Data

BIO-11 requires an annual report summarizing all available data (species of carcass, date and location collected, and cause of death) describing bird and other carcasses collected within the project site each year. As previously noted, avian data is provided under separate cover. This section provides the details of all mammal fatalities discovered at the site in 2015. Tortoise fatalities were reported previously in Section 4.12.9.

5.1 Mammal Fatalities

At approximately 17:20 hours on January 8, 2015 a call was received on the designated biologist number indicating an injured kit fox was observed on the haul road to Ivanpah 3. A biologist responded to the call and arrived at the kit fox at approximately 17:30 hours. The kit fox was lying in the road (11S 0637688E 3936370N, NAD83). As the biologist approached the kit fox it lifted its head and then moved approximately 1 meter before lying back down in the road. The biologist captured and placed the adult, male kit fox in a pet carrier without incident at 17:42 hours. The kit fox was taken to an indoor office space but remained inside the pet carrier. It died at 18:31 hours at which time it was placed in a sealed bag inside of a refrigerator and moved to a freezer the following day. The carcass was sent to California Department of Fish & Wildlife – Wildlife Investigations Lab.

On August 8, 2015 at approximately 08:25 hours a biologist completing a routine fence line check on lower Colosseum Road found a dead juvenile kit fox in the bottom of a tortoise guard (11S 0640716E

3935361N, NAD83). Upon discovery the designated biologist was contacted. The juvenile kit fox shows no signs of external trauma. The fox appeared thin and in poor body condition. No road marks or any evidence was found to indicate a vehicle collision. The suspected cause of death is unknown. The estimated time since death occurred was less than 1 week. The carcass was sent to California Department of Fish & Wildlife – Wildlife Investigations Lab.

On September 16, 2015 a biologist conducting bird mortality surveys in Unit 2 found a dead kit fox in the solar field (11S 638936E 3936771N, NAD83). Upon discovery the designated biologist was contacted. The kit fox appeared to have been deceased for a long period as evidenced by the mummified condition of the carcass. The discovery was not near a major road and no cause of death could be determined. Time since death occurred was estimated more than 1 month. The carcass was sent to California Department of Fish & Wildlife – Wildlife Investigations Lab.

See Appendix I for map of mammal fatality locations in 2015.

5.2 Wildlife Fatalities

Per the Raven Management Plan BIO-12 all carcasses of small mammals (rabbits and rodents) and reptiles observed in the project area and along access roads were promptly removed by a biological monitor and disposed of in a dumpster with a secured top so that they were not accessible to ravens or other scavengers. The following is a summary of dead wildlife collected on roads or adjacent to roads during 2015.

- 23 Black-tailed jackrabbit
- 1 Kangaroo rat
- 1 Sidewinder rattlesnake
- 2 Mojave rattlesnakes
- 1 Coach whip snake
- 1 Gopher snake
- Several Whiptail lizards

Appendix A

Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) Tracking Table

**Table A- 1
Biological Resources Mitigation Implementation and Monitoring Plan Tracking Table**

Event Description	Expected Dates and Essential Biological Resource Protection Measures	Date Completed
No. 1: Certification by CEC	Expected Date is September 22, 2010 by CEC, and October 6, 2010 by BLM	9/22/2010 & 10/7/2010
Preliminary Stage (Fence)		
No. 2: Biologists and botanists field preparation	July 2010 – September 2010	
	<i>Wildlife: Assemble materials required for clearance surveys and translocating tortoises. Includes fiber-optic scopes, tortoise tags. Obtain approval for Designated Biologists (DM) and Biological Monitors (BM).</i>	9/30/2010
	<i>Plants: During pre-construction, plant activities will include the following: Avoid impacts to rare plants by excluding from the project area a 433-acre area in the northernmost portion of Ivanpah 3 that is densely populated with rare plants; establish two additional Rare Plant Mitigation Areas in the CLA within which direct impacts to rare plants will be completely avoided; demark and/or fence Mojave milkweed and Rusby's desert mallow rare plant localities proposed for avoidance within the heliostat array to protect the rare plants from direct impacts during pre-construction and construction activities; salvage individual Mojave milkweed and Rusby's desert mallow plants that cannot be avoided for use in translocation, revegetation, and rehabilitation; salvage of all rare cactus (desert pincushion and Parish's club-cholla) onsite for use in translocation, revegetation, and rehabilitation.</i>	11/1/2010
No. 3: Site and Construction Logistics Area (CLA) staked by land surveyors	July 2010 - September 2010	9/30/2010 for areas subject to construction in Phase I
	<i>Administer WEAP (refer to attached BIO-6 Worker Environmental Awareness Program).</i>	9/30/2010
	<i>Wildlife: Survey vehicles to remain on existing roads.</i>	9/30/2010
No. 4: Improved Colosseum Road location staked by land surveyors	July 2010 - September 2010	

Event Description	Expected Dates and Essential Biological Resource Protection Measures	Date Completed
	<i>Administer WEAP (refer to attached BIO-6 Worker Environmental Awareness Program).</i>	9/30/2010
	<i>Wildlife: Survey vehicles to remain on existing roads.</i>	9/30/2010
No. 5: Weed inspection station established	October 2010 – May 2013	10/6/2010
	<i>Plants: A weed inspection station will be established on the first day of construction. Until the permanent facility is operational (see No. 26) vehicles that require washing will be monitored by security staff and turned back to be washed in Primm before returning to the site. A vehicle log will be included in monthly compliance reports.</i>	10/6/2010
No. 6: 10-foot-wide internal perimeter road (within the staked fence line) is cleared of vegetation and graded	October 2010 – November 2010 (for Phase I of construction)	11/30/2010
	<i>Continue to administer WEAP to all new personnel at site or all subsequent events.</i>	Ongoing
	<i>Administer WEAP (refer to attached BIO-6 Worker Environmental Awareness Program).</i>	11/30/2010
	<i>Wildlife:</i>	
	<i>An AB or BM will be onsite during installation of the temporary desert tortoise fence. If installation of temporary fencing, surveying or clearing is occurring at more than one location, more than one AB may need to be onsite to provide appropriate supervision. After installation of this temporary fencing and prior to initiation of construction activities, an AB and/or BM will perform a pre-construction sweep for desert tortoises. An AB will relocate any desert tortoises found in the project impact area. Desert tortoises will be moved to suitable habitat (at least 300 feet from the project site) outside the impact area and placed in a natural or artificial burrow or under a shrub, depending on time of day and year. An AB will also be available to relocate any desert tortoises that may wander into the impact area during construction. All ABs or BMs will have a copy of the Biological Opinion (Attachment B), Translocation Plan (BIO-9 attached), and be familiar with the COC BIO-11 all activities involving desert tortoise clearance surveys, handling, health assessments, and other related translocation activities.</i>	11/30/2010

Event Description	Expected Dates and Essential Biological Resource Protection Measures	Date Completed
	<i>Concurrent with start of perimeter fencing, construct minimum of 16 desert tortoise holding pens for use in quarantining tortoise removed from Ivanpah 1 and the CLA.</i>	11/30/2010
	<i>Plants: Concurrent with start of perimeter fencing, botanists will install protective fencing for rare plants and salvage any rare plants within the fence line corridor. Environmentally Sensitive Areas (ESAs) will be marked with signs.</i>	11/30/2010
No. 7: Temporary (stand alone) tortoise fence installed on perimeter of Ivanpah 1	September 2010 – October 2010	10/29/2010
	<i>Administer WEAP (refer to attached BIO- 6 Worker Environmental Awareness Program)..</i>	10/29/2010
	<i>Wildlife: An AB or BM will be onsite during installation of the temporary desert tortoise fence. If installation of temporary fencing, surveying or clearing is occurring at more than one location, more than one AB may need to be onsite to provide appropriate supervision. After installation of this temporary fencing and prior to initiation of construction activities, an AB and/or BM will perform a pre-construction sweep for desert tortoises. An AB will relocate any desert tortoises found in the project impact area. Desert tortoises will be moved to suitable habitat (at least 300 feet from the project site) outside the impact area and placed in a natural or artificial burrow or under a shrub, depending on time of day and year. An AB will also be available to relocate any desert tortoises that may wander into the impact area during construction. All ABs or BMs will have a copy of the Biological Opinion (Attachment B), Translocation Plan (BIO-9 attached), and be familiar with the COC BIO-11 for all activities involving desert tortoise clearance surveys, handling, health assessments, and other related translocation activities.</i>	11/4/2010
	<i>Plants: Botanists continue installation of protective fencing for rare plants and salvage plants within the fence line corridor. Environmentally Sensitive Areas (ESAs) will be marked with signs.</i>	10/29/2010
No. 8: Permanent security/Combo fence installed on perimeter of Ivanpah 1	September 2010 – December 2010	12/31/2010
	<i>Wildlife: Same as No. 7. Construction crews will require monitoring by DB/BMs until the fence installation is complete.</i>	12/31/2010

Event Description	Expected Dates and Essential Biological Resource Protection Measures	Date Completed
	<i>Plants: Botanists continue installation of protective fencing for rare plants and salvage plants within the fence line corridor.</i>	10/29/2010
No. 9: Tortoise exclusion fence installed along Colosseum Road	September 2010 – October 2010	10/29/2010
	<i>Wildlife: An AB or BM will be on site during installation of the fence.</i>	10/29/2010
No. 10: Area within fenced perimeters of Ivanpah 1, and later Ivanpah 2 and 3, is completed	Ivanpah 1 and CLA: October 2010; Ivanpah 2: September 2011; Ivanpah 3: September-October 2011	Ivanpah 1 and CLA: 11/4/2010; Ivanpah 2: 9/28/2011; Ivanpah 3: 10/10/2011
	<i>Wildlife: Within 24 hours prior to the initiation of construction of the desert tortoise-exclusion fence, a desert tortoise survey would be conducted by DB/BMs of those linear areas using techniques providing 100-percent coverage of the construction area and an additional transect along both sides of the fence line transect to provide coverage of an area approximately 90 feet wide, centered on the fence alignment. Transects would be no greater than 30 feet apart. Two passes of complete coverage would be conducted. All desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, would be examined to determine occupancy. Any burrow within the fence line corridor would be collapsed after confirmation that a desert tortoise does not occupy it, or if occupied, the desert tortoise has been removed.</i>	Ivanpah 1 and CLA: 11/4/2010; Ivanpah 2: 9/28/2011; Ivanpah 3: 10/10/2011
	<i>Within 72 hours after the area to be cleared is fully enclosed with tortoise exclusion fencing, a desert tortoise clearance survey would be initiated per USFWS protocol (USFWS 1992) and project specific Guidelines (USFWS 2008). At least three complete clearance sweeps with 100 percent coverage would be conducted as described above. Each separate survey would be walked in a perpendicular direction to allow opposing angles of observation. The area will be considered clear after two complete passes have discovered no new desert tortoises. All ABs or BMs will have a copy of the Biological Opinion (Attachment B), Translocation Plan (BIO-9 attached), and be familiar with the COC BIO-11 for all activities involving desert tortoise clearance surveys, handling, health assessments, and other related translocation activities.</i>	Ivanpah 1 and CLA: 11/4/2010; Ivanpah 2: 9/28/2011; Ivanpah 3: 10/10/2011

Event Description	Expected Dates and Essential Biological Resource Protection Measures	Date Completed
	<p><i>Conduct concurrent clearance surveys for burrowing owls (BIO-16), Gila monsters and badger (BIO-11).</i></p>	<p>Ivanpah 1 and CLA: 11/4/2010; Ivanpah 2: 9/28/2011; Ivanpah 3: 10/10/2011</p>
	<p><i>Note: Nesting bird surveys (BIO-15) are required if construction occurs between February 1 and August 31.</i></p>	<p>2/1/2012 – 8/31/2012</p>
<p>No. 11: Ivanpah 1, and later Ivanpah 2 and 3, is completed -- <i>CONTINUED</i></p>		
	<p><i>Plants: Monitoring activities specific to special-status plants include: the Designated Biologist will oversee the salvage and transplantation of special-status plants designated on final project plans as "salvage". Salvaged plants will be installed in the Rare Plant Transplantation Area (RPTA); regular inspections of salvaged plants placed in the RPTA will be conducted by the Botanical Monitors to check that salvaged plants are watered and maintained as needed to maximize survivorship throughout the construction period; salvaged native plants that are stored offsite in a native plant nursery, will also be inspected by the Botanical Monitor to document that plants are maintained in good condition; the Botanical Monitor will oversee construction to confirm that no unauthorized construction activities occur in Rare Plant Avoidance Areas (RPAAs); inspections of all fenced special-status plants within the heliostat array will be conducted by the Botanical Monitor to document that avoidance fencing is maintained in good condition; fencing surrounding the Rare Plant Mitigation Areas will be inspected regularly to check that fencing is maintained in good condition; the Botanical Monitor will monitor general construction activities for compliance with regulatory terms and conditions that pertain to special-status plants; and the Botanical Monitor will notify the project owner, BLM's Authorized Officer, and the CPM of any noncompliance with any biological resources condition of certification.</i></p>	<p>5/31/2014</p>
<p>Construction of Fiber-optic and Gas Lines</p>		
<p>No. 12: Fiber-optic line construction</p>	<p>April 2011 – July 2012</p>	<p>7/2/2012</p>
	<p><i>Wildlife: DB/BMs clear area of all desert tortoises immediately prior to construction and monitor construction.</i></p>	<p>7/2/2012</p>

Event Description	Expected Dates and Essential Biological Resource Protection Measures	Date Completed
No. 13: Gas line construction	March 2011 – December 2013	12/10/2013
	<i>Wildlife: DB/BMs clear area of all desert tortoises immediately prior to construction and monitor construction outside of fenced perimeter.</i>	12/10/2013
	<i>Plants: Prior to construction, survey and salvage special-status plants and common succulents within the linear right-of-way and sub-station and transplant to onsite nurseries. Monitor the adjacent mitigation areas to ensure construction does not intrude or extend beyond the right-of-way.</i>	12/10/2013
Preliminary Stage (Fence) of Ivanpah 2 and 3		
No. 14: 10-foot-wide internal perimeter road (within the staked fence line) is cleared of vegetation and graded	October 2011 – January 2011	1/5/2012
	<i>Continue to administer WEAP of all new personnel at site or all subsequent events (refer to attached BIO-6 Worker Environmental Awareness Program).</i>	Ongoing
	<i>Wildlife: Same as No. 6</i>	1/5/2012
	<i>Plants: Same as No. 6</i>	1/5/2012
No. 15: Perimeter fence construction in Ivanpah 2	March 2011 – June 2012	6/6/2012
	<i>Wildlife: Same as No. 7 and No.8.</i>	6/6/2012
	<i>Plants: Same as No. 7 and No.8</i>	6/6/2012
No. 16: Perimeter fence construction Ivanpah 3	March 2011 – June 2012	6/13/2012
	<i>Wildlife: Same as No. 7 and No.8.</i>	6/13/2012
	<i>Plants: Same as No. 7 and No.8</i>	6/13/2012
Site Development Stage (Primarily inside fenced areas)		

Event Description	Expected Dates and Essential Biological Resource Protection Measures	Date Completed
No. 17: Rough Grading of sites	Ivanpah 1 & Common areas: November 2010 – February 2011	2/1/2011
	Ivanpah 2: January 2011 – April 2011	4/1/2011
	Ivanpah 3: April 2011 – June 2011	8/31/2011
	<i>Wildlife: A Biological Monitor will be on site during initial grading to ensure no tortoises remain on the site. If a tortoise is found it will be translocated as previously described.</i>	8/31/2011
	<i>Conduct concurrent clearance surveys for burrowing owls (BIO-16), Gila monsters and badger (BIO-11).</i>	8/31/2011
	<i>Note: Nesting bird surveys (BIO-15) are required if construction occurs between February 1 and August 31.</i>	2/1/2012-8/31/2012
	<i>Plants: Rare plant protection areas, ESAs and RPAA's monitored to ensure construction activities don't intrude. Monitor for newly established special-status species and salvage and transplant to on site nurseries.</i>	5/31/2014
No. 18: Pads, parking areas and construction laydown areas graded if needed, and construction trailers moved to locations within the CLA	November 2010 – January 2011	1/24/2011
	<i>Wildlife: No biological monitoring required for wildlife for these construction activities as long as all of the previously described construction events have occurred (e.g., perimeter fence installed) and resources protection measures have been implemented. Monitoring of overwintering tortoises in holding pens will be ongoing.</i>	5/31/2014
	<i>Plants: Same as No. 17</i>	5/31/2014
No. 19: Locations of roads, buildings and structures staked by land surveyors	November 2010 – May 2013	5/31/2014
	<i>Wildlife: No biological monitoring required for wildlife as long as all of the previously described construction events have occurred (e.g., perimeter fence installed) and resources protection</i>	5/31/2014

Event Description	Expected Dates and Essential Biological Resource Protection Measures	Date Completed
	<i>measures have been implemented.</i>	
No. 20: Grading of power block, building pads, internal roads and solar field (as necessary)	Ivanpah 1 & Common: November 2010 - October 2011	10/10/2011
	Ivanpah 2: January 2011 – November 2011	11/3/2011
	Ivanpah 3: April 2011 – June 2012	6/5/2012
	<i>Wildlife: No biological monitoring required for wildlife as long as all of the previously described construction events have occurred (e.g., perimeter fence installed) and resources protection measures have been implemented.</i> <i>(Note: Biological monitoring required as per Biological Opinion)</i>	5/31/2014
	<i>Plants: Same as No. 17</i>	5/31/2014
No. 21: Vegetation mowed to within 10-12 inches of ground surface	Ivanpah 1, CLA, Ivanpah 2, and Ivanpah 3: December 2010 – November 2012	11/22/2012
	<i>Wildlife: No biological monitoring required for wildlife as long as all of the previously described construction events have occurred (e.g., perimeter fence installed) and resources protection measures have been implemented.</i> <i>(Note: Biological monitoring required as per Biological Opinion)</i>	Ongoing as per biological opinion
	<i>Plants: Same as No. 17</i>	Ongoing
No. 22: Colosseum Road graded and paved from golf course to plant	October 2010 – November 2010	July 2011
	<i>Wildlife: DB/BMs clear fenced area of all desert tortoises prior to construction.</i>	11/3/2010
	<i>Plants: No rare plants are located along Colosseum Road.</i>	N/A
No. 23: Internal roads graded, graveled, or	Ivanpah 1: October 2010 – November 2012	9/12/2013

Event Description	Expected Dates and Essential Biological Resource Protection Measures	Date Completed
paved		
	Ivanpah 2: January 2011- February 2013	11/18/2013
	Ivanpah 3: April 2011 – February 2013	12/4/2013
	<i>Wildlife: No biological monitoring required for wildlife as long as all of the previously described construction events have occurred (e.g., perimeter fence installed) and resources protection measures have been implemented.</i> <i>(Note: Biological monitoring required as per Biological Opinion)</i>	Ongoing as per biological opinion
	<i>Plants: Same as No. 17</i>	Ongoing
No. 24: Power equipment and materials brought onsite	November 2010 – May 2014	5/31/2014
	<i>Wildlife: No biological monitoring required for wildlife as long as all of the previously described construction events have occurred (e.g., perimeter fence installed) and resources protection measures have been implemented.</i>	5/31/2014
	<i>Plants: No monitoring necessary required for plants as long as all of the previously described construction events have occurred and resources protection measures have been implemented.</i>	5/31/2014
No. 25: Fabrication shops erected	November 2010 – June 2011	6/28/2011
	<i>Wildlife: No biological monitoring required for wildlife as long as all of the previously described construction events have occurred (e.g., perimeter fence installed) and resources protection measures have been implemented.</i>	6/28/2011
	<i>Plants: Same as No. 24</i>	6/28/2011
No. 26: Permanent wheel-washing station established	January 2011 - June 2011	6/30/2011
	<i>Wildlife: No biological monitoring required for wildlife as long as all of the previously described construction events have occurred (e.g., perimeter fence installed) and resources protection</i>	6/30/2011

Event Description	Expected Dates and Essential Biological Resource Protection Measures	Date Completed
	<i>measures have been implemented.</i>	
	<i>Plants: Same as No. 24</i>	6/30/2011
No. 27: Power block excavated and foundations poured	Ivanpah 1: February 2011 – April 2012	4/3/2012
	Ivanpah 2: April 2011 – July 2012	7/24/2012
	Ivanpah 3: June 2011 - May 2012	5/31/2012
	<i>Wildlife: No biological monitoring required for wildlife as long as all of the previously described construction events have occurred (e.g., perimeter fence installed) and resources protection measures have been implemented.</i>	5/31/2012
	<i>Plants: Same as No. 24</i>	5/31/2012
No. 28: Installation of underground piping and wiring	Ivanpah 1: December 2010 - May 2012	5/22/2012
	Ivanpah 2: February 2011 - April 2013	4/24/2013
	Ivanpah 3: April 2011 - September 2013	9/19/2013
	<i>Wildlife: No biological monitoring required for wildlife as long as all of the previously described construction events have occurred (e.g., perimeter fence installed) and resources protection measures have been implemented.</i>	9/19/2013
	<i>Plants: Same as No. 24</i>	9/19/2013
No. 29: Construction of power block	Ivanpah 1: February 2011 – December 2013	12/30/2013
	Ivanpah 2: April 2011 – December 2013	12/31/2013
	Ivanpah 3: September 2011 – December 2013	12/31/2013
	<i>Wildlife: No biological monitoring required for wildlife as long as all of the previously described construction events have occurred (e.g., perimeter fence installed) and resources protection measures have been implemented.</i>	12/31/2013

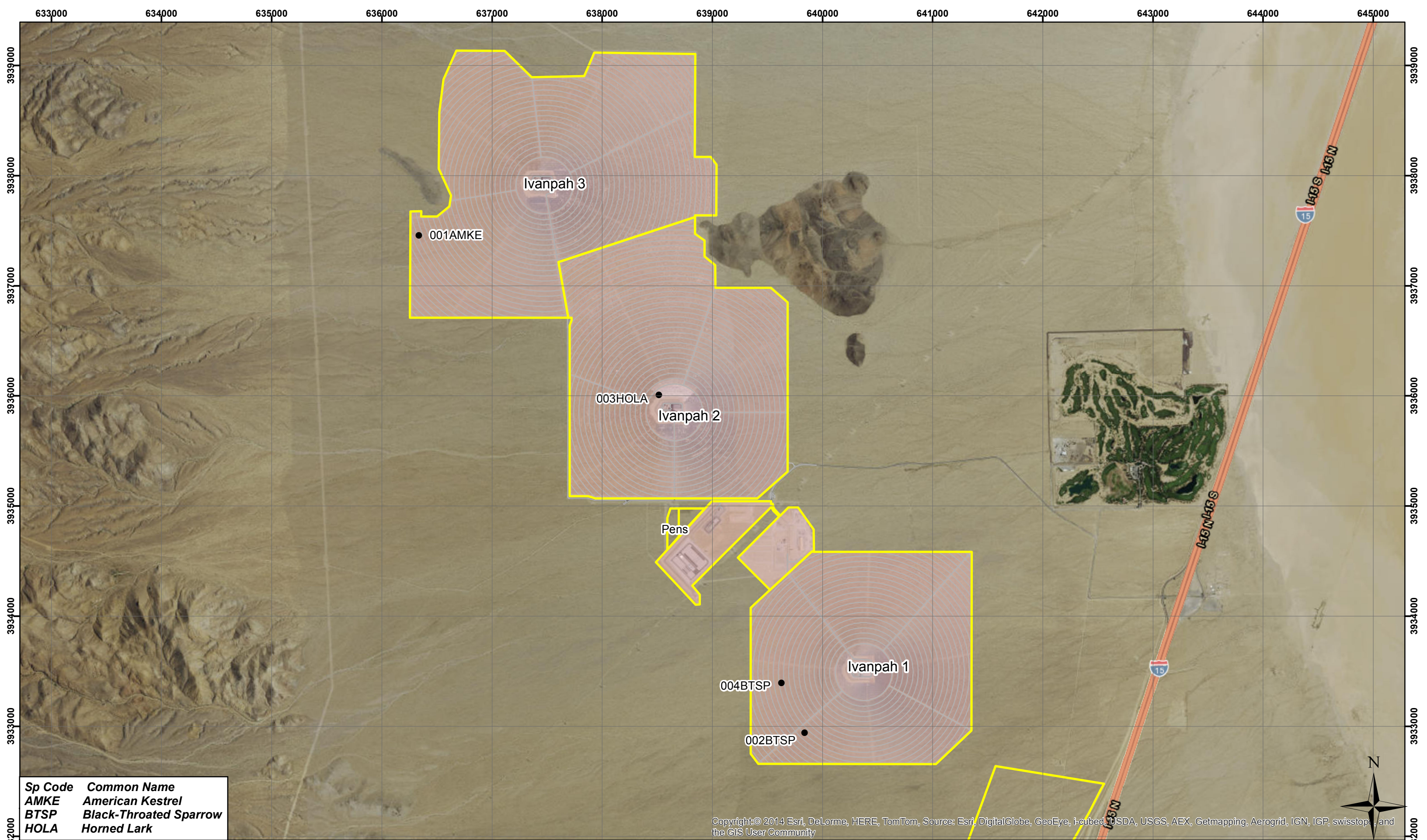
Event Description	Expected Dates and Essential Biological Resource Protection Measures	Date Completed
	<i>Plants: Same as No. 24</i>	12/31/2013
No. 30: Heliostat materials brought onsite	February 2011- September 2013	9/30/2013
	<i>Wildlife: No biological monitoring required for wildlife as long as all of the previously described construction events have occurred (e.g., perimeter fence installed) and resources protection measures have been implemented.</i>	9/30/2013
	<i>Plants: Same as No. 24</i>	9/30/2013
No. 31: Construction of Administration/warehouse use building	February 2011 – November 2012	11/7/2012
	<i>Wildlife: No biological monitoring required for wildlife as long as all of the previously described construction events have occurred (e.g., perimeter fence installed) and resources protection measures have been implemented.</i>	11/7/2012
	<i>Plants: Same as No. 24</i>	11/7/2012
No. 32: Construction of heliostat field	Ivanpah 1: March 2011 - December 2012	12/17/2012
	Ivanpah 2: May 2011 - September 2013	9/10/2013
	Ivanpah 3: May 2012 - October 2013	10/7/2013
	<i>Wildlife: No biological monitoring required for wildlife as long as all of the previously described construction events have occurred (e.g., perimeter fence installed) and resources protection measures have been implemented.</i>	10/7/2013
	<i>Plants: Rare plant protection areas, ESAs and RPAs monitored to ensure construction activities don't intrude. Monitor for newly established special-status species and salvage and transplant to on-site nurseries.</i>	10/7/2013
Solar plant construction	Ivanpah 1 December 2010 – January 2013	9/20/2013
	<i>Implement all of the preceding measures for construction.</i>	5/31/2014

Event Description	Expected Dates and Essential Biological Resource Protection Measures	Date Completed
Solar plant construction	Ivanpah 2 January 2011 – April 2013	12/15/2013
	<i>Implement all of the preceding measures for construction.</i>	5/31/2014
Solar plant construction	Ivanpah 3 July 2011 – August 2013	12/6/2013
	<i>Implement all of the preceding measures for construction.</i>	5/31/2014
Removal/Restoration Phase		
Construction completed, all construction equipment and temporary buildings removed.	March 2013 - November 2013	11/30/2013
	<i>Wildlife: The permanent exclusion fencing would be inspected bimonthly (i.e., every other month) and after major rainfall events</i>	Ongoing
	<i>Plants: Areas used for construction that are no longer required for operation are restored per the Closure, Revegetation and Rehabilitation Plan. Special-status plant monitoring will be conducted within the RPAAs.</i>	Ongoing
Operation (Inside fenced areas)		
	Life of the project (45 Years)	Ongoing
	<i>WEAP repeated annually for permanent employees, and will be routinely administered within one week of arrival to any new construction personnel.</i>	Ongoing
	<i>Wildlife: The permanent exclusion fencing is inspected bimonthly (i.e., every other month) and after major rainfall events.</i>	Ongoing
	<i>Implement ongoing measures of Raven Management Plan (BIO-12).</i>	Ongoing
	<i>Implement ongoing measures of Tortoise Translocation Plan. Monitoring and adaptive management measures for first 3 years of operation (see BIO-9 and Biological Opinion).</i>	Ongoing

Event Description	Expected Dates and Essential Biological Resource Protection Measures	Date Completed
	<i>Implement ongoing measures of Avian and Bat Monitoring and Management Plan (BIO-21)</i>	Ongoing
	<i>Plants: Maintain nursery plants. Special-status plant monitoring will be conducted within the RPAAs. An adaptive management approach will be used during long-term monitoring as per BIO-14.</i>	Ongoing
Maintenance (Inside and outside of fenced areas)		
Class I activities (do not result in surface disturbance)	Life of the project (45 Years)	Ongoing
	<i>Wildlife: DM/BM administers WEAP and monitors activity outside of fenced area that requires vehicles or construction equipment.</i>	Ongoing
Class II activities (results in minimal surface disturbance)	Life of the project (45 Years)	Ongoing
	<i>Wildlife: DM/BM administers WEAP and monitors activity outside of fenced area that requires vehicles or construction equipment</i>	Ongoing
	<i>Plants: Minimize new disturbance – avoid vegetation.</i>	Ongoing
Class III activities (result in new, major, surface disturbance outside of fenced areas)	Life of the project (45 Years)	Ongoing
	<i>Wildlife: Implement measures established for construction activities outside of fenced areas.</i>	Ongoing
	<i>Plants: Implement appropriate measures in the Closure, Revegetation and Rehabilitation Plan (BIO-14).</i>	Ongoing
Facility Closure		
Decommissioning.	45 years from project's start of operation	Not started
	<i>Implement measures of the Closure, Revegetation and Rehabilitation Plan (BIO-14)</i>	Not started

Appendix B

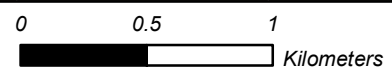
Map of ISEGS 2015 Nesting Bird Locations



Sp Code	Common Name
AMKE	American Kestrel
BTSP	Black-Throated Sparrow
HOLA	Horned Lark

Nesting Birds
 Ring Roads

Site Boundary

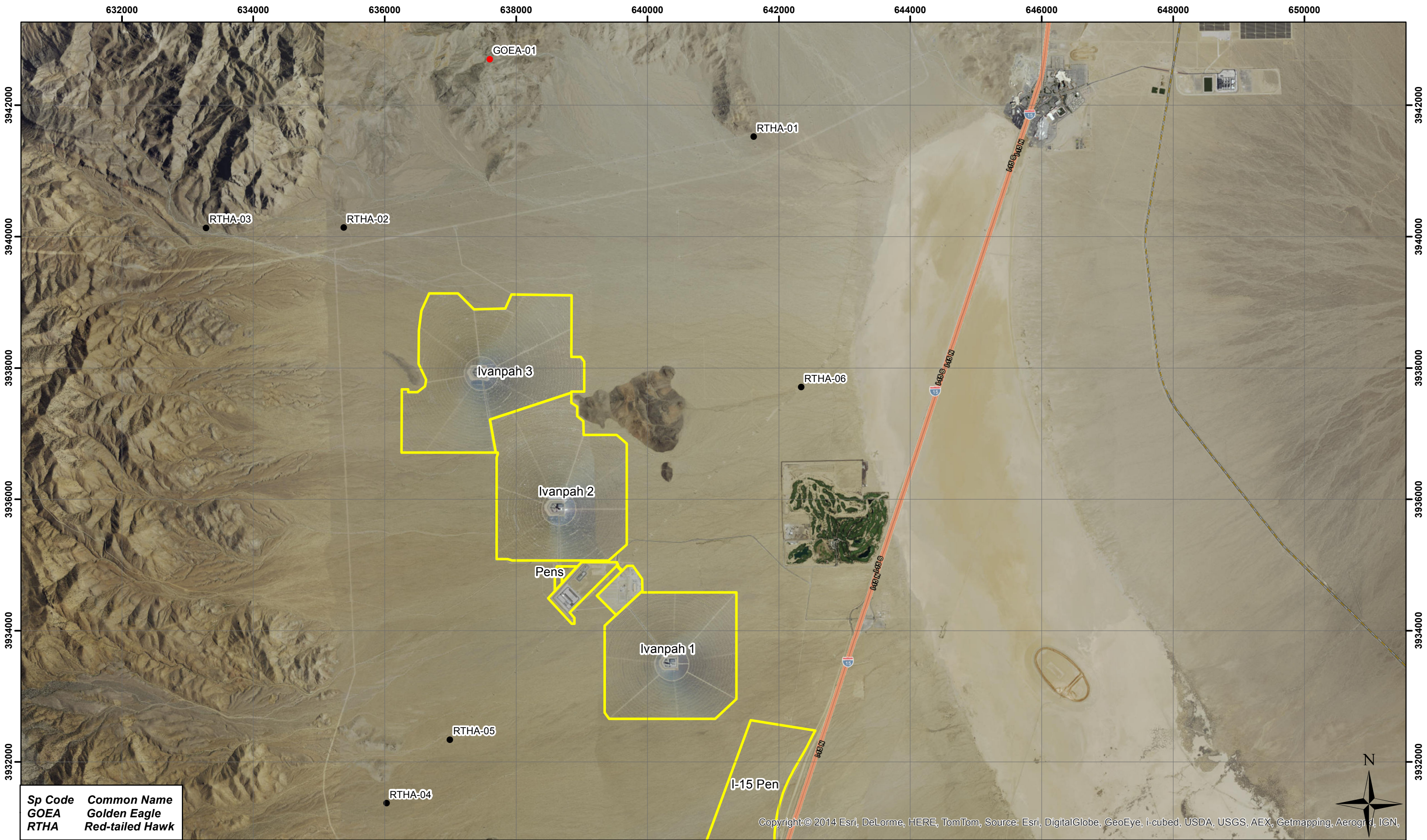


This map should not be used for site specific purposes. Proprietary and confidential. For use by Solar Partners I, II, and VIII only.

Figure B1
Nesting Bird Locations
January 1 - December 31, 2015
Ivanpah Solar Electric Generating System

Appendix C

Map of 2015 Raptor Nest Locations



Sp Code	Common Name
GOEA	Golden Eagle
RTHA	Red-tailed Hawk

Site Boundary

Raptor Nests

- Failed
- Fledged

18 Jan, 2016

0 1 2 Kilometers

This map should not be used for site specific purposes. Proprietary and confidential. For use by Solar Partners I, II, and VIII only.

Figure C1
Raptor Nest Locations
 January 1 - December 31, 2015
 Ivanpah Solar Electric Generating System

Copyright:© 2014 Esri, DeLorme, HERE, TomTom, Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN,

Appendix D

BIO-20 Biological Change of Conditions Reports

Ivanpah SEGS Change of Conditions Report COC BIO-20, May 2015

PREPARED FOR: Doug Davis/NRG Energy
PREPARED BY: Morgan King/CH2M HILL
COPIES: John Carrier/CH2M HILL
DATE: May 14, 2015

Introduction

The California Energy Commission's *Ivanpah Solar Electric Generating System Commissions Decision* (2010) Condition of Certification (COC) BIO-20 states, in part, that Solar Partners' must identify:

“...any change of conditions to the project, the jurisdictional impacts, or the mitigation efforts... 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.”

Potential changes of conditions include changes to assumptions resulting from new data provided during operations-phase of Ivanpah Solar Electric Generating (ISEGS) surveys. In spring 2015, environmental staff identified the presence of three new plant species, which is an apparent changes in biological conditions because they had not been previously identified from ISEGS.

New Plant Occurrences**Change of Conditions**

The three new plant species not previously observed onsite were Indian hedge mustard (*Sisymbrium orientale*), Berlandier's goosefoot (*Chenopodium berlandieri*), and desert thistle (*Cirsium neomexicanum*).

Description

Indian hedge mustard is a non-native species in California, which was introduced from Europe but naturalized in the wild. This species does not meet the ISEGS *Weed Management Plan*'s criteria for target weed species. It is well documented in disturbed habitats in southern California. All individuals were removed manually.

Berlandier's goosefoot is a native California plant. It is a common plant that prefers open and disturbed locations. Although not common in the eastern Mojave, it is well documented in San Bernardino County.

Desert thistle is a native California plant that is known to grow in disturbed areas such as roadsides, washes, canyons, and slopes. It is well documented in the Clark Mountains, and Ivanpah Valley is suitable habitat.

Recommendations

No recommendations are necessary to accommodate this change in conditions. Biological staff will continue to monitor the project site for new plant species while complying with requirements BIO-18 special-status plants and BIO-13 noxious weeds.

Appendix E

ISEGS 2015 Desert Tortoise Disposition Table

Table E1: ISEGS 2015 Desert Tortoise Disposition Table

Disposition Table Legend	
Term	Explanation
DTCC	Desert Tortoise Conservation Center
Inj	Injured
MNP	Mojave National Preserve
NT	Non-transmitted
OSP	Ojai Sulcata Project
SDZ	San Diego Zoo
Vet	Dr. Thomas Boyer, Pet Hospital of Penasquitos 9888 Carmel Mountain Rd. Ste F. San Diego, CA 92129

* BS191 and BS193 have approximate Initial Process Dates

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS01	Ivanpah 1		Female	184	219	10/9/2010	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)
BS02	Ivanpah 1		Male	264	268	10/9/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS03	Common East		Female	227	233	10/10/2010	No	Deceased (Aug 2011)											
BS04	Ivanpah 1		Male	252	262	10/10/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS05	Ivanpah 2		Male	216	249	10/7/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS06	Ivanpah 1		Male	257	279	10/12/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS07	Recipient Site		Unknown	94	154	10/12/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS08	Ivanpah 1		Female	209	213	10/12/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS09	Ivanpah 1		Male	253	258	14/10/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS10	Recipient Site		Male	277	275	10/14/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS11	Recipient Site		Female	199	225	10/16/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS12	Recipient Site		Female	209	225	10/16/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS13	Recipient Site		Male	245	247	10/19/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS14	Ivanpah 1		Female	224	237	19/10/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS15	Recipient Site		Male	190	224	10/19/2010	Yes	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS16	Recipient Site		Female	224	230	10/19/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS17	Common East		Unknown	116	169	10/20/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS18	Ivanpah 1	33	Unknown	72	136	10/20/2010	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS19	Recipient Site		Female	118	181	10/21/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS20	Ivanpah 2		Female	215	215	10/20/2010	No	Deceased (Oct 2010)											
BS21	Ivanpah 1		Male	241	256	21/10/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS22	Ivanpah 1		Male	231	245	22/10/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS23	Recipient Site		Female	242	251	10/23/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS24	Common West		Male	184	227	10/25/2010	No	Deceased (Sep 2014)											
BS25	Ivanpah 1		Female	168	218	26/10/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS26	Ivanpah 1		Unknown	123	142	10/27/2010	No	Deceased (Apr 2012)											

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS27	Common East		Female	232	234	10/19/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS28	Ivanpah 1		Female	217	228	28/10/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS29	Ivanpah 1		Male	265	247	10/28/2010	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)
BS30	Recipient Site		Male	243	259	10/29/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS31	Ivanpah 1		Female	133	217	29/10/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS32	Ivanpah 1		Male	252	258	10/29/2010	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)
BS33	Recipient Site		Female	228	232	10/29/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS34	Ivanpah 1		Female	214	221	10/29/2010	No	Deceased (Aug 2012)											
BS35	Ivanpah 1		Unknown	143	172	10/29/2010	No	Deceased (Jul 2012)											
BS36	Ivanpah 1		Male	150	189	10/30/2010	No	Deceased (Jul 2014)											
BS37	Ivanpah 2		Male	243	275	10/30/2010	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)
BS38	Ivanpah 1		Female	223	235	10/30/2010	No	Deceased (May 2013)											
BS39	Ivanpah 1	34	Unknown	61	115	11/1/2010	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS40	Ivanpah 1	34	Unknown	69	135	11/1/2010	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS41	Ivanpah 1		Female	118	195	11/1/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS42	Ivanpah 1	18	Unknown	53	123	12/17/2010	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS43	Ivanpah 1	202	Unknown	46	107	12/20/2010	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS44	Ivanpah 1		Female	194	223	16/2/2011	No	Recipient	Recipient	Recipient	Recipient	Recipient	Deceased						
BS45	Recipient Site		Female	223	226	3/5/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS46	Ivanpah 3		Female	209	229	03/5/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS47	Ivanpah 3		Female	242	240	03/8/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS48	Ivanpah 2	34	Unknown	86	121	3/9/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS49	Ivanpah 3		Male	209	240	03/9/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS50	Ivanpah 3		Male	204	232	03/9/2011	Yes	Recipient	Recipient	Missing	Missing	Missing	Missing	Missing	Missing	Recipient	Recipient	Recipient	Recipient
BS51	Ivanpah 3		Male	234	243	3/10/2011	No	Deceased (Oct 2014)											

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS52	Ivanpah 3		Male	176	240	03/10/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS53	Common East	18	Unknown	46	114	3/10/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS54	Ivanpah 3	18	Unknown	47	47	3/12/2011	No	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS55	Recipient Site		Female	226	248	3/12/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS56	Recipient Site		Female	236	237	3/14/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS57	Ivanpah 3		Female	218	222	14/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS58	Ivanpah 3		Female	138	217	3/15/2011	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)
BS59	Ivanpah 3		Unknown	67	92	3/15/2011	No	Moved permanently to OSP (Sep 2012)											
BS60	Recipient Site		Female	173	182	3/15/2011	No	Deceased (Apr 2013)											
BS61	Ivanpah 2		Female	217	221	15/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS62	Ivanpah 3		Male	200	233	15/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS63	Ivanpah 3	204	Unknown	40	110	16/3/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS64	Ivanpah 3		Female	199	210	16/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS65	Ivanpah 3		Female	210	211	16/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS66	Ivanpah 3		Female	190	231	16/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS67	Ivanpah 2	33	Unknown	71	142	3/16/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS68	Ivanpah 2		Male	265	262	16/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS69	Ivanpah 3		Male	251	266	16/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS70	Recipient Site		Unknown	131	174	3/17/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS71	Ivanpah 3		Female	216	223	17/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS72	Ivanpah 2	34	Unknown	57	110	3/21/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS73	Ivanpah 3		Unknown	47	47	3/22/2011	No	Deceased (Mar 2011)											
BS74	Recipient Site		Male	176	234	3/21/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS75	Recipient Site		Unknown	83	116	3/22/2011	Yes	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS76	Recipient Site		Female	226	226	3/23/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS77	Ivanpah 2		Female	228	227	23/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS78	Recipient Site		Male	248	259	3/28/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS79	Ivanpah 2		Female	243	244	28/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS80	Ivanpah 3		Male	255	265	28/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS81	Ivanpah 3		Male	254	257	3/28/2011	No	Deceased (Sep 2012)											
BS82	Ivanpah 3		Male	217	239	3/28/2011	No	Pens	Moved Permanently to SDZ										
BS83	Ivanpah 3		Male	257	257	3/29/2011	No	Deceased (Apr 2011)											
BS84	Recipient Site		Male	237	245	3/30/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS85	Ivanpah 3		Unknown	136	153	3/30/2011	No	Deceased (Sep 2012)											
BS86	Ivanpah 3		Male	251	261	30/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS87	Ivanpah 3	213	Unknown	72	118	3/30/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS88	Ivanpah 2		Male	272	271	30/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS89	Recipient Site		Male	250	265	3/30/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS90	Ivanpah 3		Male	270	271	30/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS91	Ivanpah 3		Female	235	239	30/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS92	Ivanpah 2		Male	269	268	31/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS93	Recipient Site		Male	292	290	3/31/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS94	Ivanpah 3		Male	211	242	3/31/2011	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)
BS95	Ivanpah 3		Female	245	248	31/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS96	Recipient Site		Female	213	224	4/1/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS97	Ivanpah 3		Male	203	222	31/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS98	Ivanpah 3	60	Unknown	102	114	4/1/2011	No	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS99	Recipient Site		Male	157	211	4/2/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS100	Ivanpah 1		Male	249	259	10/12/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS101	Recipient Site		Male	273	278	10/14/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS102	Recipient Site		Male	270	269	10/14/2010	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS103	Ivanpah 1		Male	246	248	15/10/2010	No	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Deceased					

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS104	Recipient Site		Male	265	265	10/15/2010	No	Deceased (Oct 2010)											
BS105	Recipient Site		Male	253	261	4/2/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS106	Ivanpah 3	32	Unknown	68	113	4/2/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS107	Recipient Site		Female	232	237	3/31/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS108	Recipient Site		Male	264	273	4/1/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS109	Recipient Site		Male	267	271	4/2/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS110	Ivanpah 3		Male	270	270	04/2/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS111	Recipient Site		Female	227	234	4/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS112	Common West	18	Unknown	44	116	4/4/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS113	Recipient Site		Male	230	252	4/4/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS114	Ivanpah 3		Male	272	268	04/5/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS115	Ivanpah 3	32	Unknown	64	111	4/5/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS116	Ivanpah 3		Male	190	232	04/5/2011	No	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Deceased				
BS117	Ivanpah 2		Male	231	254	04/6/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS118	Recipient Site		Unknown	121	121	4/10/2011	No	Deceased (Apr 2011)											
BS119	Recipient Site		Unknown	57	57	4/10/2011	No	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT
BS120	Recipient Site		Male	263	267	4/11/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS121	Recipient Site		Male	246	250	4/12/2011	No	Deceased (Aug 2012)											
BS122	Ivanpah 3		Male	194	215	4/12/2011	No	Deceased (May 2014)											
BS123	Ivanpah 1	32	Unknown	57	108	4/13/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS124	Recipient Site		Male	235	260	4/13/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS125	Recipient Site		Male	252	255	4/14/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS126	Recipient Site		Female	232	243	4/14/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS127	Recipient Site		Female	248	250	4/13/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS128	Recipient Site		Male	207	256	4/15/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS129	Recipient Site		Male	295	294	4/16/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS130	Recipient Site		Male	245	271	4/17/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS131	Recipient Site		Male	274	274	4/18/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS132	Recipient Site		Female	205	221	4/19/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Missing	Recipient	Recipient	Recipient	Recipient
BS133	Recipient Site		Female	210	206	4/20/2011	No	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS134	Recipient Site		Female	228	227	4/21/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS135	Recipient Site		Male	196	236	4/21/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS136	Recipient Site		Female	228	233	4/21/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS137	Recipient Site		Female	227	235	4/21/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Missing	Recipient	Recipient	Recipient	Recipient
BS138	Recipient Site		Female	216	221	4/23/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS139	Recipient Site		Male	266	274	4/23/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS140	Recipient Site		Female	203	207	4/23/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS141	Ivanpah 2		Female	200	228	24/4/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS142	Recipient Site		Male	244	258	4/24/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS143	Recipient Site		Male	219	233	4/24/2011	No	Deceased (Apr 2014)											
BS144	Recipient Site		Female	204	207	4/24/2011	No	Deceased (Apr 2014)											
BS145	Recipient Site		Male	284	283	4/24/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS146	Recipient Site		Female	213	218	4/24/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS147	Recipient Site		Male	270	270	4/25/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS148	Recipient Site		Male	261	261	4/24/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS149	Recipient Site		Male	253	262	4/25/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS150	Recipient Site		Female	208	208	4/24/2011	No	Deceased (Mar 2014)											
BS151	Recipient Site		Male	247	250	4/24/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS153	Recipient Site		Female	237	234	4/26/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS154	Recipient Site		Female	233	238	4/26/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient

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BS155	Recipient Site		Male	264	262	4/26/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS156	Recipient Site		Female	198	232	4/26/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS157	Ivanpah 2		Female	142	203	24/4/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS158	Recipient Site		Female	213	217	4/24/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS159	Recipient Site		Female	248	249	4/24/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS160	Recipient Site		Male	252	251	4/27/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS161	Recipient Site		Female	227	238	4/27/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS162	Recipient Site		Female	231	234	4/28/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS163	Recipient Site		Male	201	216	4/28/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS164	Recipient Site		Male	315	316	4/25/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS165	Recipient Site		Male	251	252	4/28/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS166	Recipient Site		Female	243	247	4/28/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS167	Recipient Site		Male	269	271	4/29/2011	No	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Deceased			
BS168	Recipient Site		Female	239	249	4/29/2011	No	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Deceased			
BS169	Recipient Site		Male	208	218	4/29/2011	No	Deceased (Aug 2012)											
BS170	Recipient Site		Female	213	217	4/29/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS171	Recipient Site		Male	254	263	4/28/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS172	Recipient Site		Male	225	243	4/28/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS173	Ivanpah 2		Female	217	220	05/11/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS174	Ivanpah 1		Unknown	59	106	5/12/2011	No	Pens	Pens	Pens	Deceased								
BS175	Ivanpah 1	32	Unknown	62	124	5/12/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS176	Ivanpah 3		Female	228	235	17/5/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS177	Ivanpah 2		Female	236	237	22/5/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS178	Ivanpah 1	205	Unknown	46	107	6/9/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS179	Ivanpah 3		Male	122	213	6/11/2011	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)

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BS180	Recipient Site		Unknown	94	107	7/12/2011	No	Deceased (Aug 2012)											
BS181	Ivanpah 3	32	Unknown	62	119	7/20/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS182	Ivanpah 2	205	Unknown	59	113	7/27/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS183	Ivanpah 2		Male	261	265	30/7/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS184	Ivanpah 3		Female	176	213	8/4/2011	No	Deceased (Aug 2014)											
BS185	Ivanpah 3	205	Unknown	53	115	8/6/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS186	Ivanpah 2		Female	137	202	08/7/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS187	Ivanpah 3		Female	190	202	8/8/2011	No	Deceased (Apr 2014)											
BS188	Ivanpah 3	34	Unknown	75	124	8/12/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS189	Ivanpah 3		Unknown	137	152	8/13/2011	Yes	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS190	Ivanpah 3	34	Unknown	102	119	8/15/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS191	Ivanpah 2	203	Unknown	82	138	4/15/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS192	Recipient Site		Female	148	182	8/23/2011	No	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS193	Ivanpah 3	18	Unknown	70	118	4/15/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS194	Quarantine Pens	207	Unknown	45	92	8/25/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS195	Quarantine Pens	207	Unknown	43	104	8/26/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS196	Quarantine Pens	207	Unknown	43	81	8/26/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS197	Quarantine Pens	207	Unknown	45	89	8/26/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS198	Quarantine Pens	207	Unknown	44	78	8/26/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS199	Quarantine Pens	207	Unknown	43	86	8/26/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS200	Quarantine Pens	216	Unknown	41	55	8/29/2011	No	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS201	Quarantine Pens	216	Unknown	43	106	8/29/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS202	Quarantine Pens		Unknown	46	85	8/29/2011	No	Deceased (Sep 2014)											
BS203	Quarantine Pens	201	Unknown	44	93	8/29/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS204	Quarantine Pens	201	Unknown	43	100	8/29/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens

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BS205	Quarantine Pens	216	Unknown	41	99	8/29/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS206	Quarantine Pens		Unknown	31	31	8/29/2011	No	Deceased (Aug 2011)											
BS207	Quarantine Pens	201	Unknown	43	71	8/30/2011	No	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS208	Quarantine Pens	215	Unknown	46	91	8/30/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS209	Quarantine Pens	215	Unknown	40	100	8/30/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS210	Quarantine Pens	217	Unknown	40	99	8/30/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS211	Quarantine Pens	218	Unknown	44	52	8/31/2011	No	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS212	Quarantine Pens	215	Unknown	48	89	9/1/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS213	Quarantine Pens	215	Unknown	46	100	9/1/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS214	Quarantine Pens	215	Unknown	45	102	9/1/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS215	Quarantine Pens	216	Unknown	44	106	9/1/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS216	Quarantine Pens	217	Unknown	42	95	9/1/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS217	Ivanpah 3		Male	253	263	09/3/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS218	Quarantine Pens		Unknown	38	38	9/3/2011	No	Deceased (Sep 2011)											
BS219	Quarantine Pens	216	Unknown	43	96	9/3/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS220	Ivanpah 3		Male	268	263	09/5/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS221	Quarantine Pens	201	Unknown	48	87	9/5/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS222	Quarantine Pens		Unknown	44	45	9/5/2011	No	Moved permanently to MNP (Apr 2012)											
BS223	Ivanpah 3		Male	197	222	09/6/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS224	Quarantine Pens		Unknown	43	46	9/6/2011	No	Moved permanently to MNP (Apr 2012)											
BS225	Quarantine Pens		Unknown	43	46	9/6/2011	No	Moved permanently to MNP (Apr 2012)											
BS226	Quarantine Pens	201	Unknown	46	104	9/6/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS227	Quarantine Pens	218	Unknown	44	122	9/7/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS228	Quarantine Pens		Unknown	46	47	9/7/2011	No	Moved permanently to MNP (Apr 2012)											
BS229	Quarantine Pens		Unknown	41	44	9/7/2011	No	Moved permanently to MNP (Apr 2012)											
BS230	Recipient Site		Male	186	222	9/7/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS231	Quarantine Pens	212	Unknown	43	98	9/7/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS232	Quarantine Pens		Unknown	42	42	9/7/2011	No	Deceased (Sep 2011)											
BS233	Quarantine Pens	212	Unknown	44	107	9/7/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS234	Quarantine Pens		Unknown	42	44	9/8/2011	No	Moved permanently to MNP (Apr 2012)											
BS235	Quarantine Pens		Unknown	44	47	9/8/2011	No	Moved permanently to MNP (Apr 2012)											
BS236	Quarantine Pens		Unknown	42	47	9/8/2011	No	Moved permanently to MNP (Apr 2012)											
BS237	Quarantine Pens		Unknown	45	45	9/9/2011	No	Moved permanently to MNP (Apr 2012)											
BS238	Quarantine Pens		Unknown	41	44	9/9/2011	No	Moved permanently to MNP (Apr 2012)											
BS239	Recipient Site		Female	224	227	9/8/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS240	Quarantine Pens		Unknown	44	46	9/9/2011	No	Moved permanently to MNP (Apr 2012)											
BS241	Quarantine Pens	212	Unknown	41	95	9/11/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS242	Recipient Site		Male	210	246	9/9/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS243	Recipient Site		Unknown	134	135	9/9/2011	No	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS244	Ivanpah 2	223	Unknown	55	84	9/10/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS245	Recipient Site		Male	281	285	9/10/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS246	Ivanpah 3		Male	162	188	09/10/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS247	Ivanpah 2	223	Unknown	61	125	9/10/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS248	Recipient Site		Male	260	265	9/10/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS249	Quarantine Pens	201	Unknown	45	97	9/11/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS250	Quarantine Pens		Unknown	48	48	9/12/2011	No	Moved permanently to MNP (Apr 2012)											
BS251	Quarantine Pens	209	Unknown	46	85	9/12/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS252	Ivanpah 3	223	Unknown	79	132	9/12/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS253	Quarantine Pens	211	Unknown	44	100	9/13/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS254	Quarantine Pens	211	Unknown	43	96	9/13/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS255	Quarantine Pens	211	Unknown	43	98	9/13/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS256	Ivanpah 3	223	Unknown	68	108	9/13/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS257	Ivanpah 3		Female	140	181	14/9/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS258	Ivanpah 2		Unknown	81	80	9/13/2011	No	Deceased (May 2013)											
BS259	Ivanpah 3	222	Unknown	114	142	9/14/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS260	Ivanpah 3		Unknown	136	136	9/14/2011	No	Deceased (Aug 2012)											
BS261	Ivanpah 3		Unknown	134	146	9/14/2011	No	Deceased (Jul 2014)											
BS262	Quarantine Pens		Unknown	42	44	9/16/2011	No	Moved permanently to MNP (Apr 2012)											
BS263	Ivanpah 2	221	Unknown	74	105	9/16/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS264	Ivanpah 3		Unknown	50	50	9/17/2011	No	Deceased (Sep 2011)											
BS265	Ivanpah 3		Unknown	126	176	9/18/2011	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)
BS266	Ivanpah 2		Male	178	201	9/18/2011	No	Deceased (Sep 2013)											
BS267	Ivanpah 3	220	Unknown	82	134	9/18/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS268	Ivanpah 3	219	Unknown	66	114	9/18/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS269	Ivanpah 3	220	Unknown	93	125	9/18/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS270	Ivanpah 3	17	Unknown	120	172	9/18/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS271	Ivanpah 3		Unknown	59	77	9/19/2011	No	Deceased (May 2013)											
BS272	Ivanpah 3	222	Unknown	89	130	9/20/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS273	Ivanpah 3		Unknown	104	104	9/20/2011	No	Deceased (Oct 2012)											
BS274	Ivanpah 3	210	Unknown	45	97	9/20/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS275	Ivanpah 3		Female	205	230	20/9/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS276	Ivanpah 3	221	Unknown	69	104	9/20/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS277	Common East	210	Unknown	46	89	9/20/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS278	Quarantine Pens		Unknown	42	42	9/21/2011	No	Moved permanently to MNP (Apr 2012)											
BS279	Quarantine Pens	209	Unknown	48	85	9/21/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS280	Ivanpah 3	219	Unknown	85	132	9/21/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS281	Quarantine Pens	209	Unknown	48	98	9/21/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS282	Ivanpah 3	224	Unknown	90	137	9/21/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS283	Ivanpah 2	214	Unknown	100	136	9/21/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS284	Quarantine Pens	209	Unknown	43	96	9/22/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS285	Ivanpah 3	204	Unknown	54	117	9/22/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS286	Ivanpah 3	204	Unknown	63	109	9/22/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS287	Ivanpah 2	214	Unknown	111	177	9/22/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS288	Ivanpah 2	204	Unknown	58	95	9/23/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS289	Ivanpah 3		Female	214	242	9/22/2011	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)
BS290	Ivanpah 3		Female	170	224	9/25/2011	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)
BS291	Ivanpah 3		Female	157	219	9/23/2011	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS292	Ivanpah 2	222	Unknown	103	134	9/24/2011	No	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)
BS293	Ivanpah 3		Unknown	129	165	9/24/2011	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)
BS294	Ivanpah 3		Unknown	125	168	9/24/2011	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)
BS295	Ivanpah 2	219	Unknown	60	100	9/26/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS296	Ivanpah 3	221	Unknown	70	113	9/26/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS297	Quarantine Pens	209	Unknown	43	98	9/27/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS298	Ivanpah 3	221	Unknown	62	104	9/27/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS299	Quarantine Pens	209	Unknown	47	98	9/29/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS300	Ivanpah 3	210	Unknown	47	107	9/29/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS301	Ivanpah 3	210	Unknown	47	47	9/29/2011	No	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS302	Ivanpah 3	204	Unknown	62	94	9/30/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS303	Ivanpah 3	220	Unknown	76	122	9/30/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS304	Ivanpah 3	221	Unknown	72	99	10/2/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS305	Ivanpah 3		Female	224	229	10/3/2011	Yes	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS306	Recipient Site		Unknown	133	145	10/3/2011	No	Deceased (May 2013)											
BS307	Ivanpah 3	213	Unknown	64	113	10/3/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS308	Ivanpah 3		Unknown	62	95	10/4/2011	No	Deceased (Jun 2014)											
BS309	Ivanpah 1		Unknown	60	60	10/4/2011	No	Deceased (Oct 2011)											
BS310	Ivanpah 3		Male	277	280	10/4/2011	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)
BS311	Quarantine Pens		Unknown	38	38	9/4/2011	No	Deceased (Oct 2011)											
BS312	Ivanpah 1		Unknown	65	65	10/6/2011	No	Deceased (Oct 2011)											
BS313	Recipient Site		Unknown	156	164	10/7/2011	No	Deceased (Oct 2012)											
BS314	Recipient Site		Male	209	234	10/11/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS315	Recipient Site		Male	209	220	10/14/2011	No	Deceased (Sep 2012)											

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS316	Recipient Site		Male	280	282	10/13/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS317	Recipient Site		Male	268	270	10/14/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS318	Recipient Site		Male	282	282	10/15/2011	No	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT
BS319	Recipient Site		Male	277	277	10/15/2011	No	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT
BS320	Recipient Site		Female	222	228	10/16/2011	Yes	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)	Recipient (I-15 Pen)
BS321	Recipient Site		Female	235	231	10/15/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS322	Recipient Site		Female	220	220	10/15/2011	No	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT
BS323	Recipient Site		Female	219	220	10/15/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS324	Recipient Site		Female	207	211	10/15/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS325	Recipient Site		Male	267	267	10/15/2011	No	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT
BS326	Recipient Site		Unknown	97	126	10/15/2011	No	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT
BS327	Recipient Site		Female	219	242	10/15/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS328	Recipient Site		Male	251	256	10/16/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS329	Recipient Site		Male	265	265	10/16/2011	No	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT
BS330	Recipient Site		Male	251	251	10/16/2011	No	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT
BS331	Recipient Site		Male	260	260	10/16/2011	No	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT
BS332	Recipient Site		Male	300	300	10/16/2011	No	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT
BS333	Ivanpah 1	210	Unknown	43	91	10/17/2011	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS334	Recipient Site		Female	225	224	10/17/2011	Yes	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS335	Recipient Site		Male	271	272	10/17/2011	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS336	Recipient Site		Unknown	104	138	10/19/2011	No	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS337	Common East		Unknown	37	37	11/28/2011	No	Deceased (Nov 2011)											
BS338	Ivanpah 2	220	Unknown	62	113	3/5/2012	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS339	Recipient Site		Male	167	228	3/15/2012	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS340	Ivanpah 2		Unknown	55	55	3/21/2012	No	Deceased (Mar 2012)											

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS341	Ivanpah 1	213	Unknown	70	103	4/3/2012	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS342	Recipient Site		Unknown	68	110	4/9/2012	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS343	Ivanpah 1		Unknown	59	78	6/2/2012	No	Deceased (Jul 2013)											
BS344	Recipient Site		Unknown	60	80	7/30/2012	Yes	Recipient	Recipient	Recipient	Recipient	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS345	Recipient Site		Unknown	105	131	8/11/2012	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS346	Recipient Site		Unknown	73	92	8/30/2012	No	Deceased (Jul 2014)											
BS347	Ivanpah 3	209	Unknown	72	99	9/7/2012	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS348	Ivanpah 2	208	Unknown	74	107	9/10/2012	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS349	Recipient Site		Unknown	81	82	9/12/2012	No	Deceased (Jul 2013)											
BS350	Ivanpah 3	206	Unknown	45	92	9/25/2012	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS351	Ivanpah 3	224	Unknown	93	144	10/8/2012	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS352	Ivanpah 3	224	Unknown	101	135	10/17/2012	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS353	Recipient Site		Unknown	71	72	3/22/2013	Yes	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS354	Recipient Site		Unknown	82	118	3/26/2013	Yes	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient	Recipient
BS355	Ivanpah 1	206	Unknown	43	99	3/27/2013	No	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens	Pens
BS356	Recipient Site		Unknown	78	79	4/14/2013	No	Deceased (Aug 2013)											
BS357	Ivanpah 3		Unknown	89	89	4/23/2014	No	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT
BS358	Ivanpah 1		Unknown	48	48	6/10/2014	No	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT
BS359	Ivanpah 1		Unknown	50	50	12/17/2014	No	Deceased (Dec 2014)											
BS360	Ivanpah 2		Unknown	102	102	4/21/2015	No				Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT	Recipient-NT
BS500	Control Site		Female	243	246	30/3/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS501	Control Site		Female	189	194	4/1/2011	No	Deceased (Nov 2014)											
BS502	Control Site		Female	217	215	04/1/2011	No	Control	Control	Control	Control	Deceased							
BS503	Control Site		Male	238	240	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS504	Control Site		Female	198	219	04/2/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS505	Control Site		Male	213	226	4/1/2011	No	Deceased (Sep 2013)											

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS506	Control Site		Male	252	253	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS507	Control Site		Female	221	228	4/1/2011	No	Pens	Moved Permanently to SDZ										
BS508	Control Site		Male	237	246	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS509	Control Site		Male	169	235	04/2/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS510	Control Site		Male	256	267	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS511	Control Site		Female	221	222	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS512	Control Site		Male	272	277	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS513	Control Site		Female	225	229	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS514	Control Site		Female	158	226	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS515	Control Site		Female	213	217	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS516	Control Site		Unknown	48	48	4/2/2011	No	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT
BS517	Control Site		Male	220	248	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS518	Control Site		Unknown	122	144	4/1/2011	No	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS519	Control Site		Female	206	207	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS520	Control Site		Unknown	130	152	04/1/2011	No	Deceased (Jun 2013)											
BS521	Control Site		Female	137	182	04/2/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS522	Control Site		Male	269	265	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS523	Control Site		Female	225	228	04/2/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS524	Control Site		Male	257	260	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS525	Control Site		Unknown	49	49	4/2/2011	No	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT
BS526	Control Site		Unknown	88	88	4/2/2011	No	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT
BS527	Control Site		Female	202	216	04/1/2011	Yes	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS528	Control Site		Unknown	65	65	4/2/2011	No	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT
BS529	Control Site		Male	233	238	04/2/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS530	Control Site		Male	205	234	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS531	Control Site		Female	203	205	04/1/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS532	Control Site		Female	203	207	04/1/2011	No	Deceased (Apr 2014)											
BS533	Control Site		Female	200	210	04/2/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS534	Control Site		Male	226	226	04/2/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS535	Control Site		Male	238	243	04/2/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS536	Control Site		Unknown	122	148	04/2/2011	No	Deceased (Jul 2014)											
BS537	Control Site		Male	236	241	04/3/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS538	Control Site		Female	216	227	04/3/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS539	Control Site		Male	240	244	10/8/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS540	Control Site		Male	198	210	10/8/2011	Yes	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS541	Control Site		Male	249	248	10/8/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS542	Control Site		Male	270	269	10/8/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS543	Control Site		Female	241	246	10/8/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS544	Control Site		Male	214	212	10/9/2011	No	Deceased (Sep 2012)											
BS545	Control Site		Female	197	204	10/8/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS546	Control Site		Male	218	223	10/9/2011	Yes	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS547	Control Site		Female	225	225	10/9/2011	No	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT	Control-NT
BS548	Control Site		Unknown	86	119	10/9/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS549	Control Site		Male	217	230	10/9/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS550	Control Site		Male	278	279	10/9/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS551	Control Site		Male	266	268	10/9/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS552	Control Site		Male	285	283	10/9/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS553	Control Site		Male	256	257	10/9/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS554	Control Site		Female	216	221	10/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS555	Control Site		Female	222	223	10/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS556	Control Site		Female	157	215	10/9/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS557	Control Site		Unknown	133	132	10/11/2011	Yes	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS558	Control Site		Male	246	243	10/11/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS559	Control Site		Female	232	234	10/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS560	Control Site		Female	228	232	10/11/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS561	Control Site		Male	160	196	10/11/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS562	Control Site		Unknown	118	168	10/11/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS563	Control Site		Male	267	268	10/11/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS564	Control Site		Male	265	268	10/11/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS565	Control Site		Male	249	256	10/11/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS566	Control Site		Female	211	236	10/11/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS567	Control Site		Male	266	267	10/11/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS568	Control Site		Female	186	197	10/11/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Missing
BS569	Control Site		Female	235	236	10/11/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS570	Control Site		Male	260	257	10/11/2011	No	Control	Control	Control	Control	Control	Control	Control	Deceased				
BS571	Control Site		Male	256	259	10/11/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS572	Control Site		Female	236	234	10/11/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS573	Control Site		Male	248	250	10/11/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS574	Control Site		Unknown	167	171	10/12/2011	No	Deceased (Jul 2013)											
BS575	Control Site		Male	260	260	10/12/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS576	Control Site		Female	242	244	10/12/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS577	Control Site		Female	220	227	10/12/2011	Yes	Control	Control	Control	Control	Control	Control	Missing	Missing	Missing	Missing	Missing	Missing
BS578	Control Site		Male	268	269	10/12/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS579	Control Site		Male	217	218	10/12/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS580	Control Site		Male	133	184	10/12/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS581	Control Site		Unknown	100	101	10/12/2011	No	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS582	Control Site		Female	226	227	10/12/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS583	Control Site		Female	215	215	10/12/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS584	Control Site		Unknown	133	134	10/13/2011	No	Deceased (Aug 2012)											
BS585	Control Site		Unknown	80	78	10/13/2011	Yes	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS586	Control Site		Male	274	275	13/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS587	Control Site		Unknown	107	145	10/13/2011	No	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS588	Control Site		Female	138	186	13/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS589	Control Site		Male	237	242	13/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS590	Control Site		Male	272	276	13/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS591	Control Site		Female	216	223	10/13/2011	No	Deceased (Sep 2014)											

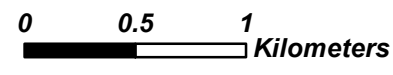
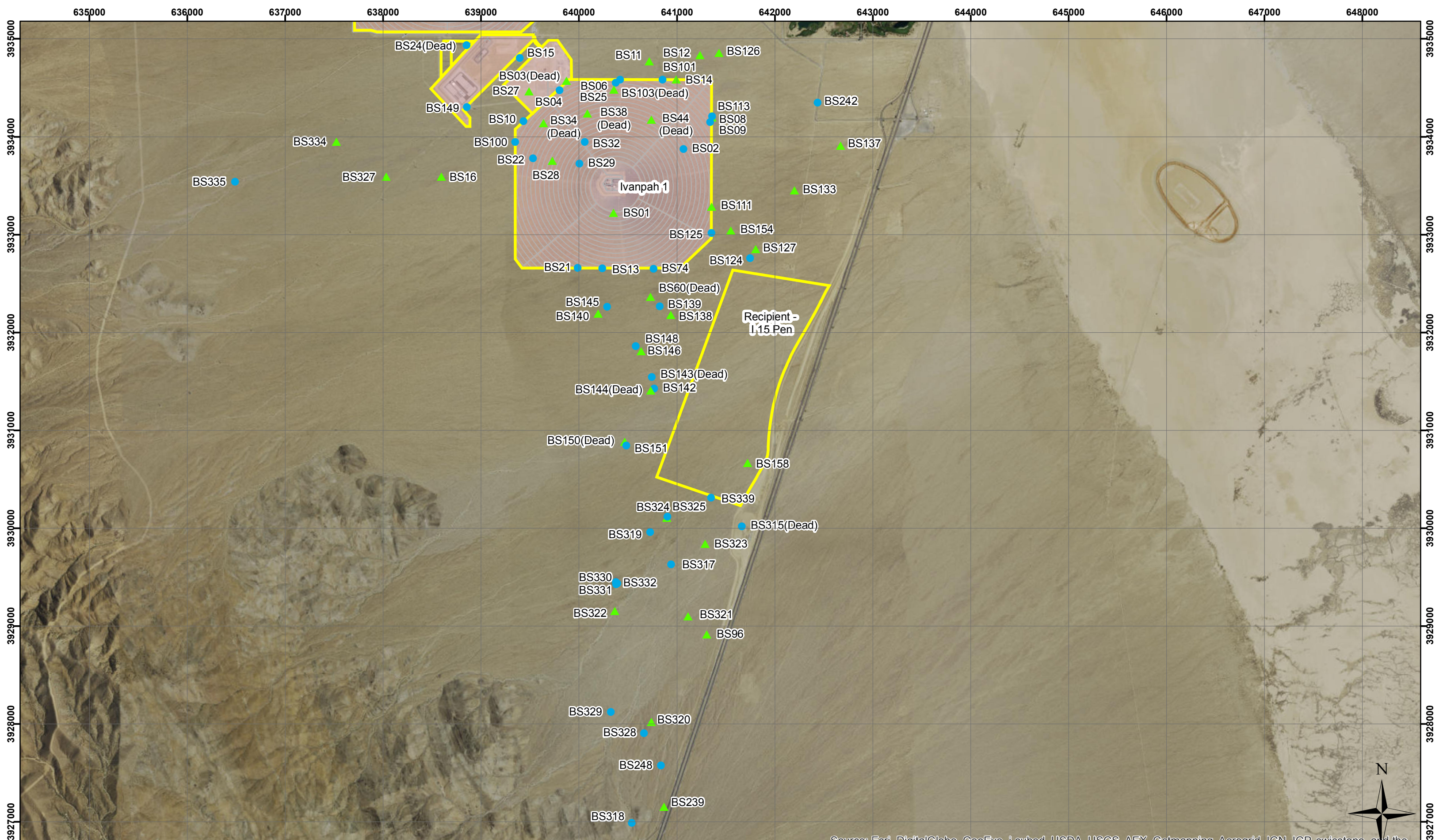
Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS592	Control Site		Unknown	115	171	10/13/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS593	Control Site		Female	218	219	13/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS594	Control Site		Male	182	195	13/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS595	Control Site		Female	216	222	13/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS596	Control Site		Female	235	232	14/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS597	Control Site		Male	268	273	13/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS598	Control Site		Female	234	236	14/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS599	Control Site		Female	215	219	13/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS600	Control Site		Male	254	257	13/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS601	Control Site		Unknown	90	91	14/10/2011	No	Deceased (May 2012)											
BS602	Control Site		Male	207	216	14/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS603	Control Site		Unknown	109	108	14/10/2011	No	Deceased (May 2012)											
BS604	Control Site		Female	189	195	14/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS605	Control Site		Female	219	228	14/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS606	Control Site		Male	198	222	14/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS607	Control Site		Unknown	88	132	10/14/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS608	Control Site		Male	243	243	14/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS609	Control Site		Male	241	245	14/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS610	Control Site		Female	152	205	14/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS611	Control Site		Unknown	104	139	10/15/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS612	Control Site		Unknown	81	122	10/15/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Missing	Control	Control	Control	Control
BS613	Control Site		Female	224	223	15/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS614	Control Site		Male	271	271	15/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS615	Control Site		Male	284	283	15/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS616	Control Site		Female	240	249	15/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS617	Control Site		Male	179	220	15/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS618	Control Site		Male	274	276	15/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS619	Control Site		Female	221	220	10/9/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS620	Control Site		Female	187	203	15/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS621	Control Site		Female	199	201	15/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS622	Control Site		Unknown	76	96	10/15/2011	Yes	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS623	Control Site		Female	223	225	15/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS624	Control Site		Unknown	99	147	10/15/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS625	Control Site		Male	272	275	15/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS626	Control Site		Unknown	173	173	10/16/2011	Yes	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS627	Control Site		Unknown	61	70	10/16/2011	Yes	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS628	Control Site		Male	226	231	16/10/2011	Yes	Control	Control	Missing	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS629	Control Site		Female	150	195	16/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS630	Control Site		Female	143	214	16/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS631	Control Site		Female	222	226	16/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS632	Control Site		Unknown	93	129	10/16/2011	No	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing	Missing
BS633	Control Site		Unknown	67	115	10/16/2011	No	Control	Control	Control	Control	Deceased							
BS634	Control Site		Female	130	183	16/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS635	Control Site		Female	159	207	16/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS636	Control Site		Female	271	278	16/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS637	Control Site		Unknown	121	129	16/10/2011	No	Deceased (Mar 2012)											
BS638	Control Site		Male	260	261	16/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS639	Control Site		Male	210	227	16/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS640	Control Site		Unknown	76	115	10/17/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS641	Control Site		Male	232	237	16/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS642	Control Site		Female	200	195	17/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS643	Control Site		Male	221	225	17/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS644	Control Site		Male	265	267	17/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS645	Control Site		Male	269	271	17/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS646	Control Site		Female	227	231	17/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS647	Control Site		Unknown	93	124	10/17/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control

Tort ID	Initial Process Location (GIS)	Pen #	Sex	Initial MCL	Recent MCL	Initial Process Date	Transmitter (Yes/No)	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
BS648	Control Site		Male	261	264	17/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS649	Control Site		Female	246	251	17/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS650	Control Site		Male	264	273	17/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS651	Control Site		Male	247	255	17/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS652	Control Site		Male	234	237	17/10/2011	No	Deceased (May 2014)											
BS653	Control Site		Male	196	216	17/10/2011	No	Control	Control	Control	Control	Control	Control	Deceased					
BS654	Control Site		Female	152	198	15/10/2011	Yes	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
BS655	Control Site		Unknown	88	94	10/18/2011	No	Deceased (Sep 2012)											

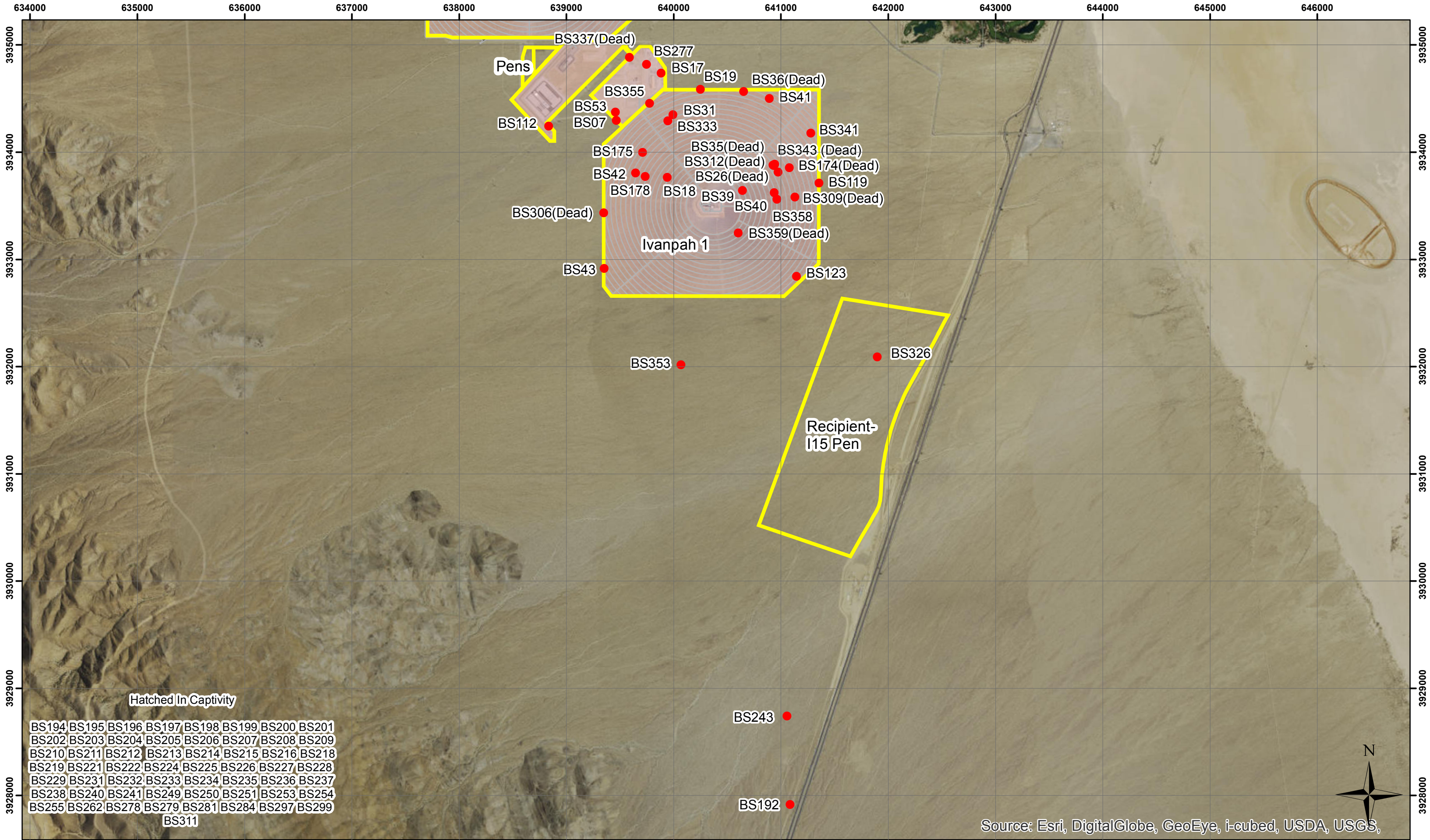
Appendix F

Maps of ISEGS Monitored Tortoise Locations



This map should not be used for site specific purposes.
 Proprietary and confidential. For use by Solar Partners I, II, and VIII only.

Figure F1
Initial Tortoise Locations (>=160)
Recipient Sites - Ivanpah 1
Ivanpah Solar Electric Generating System



BS194 BS195 BS196 BS197 BS198 BS199 BS200 BS201
 BS202 BS203 BS204 BS205 BS206 BS207 BS208 BS209
 BS210 BS211 BS212 BS213 BS214 BS215 BS216 BS218
 BS219 BS221 BS222 BS224 BS225 BS226 BS227 BS228
 BS229 BS231 BS232 BS233 BS234 BS235 BS236 BS237
 BS238 BS240 BS241 BS249 BS250 BS251 BS253 BS254
 BS255 BS262 BS278 BS279 BS281 BS284 BS297 BS299
 BS311

Site Boundary **Ring Roads**
Cleared Areas **Initial Tortoise Locations**

0 0.5 1
 Kilometers

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 Proprietary and confidential. For use by Solar Partners I, II, and VIII only.*

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS,

18 Jan, 2016

Figure F2
Initial Tortoise Locations (<160mm)
Recipient Sites - Ivanpah 1
Ivanpah Solar Electric Generating System

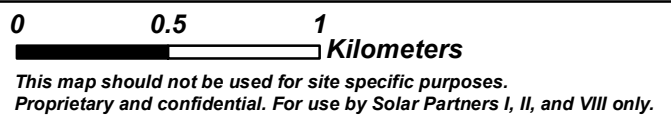
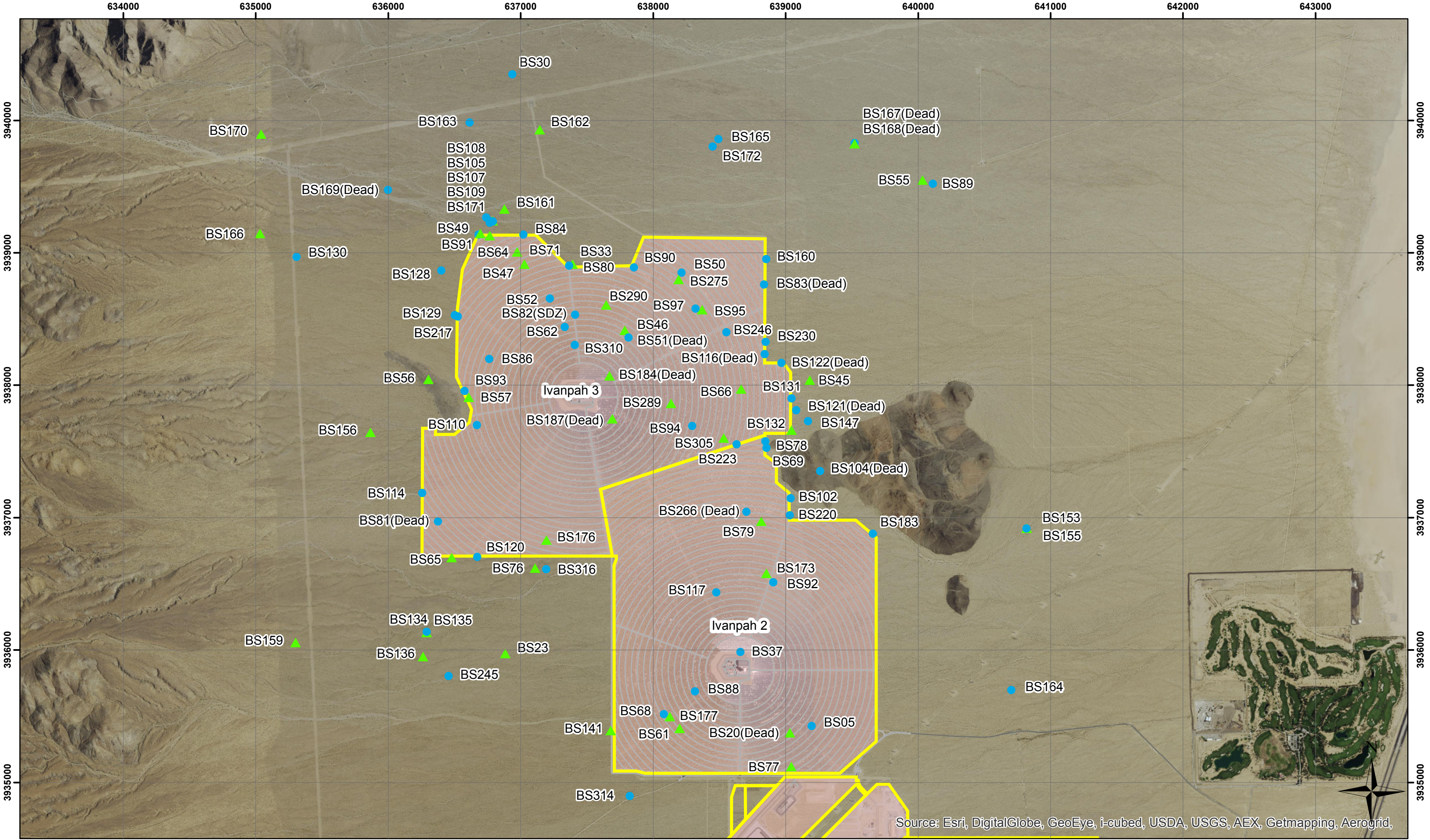
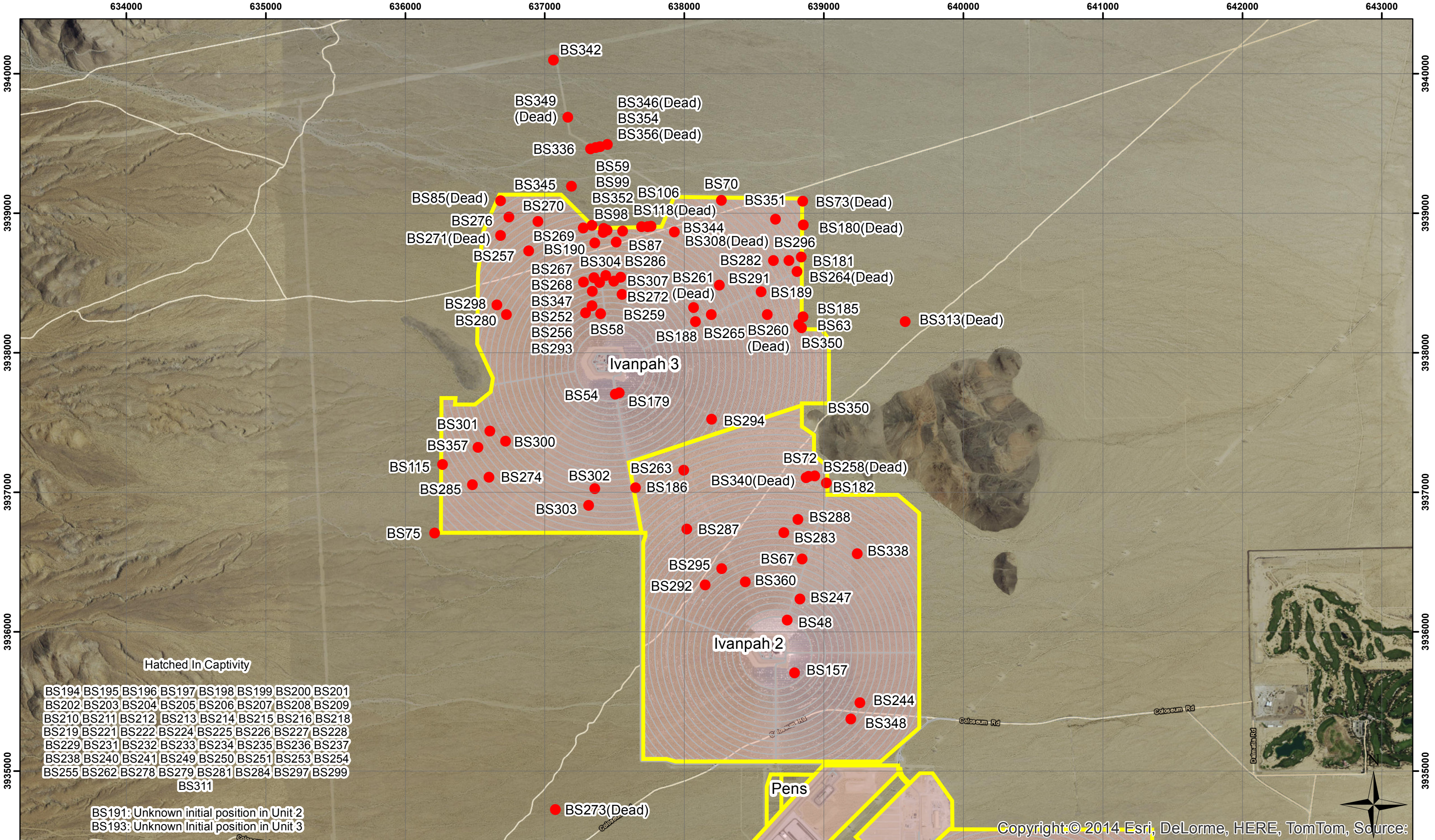
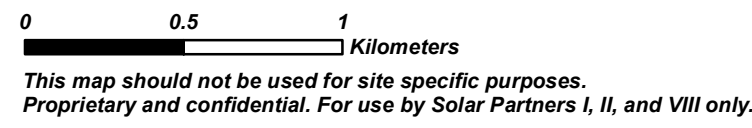
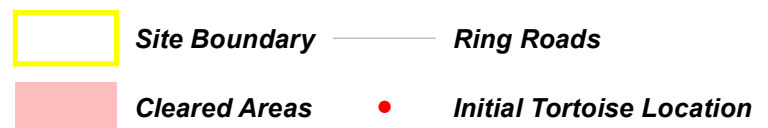


Figure F3
Initial Tortoise Locations (>=160)
Recipient Sites- Ivanpah 2 & 3
Ivanpah Solar Electric Generating System



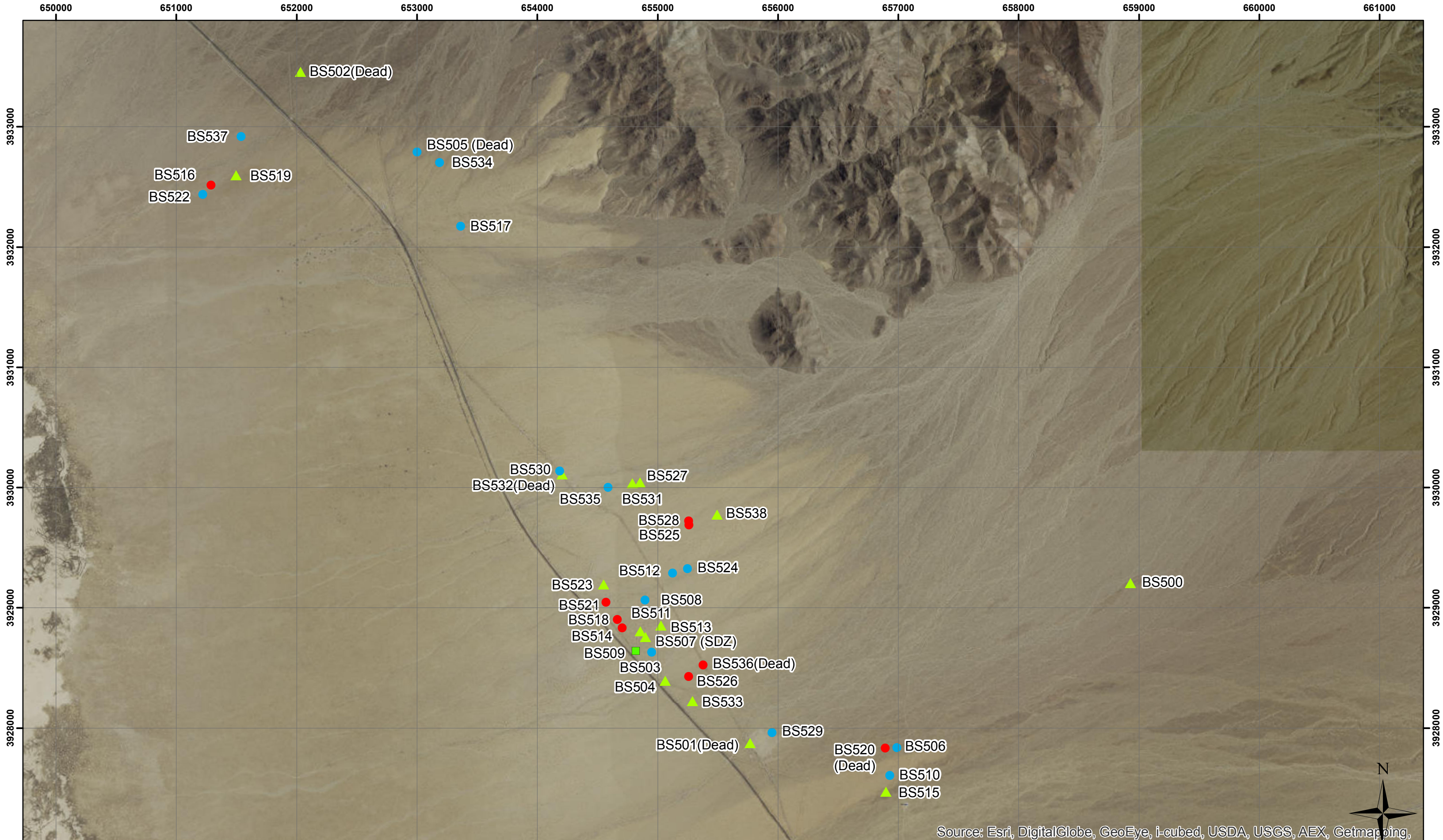
BS194 BS195 BS196 BS197 BS198 BS199 BS200 BS201
 BS202 BS203 BS204 BS205 BS206 BS207 BS208 BS209
 BS210 BS211 BS212 BS213 BS214 BS215 BS216 BS218
 BS219 BS221 BS222 BS224 BS225 BS226 BS227 BS228
 BS229 BS231 BS232 BS233 BS234 BS235 BS236 BS237
 BS238 BS240 BS241 BS249 BS250 BS251 BS253 BS254
 BS255 BS262 BS278 BS279 BS281 BS284 BS297 BS299

BS191: Unknown initial position in Unit 2
 BS193: Unknown initial position in Unit 3

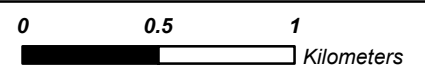


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Figure F4
Initial Tortoise Locations (<160mm)
Recipient Sites - Ivanpah 2 & 3
Ivanpah Solar Electric Generating System

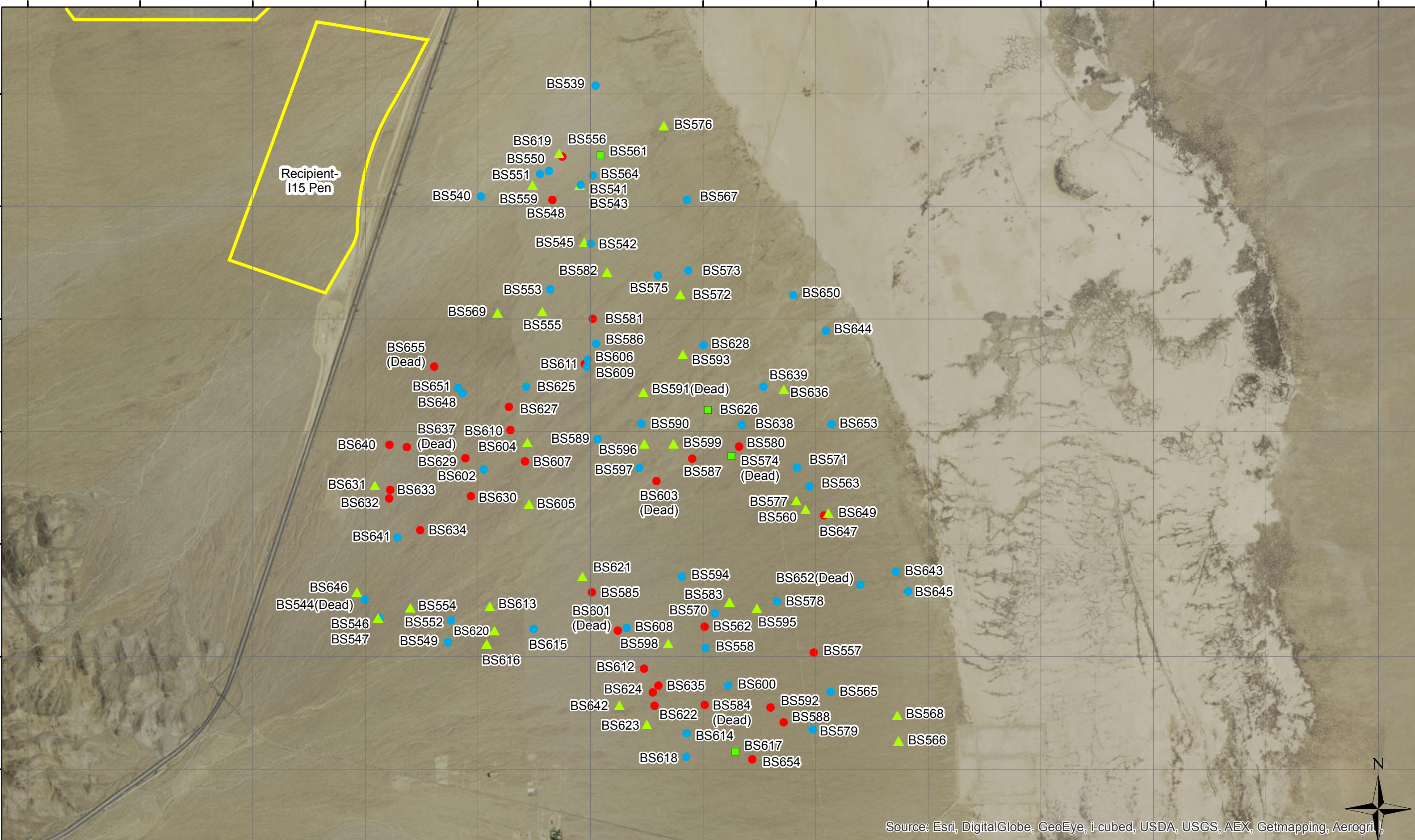


- ▲ Initial Tortoise Location (Female)
- Initial Tortoise Location (Male)
- Initial Tortoise Location (Juvenile)
- Initial Tortoise Location (Unknown Sex)



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Figure F5
Initial Tortoise Locations
Control East
Ivanpah Solar Electric Generating System



18 Jan, 2016

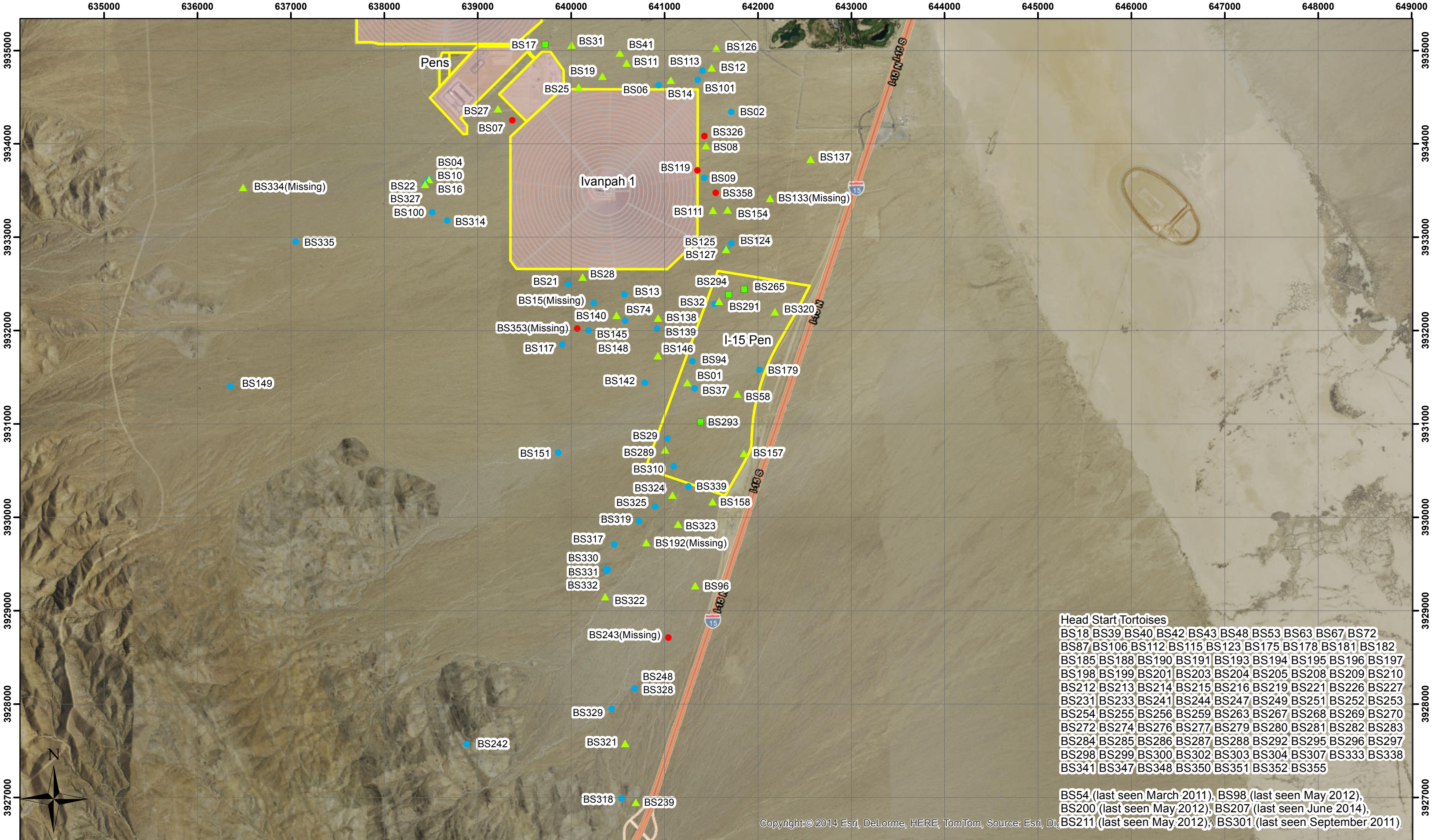
- Site Boundary
- ▲ Initial Tortoise Location (Female)
- Initial Tortoise Location (Male)
- Initial Tortoise Location (<160 mm)
- Initial Tortoise Location (Unknown Sex)

0 0.5 1 Kilometers

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Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid,

Figure F6
Initial Tortoise Locations
Control West
Ivanpah Solar Electric Generating System



Head Start Tortoises
 BS18 BS39 BS40 BS42 BS43 BS48 BS53 BS63 BS67 BS72
 BS87 BS106 BS112 BS115 BS123 BS175 BS178 BS181 BS182
 BS185 BS188 BS190 BS191 BS193 BS194 BS195 BS196 BS197
 BS198 BS199 BS201 BS203 BS204 BS205 BS208 BS209 BS210
 BS212 BS213 BS214 BS215 BS216 BS219 BS221 BS226 BS227
 BS231 BS233 BS241 BS244 BS247 BS249 BS251 BS252 BS253
 BS254 BS255 BS256 BS259 BS263 BS267 BS268 BS269 BS270
 BS272 BS274 BS276 BS277 BS279 BS280 BS281 BS282 BS283
 BS284 BS285 BS286 BS287 BS288 BS292 BS295 BS296 BS297
 BS298 BS299 BS300 BS302 BS303 BS304 BS307 BS333 BS338
 BS341 BS347 BS348 BS350 BS351 BS352 BS355

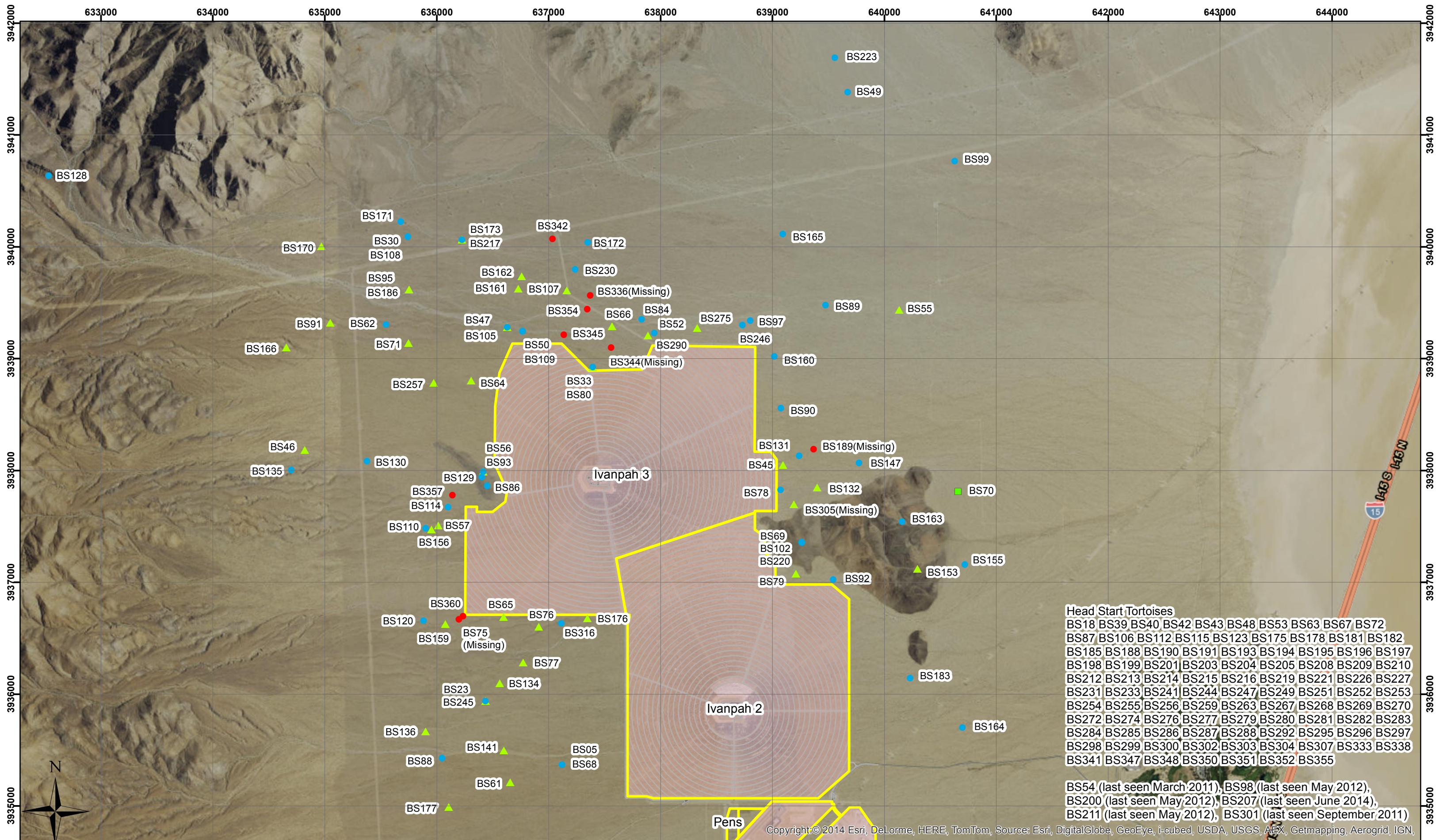
BS54 (last seen March 2011), BS98 (last seen May 2012),
 BS200 (last seen May 2012), BS207 (last seen June 2014),
 BS211 (last seen May 2012), BS301 (last seen September 2011).

18 Jan, 2016

Site Boundary	Ring Roads	Recent Tortoise Location (Female)	Recent Tortoise Location (Male)
Cleared Areas	Recent Tortoise Location (<160 mm)	Recent Tortoise Location (Unknown Sex)	

0 0.5 1
 Kilometers
 This map should not be used for site specific purposes. Proprietary and confidential. For use by Solar Partners I, II, and VIII only.

Figure F7
Most Recent Tortoise Locations (30 Dec, 2015)
Recipient Sites - Ivanpah 1
Ivanpah Solar Electric Generating System

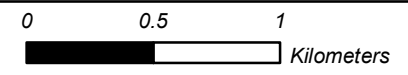


Head Start Tortoises
 BS18 BS39 BS40 BS42 BS43 BS48 BS53 BS63 BS67 BS72
 BS87 BS106 BS112 BS115 BS123 BS175 BS178 BS181 BS182
 BS185 BS188 BS190 BS191 BS193 BS194 BS195 BS196 BS197
 BS198 BS199 BS201 BS203 BS204 BS205 BS208 BS209 BS210
 BS212 BS213 BS214 BS215 BS216 BS219 BS221 BS226 BS227
 BS231 BS233 BS241 BS244 BS247 BS249 BS251 BS252 BS253
 BS254 BS255 BS256 BS259 BS263 BS267 BS268 BS269 BS270
 BS272 BS274 BS276 BS277 BS279 BS280 BS281 BS282 BS283
 BS284 BS285 BS286 BS287 BS288 BS292 BS295 BS296 BS297
 BS298 BS299 BS300 BS302 BS303 BS304 BS307 BS333 BS338
 BS341 BS347 BS348 BS350 BS351 BS352 BS355

BS54 (last seen March 2011), BS98 (last seen May 2012),
 BS200 (last seen May 2012), BS207 (last seen June 2014),
 BS211 (last seen May 2012), BS301 (last seen September 2011)

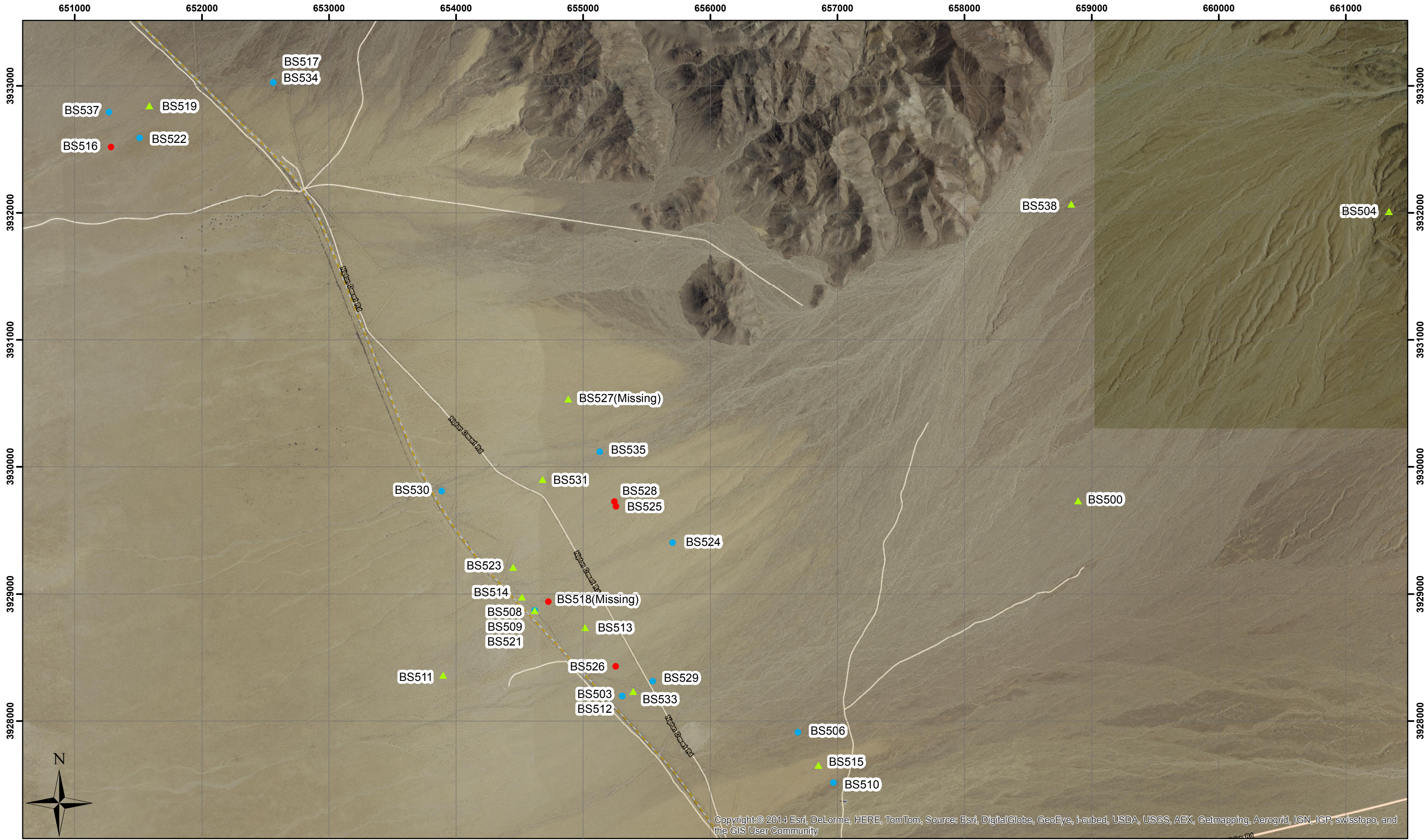
18 Jan, 2016

Site Boundary	Ring Roads	Recent Tortoise Location (Female)	Recent Tortoise Location (Male)
Cleared Areas	Recent Tortoise Location (<160 mm)	Recent Tortoise Location (Unknown Sex)	



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Figure F8
Most Recent Tortoise Locations (30 Dec, 2015)
Recipient Sites - Ivanpah 2 & 3
Ivanpah Solar Electric Generating System



18 Jan, 2016

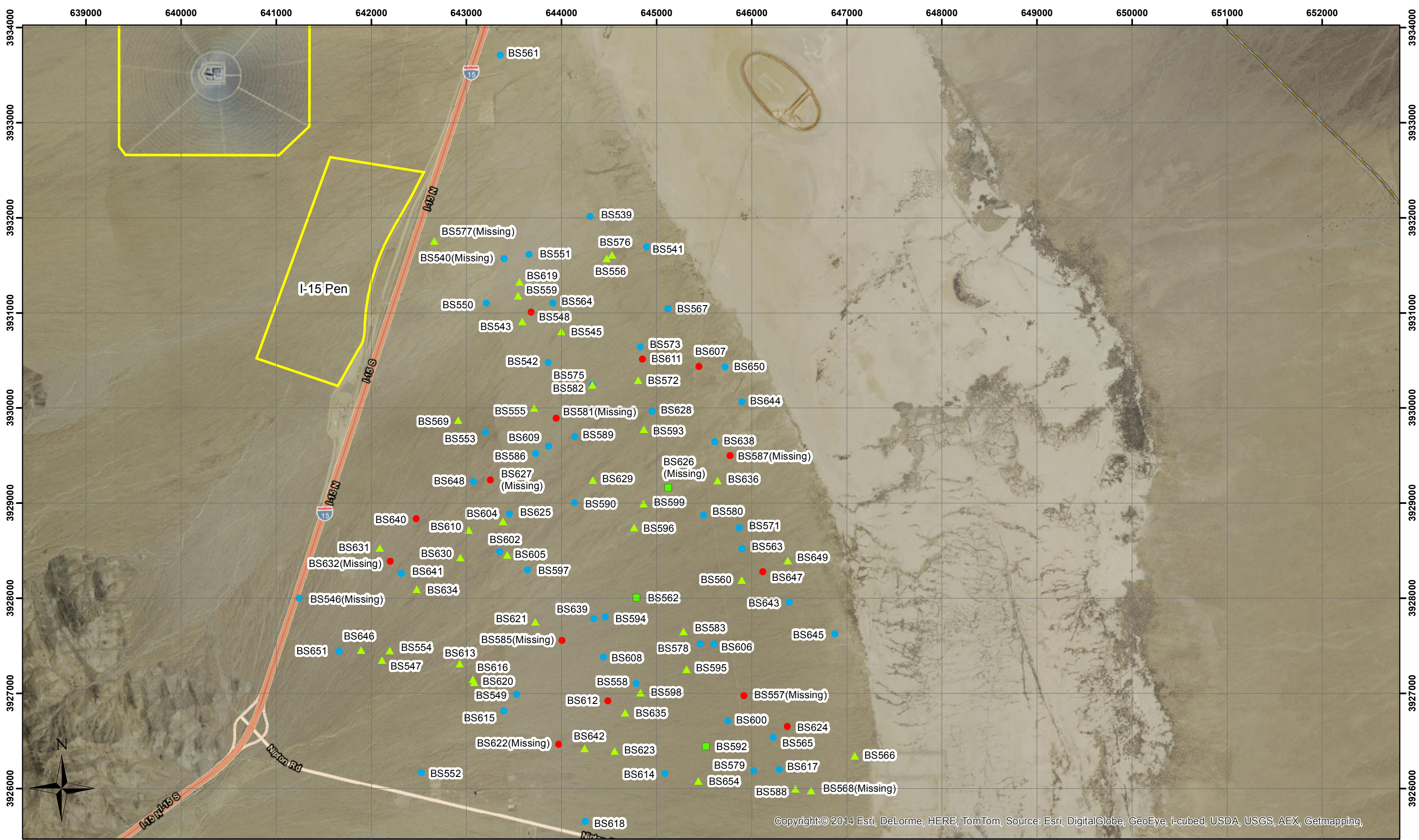
- ▲ Recent Tortoise Location (Female)
- Recent Tortoise Location (Male)
- Recent Tortoise Location (<160mm)
- Recent Tortoise Location (Unknown Sex)

0 0.5 1
Kilometers

This map should not be used for site specific purposes. Proprietary and confidential. For use by Solar Partners I, II, and VIII only.

Figure F9
Most Recent Tortoise Locations (30 Dec, 2015)
Control East
Ivanpah Solar Electric Generating System

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- Site Boundary
- ▲ Recent Tortoise Location (Female)
- Recent Tortoise Location (Male)
- Recent Tortoise Location (<160mm)
- Recent Tortoise Location (Unknown Sex)

0 0.5 1 Kilometers
 This map should not be used for site specific purposes. Proprietary and confidential. For use by Solar Partners I, II, and VIII only.

Figure F10
Most Recent Tortoise Locations (30 Dec, 2015)
Control West
Ivanpah Solar Electric Generating System

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Appendix G

ISEGS 2015 ELISA Results

Table G1: ISEGS 2015 ELISA Results

Tortoise ID	Tortoise Type	Sex	MCL	Sample Date	<i>M. agassizii</i> Result	<i>M. testudineum</i> Result
BS01	Translocatee (Long 2012)	Female	219	15-May-2015	Negative	Negative
BS01	Translocatee (Long 2012)	Female	219	13-Sep-2015	Negative	Negative
BS02	Translocatee (Short 2012)	Male	268	13-May-2015	Negative	Negative
BS02	Translocatee (Short 2012)	Male	268	15-Sep-2015	Negative	Negative
BS04	Translocatee (Short 2011)	Male	262	17-May-2015	Negative	Negative
BS04	Translocatee (Short 2011)	Male	262	12-Sep-2015	Negative	Negative
BS05	Translocatee (Short 2012)	Male	249	16-May-2015	Positive	Positive
BS05	Translocatee (Short 2012)	Male	249	17-Sep-2015	Positive	Positive
BS06	Translocatee (Short 2011)	Male	279	15-May-2015	Negative	Negative
BS06	Translocatee (Short 2011)	Male	279	14-Sep-2015	Negative	Negative
BS07	Resident	Unknown	154	15-May-2015	Negative	Negative
BS07	Resident	Unknown	154	2-Oct-2015	Negative	Negative
BS08	Translocatee (Short 2011)	Female	213	13-May-2015	Positive	Negative
BS08	Translocatee (Short 2011)	Female	213	15-Sep-2015	Negative	Negative
BS09	Translocatee (Short 2012)	Male	258	12-May-2015	Negative	Negative
BS09	Translocatee (Short 2012)	Male	258	15-Sep-2015	Negative	Negative
BS10	Resident	Male	275	17-May-2015	Negative	Negative
BS10	Resident	Male	275	28-Sep-2015	Negative	Negative
BS11	Resident	Female	225	15-May-2015	Negative	Negative
BS11	Resident	Female	225	14-Sep-2015	Negative	Negative
BS12	Resident	Female	225	14-May-2015	Negative	Negative
BS12	Resident	Female	225	14-Sep-2015	Negative	Negative
BS13	Resident	Male	247	13-May-2015	Negative	Negative
BS13	Resident	Male	247	12-Sep-2015	Negative	Negative
BS14	Translocatee (Short 2012)	Female	237	14-May-2015	Negative	Negative
BS14	Translocatee (Short 2012)	Female	237	14-Sep-2015	Negative	Negative
BS16	Resident	Female	230	17-May-2015	Negative	Negative
BS16	Resident	Female	230	12-Sep-2015	Negative	Negative
BS17	Translocatee (Short 2012)	Unknown	169	12-May-2015	Negative	Negative
BS17	Translocatee (Short 2012)	Unknown	169	13-Sep-2015	Negative	Negative
BS18	Translocatee (Juvenile)	Unknown	136	25-Sep-2015	Negative	Negative
BS19	Resident	Female	181	16-May-2015	Negative	Negative
BS19	Resident	Female	181	13-Sep-2015	Negative	Negative
BS21	Translocatee (Short 2011)	Male	256	12-May-2015	Negative	Negative
BS21	Translocatee (Short 2011)	Male	256	13-Sep-2015	Negative	Negative
BS22	Translocatee (Short 2012)	Male	245	16-May-2015	Negative	Negative
BS22	Translocatee (Short 2012)	Male	245	17-Sep-2015	Negative	Negative
BS23	Resident	Female	251	16-May-2015	Negative	Negative
BS23	Resident	Female	251	21-Sep-2015	Negative	Negative
BS25	Translocatee (Short 2012)	Female	218	12-May-2015	Negative	Negative
BS25	Translocatee (Short 2012)	Female	218	14-Sep-2015	Negative	Negative
BS27	Translocatee (Short 2012)	Female	234	15-May-2015	Negative	Negative
BS27	Translocatee (Short 2012)	Female	234	12-Sep-2015	Negative	Negative
BS28	Translocatee (Short 2012)	Female	228	13-May-2015	Negative	Negative
BS28	Translocatee (Short 2012)	Female	228	13-Sep-2015	Negative	Negative
BS29	Translocatee (Long 2012)	Male	247	15-May-2015	Negative	Negative
BS29	Translocatee (Long 2012)	Male	247	12-Sep-2015	Negative	Negative
BS30	Resident	Male	259	14-May-2015	Negative	Negative
BS30	Resident	Male	259	15-Sep-2015	Negative	Negative
BS31	Translocatee (Short 2012)	Female	217	12-May-2015	Negative	Negative
BS31	Translocatee (Short 2012)	Female	217	13-Sep-2015	Negative	Negative
BS32	Translocatee (Long 2012)	Male	258	13-Sep-2015	Negative	Negative
BS33	Resident	Female	232	12-Sep-2015	Negative	Negative
BS37	Translocatee (Long 2012)	Male	275	14-May-2015	Negative	Negative
BS37	Translocatee (Long 2012)	Male	275	14-Sep-2015	Negative	Negative
BS39	Translocatee (Juvenile)	Unknown	115	2-Oct-2015	Negative	Negative
BS40	Translocatee (Juvenile)	Unknown	135	22-Sep-2015	Negative	Negative
BS41	Translocatee (Short 2012)	Female	195	15-May-2015	Negative	Negative
BS41	Translocatee (Short 2012)	Female	195	13-Sep-2015	Negative	Negative
BS42	Translocatee (Juvenile)	Unknown	123	23-May-2015	Negative	Negative
BS42	Translocatee (Juvenile)	Unknown	123	22-Sep-2015	Negative	Negative
BS43	Translocatee (Juvenile)	Unknown	107	28-Sep-2015	Negative	Negative

Tortoise ID	Tortoise Type	Sex	MCL	Sample Date	<i>M. agassizii</i> Result	<i>M. testudineum</i> Result
BS44	Translocatee (Short 2012)	Female	223	12-May-2015	Negative	Negative
BS45	Resident	Female	226	15-May-2015	Negative	Negative
BS45	Resident	Female	226	15-Sep-2015	Negative	Negative
BS46	Translocatee (Short 2011)	Female	229	12-May-2015	Negative	Negative
BS46	Translocatee (Short 2011)	Female	229	18-Sep-2015	Negative	Negative
BS47	Translocatee (Short 2012)	Female	240	13-May-2015	Negative	Negative
BS47	Translocatee (Short 2012)	Female	240	13-Sep-2015	Negative	Negative
BS48	Translocatee (Juvenile)	Unknown	121	22-May-2015	Negative	Negative
BS48	Translocatee (Juvenile)	Unknown	121	23-Sep-2015	Negative	Negative
BS49	Translocatee (Short 2011)	Male	240	17-May-2015	Negative	Negative
BS49	Translocatee (Short 2011)	Male	240	25-Sep-2015	Negative	Negative
BS50	Translocatee (Short 2011)	Male	232	12-Sep-2015	Negative	Negative
BS52	Translocatee (Short 2012)	Male	240	14-May-2015	Negative	Negative
BS52	Translocatee (Short 2012)	Male	240	13-Sep-2015	Negative	Negative
BS53	Translocatee (Juvenile)	Unknown	114	24-May-2015	Negative	Negative
BS53	Translocatee (Juvenile)	Unknown	114	23-Sep-2015	Negative	Negative
BS55	Resident	Female	248	15-May-2015	Negative	Negative
BS55	Resident	Female	248	14-Sep-2015	Negative	Negative
BS56	Resident	Female	237	12-May-2015	Negative	Negative
BS56	Resident	Female	237	20-Sep-2015	Negative	Negative
BS57	Translocatee (Short 2012)	Female	222	12-May-2015	Negative	Negative
BS58	Translocatee (Long 2012)	Female	217	15-May-2015	Negative	Negative
BS58	Translocatee (Long 2012)	Female	217	14-Sep-2015	Negative	Suspect
BS61	Translocatee (Short 2012)	Female	221	17-May-2015	Negative	Negative
BS61	Translocatee (Short 2012)	Female	221	17-Sep-2015	Negative	Negative
BS62	Translocatee (Short 2011)	Male	233	15-May-2015	Negative	Negative
BS62	Translocatee (Short 2011)	Male	233	17-Sep-2015	Positive	Negative
BS64	Translocatee (Short 2012)	Female	210	13-May-2015	Negative	Negative
BS64	Translocatee (Short 2012)	Female	210	17-Sep-2015	Negative	Negative
BS65	Translocatee (Short 2012)	Female	211	13-May-2015	Negative	Negative
BS65	Translocatee (Short 2012)	Female	211	13-Sep-2015	Negative	Negative
BS66	Translocatee (Short 2012)	Female	231	12-May-2015	Negative	Negative
BS66	Translocatee (Short 2012)	Female	231	12-Sep-2015	Suspect	Negative
BS67	Translocatee (Juvenile)	Unknown	142	26-Sep-2015	Negative	Negative
BS68	Translocatee (Short 2012)	Male	262	17-May-2015	Negative	Negative
BS68	Translocatee (Short 2012)	Male	262	13-Sep-2015	Negative	Negative
BS69	Translocatee (Short 2011)	Male	266	15-May-2015	Negative	Negative
BS69	Translocatee (Short 2011)	Male	266	16-Sep-2015	Negative	Negative
BS70	Resident	Unknown	174	30-May-2015	Negative	Negative
BS70	Resident	Unknown	174	16-Sep-2015	Negative	Negative
BS71	Translocatee (Short 2011)	Female	223	15-May-2015	Negative	Negative
BS71	Translocatee (Short 2011)	Female	223	17-Sep-2015	Negative	Negative
BS72	Translocatee (Juvenile)	Unknown	110	22-Sep-2015	Negative	Negative
BS74	Resident	Male	234	12-May-2015	Negative	Negative
BS74	Resident	Male	234	13-Sep-2015	Negative	Negative
BS76	Resident	Female	226	15-May-2015	Negative	Negative
BS76	Resident	Female	226	12-Sep-2015	Negative	Negative
BS77	Translocatee (Short 2012)	Female	227	15-May-2015	Negative	Negative
BS77	Translocatee (Short 2012)	Female	227	13-Sep-2015	Negative	Negative
BS78	Resident	Male	259	15-May-2015	Negative	Negative
BS78	Resident	Male	259	15-Sep-2015	Negative	Negative
BS79	Translocatee (Short 2012)	Female	244	13-May-2015	Negative	Negative
BS79	Translocatee (Short 2012)	Female	244	17-Sep-2015	Negative	Negative
BS80	Translocatee (Short 2011)	Male	265	29-May-2015	Negative	Negative
BS80	Translocatee (Short 2011)	Male	265	13-Sep-2015	Negative	Negative
BS84	Resident	Male	245	29-May-2015	Negative	Negative
BS84	Resident	Male	245	12-Sep-2015	Negative	Negative
BS86	Translocatee (Short 2011)	Male	261	12-May-2015	Negative	Negative
BS86	Translocatee (Short 2011)	Male	261	20-Sep-2015	Negative	Negative
BS87	Translocatee (Juvenile)	Unknown	118	29-Sep-2015	Negative	Negative
BS88	Translocatee (Short 2012)	Male	271	30-May-2015	Negative	Negative
BS88	Translocatee (Short 2012)	Male	271	17-Sep-2015	Negative	Negative

Tortoise ID	Tortoise Type	Sex	MCL	Sample Date	<i>M. agassizii</i> Result	<i>M. testudineum</i> Result
BS89	Resident	Male	265	16-May-2015	Negative	Negative
BS89	Resident	Male	265	14-Sep-2015	Negative	Negative
BS90	Translocatee (Short 2012)	Male	271	17-May-2015	Negative	Negative
BS90	Translocatee (Short 2012)	Male	271	15-Sep-2015	Negative	Negative
BS91	Translocatee (Short 2012)	Female	239	15-May-2015	Negative	Negative
BS91	Translocatee (Short 2012)	Female	239	25-Sep-2015	Negative	Negative
BS92	Translocatee (Short 2012)	Male	268	13-May-2015	Negative	Negative
BS92	Translocatee (Short 2012)	Male	268	17-Sep-2015	Negative	Negative
BS93	Resident	Male	290	30-May-2015	Negative	Negative
BS93	Resident	Male	290	24-Sep-2015	Suspect	Negative
BS94	Translocatee (Long 2012)	Male	242	15-May-2015	Negative	Negative
BS94	Translocatee (Long 2012)	Male	242	14-Sep-2015	Negative	Negative
BS95	Translocatee (Short 2012)	Female	248	13-May-2015	Negative	Negative
BS95	Translocatee (Short 2012)	Female	248	16-Sep-2015	Negative	Negative
BS96	Resident	Female	224	13-May-2015	Negative	Negative
BS96	Resident	Female	224	15-Sep-2015	Negative	Negative
BS97	Translocatee (Short 2012)	Male	222	17-May-2015	Negative	Negative
BS97	Translocatee (Short 2012)	Male	222	14-Sep-2015	Negative	Negative
BS99	Resident	Male	211	16-May-2015	Negative	Negative
BS99	Resident	Male	211	16-Sep-2015	Negative	Negative
BS100	Translocatee (Short 2011)	Male	259	16-May-2015	Suspect	Negative
BS100	Translocatee (Short 2011)	Male	259	12-Sep-2015	Positive	Suspect
BS101	Resident	Male	278	14-May-2015	Negative	Negative
BS101	Resident	Male	278	15-Sep-2015	Negative	Negative
BS102	Resident	Male	269	13-May-2015	Negative	Negative
BS102	Resident	Male	269	16-Sep-2015	Negative	Negative
BS103	Translocatee (Short 2012)	Male	248	16-May-2015	Negative	Negative
BS105	Resident	Male	261	13-May-2015	Negative	Negative
BS105	Resident	Male	261	13-Sep-2015	Negative	Negative
BS106	Translocatee (Juvenile)	Unknown	113	26-Sep-2015	Negative	Negative
BS107	Resident	Female	237	12-May-2015	Negative	Negative
BS107	Resident	Female	237	12-Sep-2015	Negative	Negative
BS108	Resident	Male	273	15-May-2015	Negative	Negative
BS108	Resident	Male	273	15-Sep-2015	Negative	Negative
BS109	Resident	Male	271	14-May-2015	Negative	Negative
BS109	Resident	Male	271	14-Sep-2015	Negative	Negative
BS110	Translocatee (Short 2012)	Male	270	12-May-2015	Negative	Negative
BS110	Translocatee (Short 2012)	Male	270	18-Sep-2015	Negative	Negative
BS111	Resident	Female	234	13-May-2015	Negative	Suspect
BS111	Resident	Female	234	16-Sep-2015	Negative	Negative
BS112	Translocatee (Juvenile)	Unknown	116	23-Sep-2015	Negative	Negative
BS113	Resident	Male	252	13-May-2015	Positive	Suspect
BS113	Resident	Male	252	15-Sep-2015	Positive	Negative
BS114	Translocatee (Short 2011)	Male	268	13-May-2015	Positive	Negative
BS114	Translocatee (Short 2011)	Male	268	20-Sep-2015	Negative	Negative
BS115	Translocatee (Juvenile)	Unknown	111	22-May-2015	Negative	Negative
BS115	Translocatee (Juvenile)	Unknown	111	2-Oct-2015	Negative	Negative
BS116	Translocatee (Short 2011)	Male	232	16-May-2015	Negative	Negative
BS117	Translocatee (Short 2012)	Male	254	14-May-2015	Negative	Negative
BS117	Translocatee (Short 2012)	Male	254	12-Sep-2015	Negative	Negative
BS120	Resident	Male	267	13-May-2015	Negative	Negative
BS120	Resident	Male	267	12-Sep-2015	Negative	Negative
BS123	Translocatee (Juvenile)	Unknown	108	22-Sep-2015	Negative	Negative
BS124	Resident	Male	260	29-May-2015	Negative	Negative
BS124	Resident	Male	260	16-Sep-2015	Negative	Negative
BS125	Resident	Male	255	16-May-2015	Negative	Negative
BS125	Resident	Male	255	16-Sep-2015	Negative	Negative
BS126	Resident	Female	243	14-May-2015	Negative	Negative
BS126	Resident	Female	243	14-Sep-2015	Negative	Negative
BS127	Resident	Female	250	29-May-2015	Negative	Negative
BS127	Resident	Female	250	25-Sep-2015	Negative	Negative
BS128	Resident	Male	256	16-May-2015	Negative	Negative
BS128	Resident	Male	256	16-Sep-2015	Negative	Negative

Tortoise ID	Tortoise Type	Sex	MCL	Sample Date	<i>M. agassizii</i> Result	<i>M. testudineum</i> Result
BS129	Resident	Male	294	17-May-2015	Negative	Negative
BS129	Resident	Male	294	24-Sep-2015	Negative	Negative
BS130	Resident	Male	271	12-May-2015	Negative	Negative
BS130	Resident	Male	271	18-Sep-2015	Negative	Negative
BS131	Resident	Male	274	15-May-2015	Negative	Negative
BS131	Resident	Male	274	15-Sep-2015	Negative	Negative
BS132	Resident	Female	221	15-May-2015	Negative	Negative
BS132	Resident	Female	221	15-Oct-2015	Negative	Negative
BS134	Resident	Female	227	14-May-2015	Negative	Negative
BS134	Resident	Female	227	21-Sep-2015	Negative	Negative
BS135	Resident	Male	236	15-May-2015	Negative	Negative
BS135	Resident	Male	236	18-Sep-2015	Negative	Negative
BS136	Resident	Female	233	14-May-2015	Negative	Negative
BS137	Resident	Female	235	12-May-2015	Negative	Negative
BS137	Resident	Female	235	25-Sep-2015	Negative	Negative
BS138	Resident	Female	221	29-May-2015	Negative	Negative
BS138	Resident	Female	221	13-Sep-2015	Negative	Negative
BS139	Resident	Male	274	29-May-2015	Negative	Negative
BS139	Resident	Male	274	16-Sep-2015	Negative	Negative
BS140	Resident	Female	207	12-May-2015	Negative	Negative
BS140	Resident	Female	207	12-Sep-2015	Negative	Negative
BS141	Translocatee (Short 2012)	Female	228	16-May-2015	Negative	Negative
BS141	Translocatee (Short 2012)	Female	228	18-Sep-2015	Negative	Negative
BS142	Resident	Male	258	29-May-2015	Negative	Negative
BS142	Resident	Male	258	13-Sep-2015	Negative	Negative
BS145	Resident	Male	283	12-May-2015	Negative	Negative
BS145	Resident	Male	283	12-Sep-2015	Negative	Negative
BS146	Resident	Female	218	14-May-2015	Negative	Negative
BS146	Resident	Female	218	27-Sep-2015	Negative	Negative
BS147	Resident	Male	270	17-May-2015	Negative	Negative
BS147	Resident	Male	270	15-Sep-2015	Negative	Negative
BS148	Resident	Male	261	29-May-2015	Negative	Negative
BS148	Resident	Male	261	13-Sep-2015	Negative	Negative
BS149	Resident	Male	262	29-May-2015	Negative	Negative
BS149	Resident	Male	262	17-Sep-2015	Negative	Negative
BS151	Resident	Male	250	30-May-2015	Negative	Negative
BS151	Resident	Male	250	13-Sep-2015	Negative	Negative
BS153	Resident	Female	234	14-May-2015	Negative	Negative
BS153	Resident	Female	234	27-Sep-2015	Negative	Negative
BS154	Resident	Female	238	16-May-2015	Negative	Negative
BS154	Resident	Female	238	25-Sep-2015	Negative	Negative
BS155	Resident	Male	262	14-May-2015	Negative	Negative
BS155	Resident	Male	262	27-Sep-2015	Negative	Negative
BS156	Resident	Female	232	12-May-2015	Negative	Negative
BS156	Resident	Female	232	25-Sep-2015	Negative	Negative
BS157	Translocatee (Long 2012)	Female	203	14-May-2015	Negative	Negative
BS157	Translocatee (Long 2012)	Female	203	17-Sep-2015	Negative	Negative
BS158	Resident	Female	217	14-May-2015	Negative	Negative
BS158	Resident	Female	217	13-Sep-2015	Negative	Negative
BS159	Resident	Female	249	14-May-2015	Negative	Negative
BS159	Resident	Female	249	21-Sep-2015	Negative	Negative
BS160	Resident	Male	251	17-May-2015	Negative	Negative
BS160	Resident	Male	251	27-Sep-2015	Negative	Negative
BS161	Resident	Female	238	29-May-2015	Negative	Negative
BS161	Resident	Female	238	14-Sep-2015	Negative	Negative
BS162	Resident	Female	234	29-May-2015	Negative	Negative
BS162	Resident	Female	234	14-Sep-2015	Negative	Negative
BS163	Resident	Male	216	17-May-2015	Negative	Negative
BS163	Resident	Male	216	27-Sep-2015	Negative	Suspect
BS164	Resident	Male	316	16-May-2015	Negative	Negative
BS164	Resident	Male	316	16-Sep-2015	Negative	Negative
BS165	Resident	Male	252	16-May-2015	Negative	Negative
BS165	Resident	Male	252	14-Sep-2015	Negative	Negative
BS166	Resident	Female	247	15-May-2015	Negative	Negative

Tortoise ID	Tortoise Type	Sex	MCL	Sample Date	<i>M. agassizii</i> Result	<i>M. testudineum</i> Result
BS166	Resident	Female	247	16-Sep-2015	Negative	Negative
BS167	Resident	Male	271	16-May-2015	Negative	Negative
BS168	Resident	Female	249	16-May-2015	Negative	Negative
BS170	Resident	Female	217	16-May-2015	Negative	Negative
BS170	Resident	Female	217	16-Sep-2015	Negative	Negative
BS171	Resident	Male	263	14-May-2015	Negative	Negative
BS171	Resident	Male	263	14-Sep-2015	Negative	Negative
BS172	Resident	Male	243	29-May-2015	Negative	Negative
BS172	Resident	Male	243	15-Sep-2015	Negative	Negative
BS173	Translocatee (Short 2012)	Female	220	13-May-2015	Negative	Negative
BS173	Translocatee (Short 2012)	Female	220	16-Sep-2015	Negative	Negative
BS175	Translocatee (Juvenile)	Unknown	124	14-Oct-2015	Negative	Negative
BS176	Translocatee (Short 2012)	Female	235	15-May-2015	Negative	Negative
BS176	Translocatee (Short 2012)	Female	235	12-Sep-2015	Negative	Negative
BS177	Translocatee (Short 2012)	Female	237	15-May-2015	Negative	Negative
BS177	Translocatee (Short 2012)	Female	237	13-Sep-2015	Negative	Negative
BS178	Translocatee (Juvenile)	Unknown	107	28-Sep-2015	Negative	Negative
BS179	Translocatee (Long 2012)	Male	213	15-May-2015	Negative	Negative
BS179	Translocatee (Long 2012)	Male	213	14-Sep-2015	Negative	Negative
BS181	Translocatee (Juvenile)	Unknown	119	23-Sep-2015	Negative	Negative
BS182	Translocatee (Juvenile)	Unknown	113	28-Sep-2015	Negative	Negative
BS183	Translocatee (Short 2012)	Male	265	17-May-2015	Negative	Negative
BS183	Translocatee (Short 2012)	Male	265	16-Sep-2015	Negative	Negative
BS185	Translocatee (Juvenile)	Unknown	115	30-Sep-2015	Negative	Negative
BS186	Translocatee (Short 2012)	Female	202	13-May-2015	Negative	Negative
BS186	Translocatee (Short 2012)	Female	202	12-Sep-2015	Negative	Negative
BS188	Translocatee (Juvenile)	Unknown	124	22-Sep-2015	Negative	Negative
BS190	Translocatee (Juvenile)	Unknown	119	22-Sep-2015	Negative	Negative
BS191	Translocatee (Juvenile)	Unknown	138	29-Sep-2015	Negative	Suspect
BS193	Translocatee (Juvenile)	Unknown	118	23-Sep-2015	Negative	Negative
BS194	Translocatee (Hatched in Captivity)	Unknown	92	24-Sep-2015	Negative	Negative
BS195	Translocatee (Hatched in Captivity)	Unknown	104	24-Sep-2015	Negative	Negative
BS196	Translocatee (Hatched in Captivity)	Unknown	81	24-Sep-2015	Negative	Negative
BS197	Translocatee (Hatched in Captivity)	Unknown	89	28-Sep-2015	Negative	Negative
BS199	Translocatee (Hatched in Captivity)	Unknown	86	24-Sep-2015	Negative	Negative
BS201	Translocatee (Hatched in Captivity)	Unknown	106	1-Oct-2015	Negative	Negative
BS203	Translocatee (Hatched in Captivity)	Unknown	93	1-Oct-2015	Negative	Negative
BS204	Translocatee (Hatched in Captivity)	Unknown	100	14-Oct-2015	Negative	Negative
BS205	Translocatee (Hatched in Captivity)	Unknown	99	26-Sep-2015	Negative	Negative
BS208	Translocatee (Hatched in Captivity)	Unknown	91	25-Sep-2015	Negative	Negative
BS209	Translocatee (Hatched in Captivity)	Unknown	100	25-Sep-2015	Negative	Negative
BS210	Translocatee (Hatched in Captivity)	Unknown	99	29-Sep-2015	Negative	Suspect
BS212	Translocatee (Hatched in Captivity)	Unknown	89	25-Sep-2015	Negative	Negative
BS213	Translocatee (Hatched in Captivity)	Unknown	100	24-Sep-2015	Negative	Negative
BS214	Translocatee (Hatched in Captivity)	Unknown	102	24-Sep-2015	Negative	Negative
BS215	Translocatee (Hatched in Captivity)	Unknown	106	26-Sep-2015	Negative	Negative
BS216	Translocatee (Hatched in Captivity)	Unknown	95	29-Sep-2015	Negative	Suspect
BS217	Translocatee (Short 2011)	Male	263	14-May-2015	Negative	Negative
BS217	Translocatee (Short 2011)	Male	263	16-Sep-2015	Negative	Negative
BS219	Translocatee (Hatched in Captivity)	Unknown	96	2-Oct-2015	Negative	Negative
BS220	Translocatee (Short 2012)	Male	263	13-May-2015	Negative	Negative
BS220	Translocatee (Short 2012)	Male	263	17-Sep-2015	Negative	Negative
BS221	Translocatee (Hatched in Captivity)	Unknown	87	12-Oct-2015	Negative	Negative
BS223	Translocatee (Short 2012)	Male	222	17-May-2015	Negative	Suspect
BS223	Translocatee (Short 2012)	Male	222	16-Sep-2015	Suspect	Negative
BS226	Translocatee (Hatched in Captivity)	Unknown	104	1-Oct-2015	Negative	Negative
BS227	Translocatee (Hatched in Captivity)	Unknown	122	29-Sep-2015	Negative	Negative
BS230	Resident	Male	222	13-May-2015	Negative	Negative
BS230	Resident	Male	222	14-Sep-2015	Negative	Negative
BS231	Translocatee (Hatched in Captivity)	Unknown	98	14-Oct-2015	Negative	Negative
BS233	Translocatee (Hatched in Captivity)	Unknown	107	29-Sep-2015	Negative	Negative
BS239	Resident	Female	227	13-May-2015	Negative	Negative
BS239	Resident	Female	227	22-Sep-2015	Negative	Negative
BS241	Translocatee (Hatched in Captivity)	Unknown	95	28-Sep-2015	Negative	Negative

Tortoise ID	Tortoise Type	Sex	MCL	Sample Date	<i>M. agassizii</i> Result	<i>M. testudineum</i> Result
BS242	Resident	Male	246	15-May-2015	Negative	Negative
BS242	Resident	Male	246	15-Sep-2015	Negative	Negative
BS244	Translocatee (Juvenile)	Unknown	84	29-Sep-2015	Negative	Negative
BS245	Resident	Male	285	14-May-2015	Negative	Negative
BS245	Resident	Male	285	18-Sep-2015	Negative	Negative
BS246	Translocatee (Short 2012)	Male	188	17-May-2015	Negative	Negative
BS246	Translocatee (Short 2012)	Male	188	27-Sep-2015	Negative	Negative
BS247	Translocatee (Juvenile)	Unknown	125	27-Sep-2015	Negative	Negative
BS248	Resident	Male	265	2-Jun-2015	Negative	Negative
BS248	Resident	Male	265	16-Sep-2015	Suspect	Negative
BS249	Translocatee (Hatched in Captivity)	Unknown	97	1-Oct-2015	Negative	Negative
BS251	Translocatee (Hatched in Captivity)	Unknown	85	30-Sep-2015	Negative	Negative
BS252	Translocatee (Juvenile)	Unknown	132	29-Sep-2015	Negative	Suspect
BS253	Translocatee (Hatched in Captivity)	Unknown	100	30-Sep-2015	Negative	Negative
BS254	Translocatee (Hatched in Captivity)	Unknown	96	29-Sep-2015	Negative	Negative
BS255	Translocatee (Hatched in Captivity)	Unknown	98	29-Sep-2015	Negative	Negative
BS256	Translocatee (Juvenile)	Unknown	108	27-Sep-2015	Negative	Negative
BS257	Translocatee (Short 2012)	Female	181	12-May-2015	Negative	Negative
BS257	Translocatee (Short 2012)	Female	181	17-Sep-2015	Negative	Negative
BS259	Translocatee (Juvenile)	Unknown	142	24-May-2015	Negative	Negative
BS259	Translocatee (Juvenile)	Unknown	142	12-Oct-2015	Suspect	Negative
BS263	Translocatee (Juvenile)	Unknown	105	30-Sep-2015	Negative	Negative
BS265	Translocatee (Long 2012)	Unknown	176	17-May-2015	Negative	Negative
BS265	Translocatee (Long 2012)	Unknown	176	12-Sep-2015	Negative	Negative
BS267	Translocatee (Juvenile)	Unknown	134	30-Sep-2015	Negative	Negative
BS268	Translocatee (Juvenile)	Unknown	114	30-Sep-2015	Negative	Negative
BS269	Translocatee (Juvenile)	Unknown	125	24-May-2015	Negative	Negative
BS269	Translocatee (Juvenile)	Unknown	125	30-Sep-2015	Negative	Negative
BS270	Translocatee (Juvenile)	Unknown	172	2-Oct-2015	Negative	Negative
BS272	Translocatee (Juvenile)	Unknown	130	12-Oct-2015	Negative	Negative
BS274	Translocatee (Juvenile)	Unknown	97	1-Oct-2015	Negative	Negative
BS275	Translocatee (Short 2012)	Female	230	15-May-2015	Negative	Negative
BS275	Translocatee (Short 2012)	Female	230	14-Sep-2015	Negative	Negative
BS276	Translocatee (Juvenile)	Unknown	104	12-Oct-2015	Negative	Negative
BS277	Translocatee (Juvenile)	Unknown	89	1-Oct-2015	Negative	Negative
BS279	Translocatee (Hatched in Captivity)	Unknown	85	1-Oct-2015	Negative	Negative
BS280	Translocatee (Juvenile)	Unknown	132	1-Jun-2015	Negative	Negative
BS280	Translocatee (Juvenile)	Unknown	132	30-Sep-2015	Negative	Suspect
BS281	Translocatee (Hatched in Captivity)	Unknown	98	24-May-2015	Negative	Negative
BS281	Translocatee (Hatched in Captivity)	Unknown	98	12-Oct-2015	Negative	Negative
BS282	Translocatee (Juvenile)	Unknown	137	30-Sep-2015	Negative	Negative
BS283	Translocatee (Juvenile)	Unknown	136	22-May-2015	Negative	Negative
BS283	Translocatee (Juvenile)	Unknown	136	28-Sep-2015	Negative	Negative
BS284	Translocatee (Hatched in Captivity)	Unknown	96	28-Sep-2015	Negative	Negative
BS285	Translocatee (Juvenile)	Unknown	117	23-May-2015	Negative	Negative
BS285	Translocatee (Juvenile)	Unknown	117	27-Sep-2015	Negative	Negative
BS286	Translocatee (Juvenile)	Unknown	109	29-Sep-2015	Negative	Negative
BS288	Translocatee (Juvenile)	Unknown	95	27-Sep-2015	Negative	Negative
BS289	Translocatee (Long 2012)	Female	242	12-May-2015	Negative	Negative
BS289	Translocatee (Long 2012)	Female	242	12-Sep-2015	Negative	Negative
BS290	Translocatee (Short 2012)	Female	224	15-May-2015	Negative	Negative
BS290	Translocatee (Short 2012)	Female	224	14-Sep-2015	Suspect	Negative
BS291	Translocatee (Long 2012)	Female	219	17-May-2015	Negative	Negative
BS291	Translocatee (Long 2012)	Female	219	13-Sep-2015	Negative	Negative
BS292	Translocatee (Juvenile)	Unknown	134	29-Sep-2015	Negative	Suspect
BS293	Translocatee (Long 2012)	Unknown	165	12-May-2015	Negative	Negative
BS293	Translocatee (Long 2012)	Unknown	165	12-Sep-2015	Negative	Negative
BS294	Translocatee (Long 2012)	Unknown	168	17-May-2015	Suspect	Negative
BS294	Translocatee (Long 2012)	Unknown	168	25-Sep-2015	Suspect	Negative
BS295	Translocatee (Juvenile)	Unknown	100	30-Sep-2015	Negative	Negative
BS296	Translocatee (Juvenile)	Unknown	113	30-Sep-2015	Negative	Negative
BS297	Translocatee (Hatched in Captivity)	Unknown	98	1-Oct-2015	Negative	Negative
BS298	Translocatee (Juvenile)	Unknown	104	30-Sep-2015	Negative	Negative
BS299	Translocatee (Hatched in Captivity)	Unknown	98	28-Sep-2015	Negative	Suspect

Tortoise ID	Tortoise Type	Sex	MCL	Sample Date	<i>M. agassizii</i> Result	<i>M. testudineum</i> Result
BS300	Translocatee (Juvenile)	Unknown	107	1-Oct-2015	Negative	Negative
BS302	Translocatee (Juvenile)	Unknown	94	27-Sep-2015	Negative	Negative
BS303	Translocatee (Juvenile)	Unknown	122	30-Sep-2015	Negative	Negative
BS304	Translocatee (Juvenile)	Unknown	99	1-Oct-2015	Negative	Negative
BS307	Translocatee (Juvenile)	Unknown	113	29-Sep-2015	Negative	Negative
BS310	Translocatee (Long 2012)	Male	280	12-May-2015	Negative	Negative
BS310	Translocatee (Long 2012)	Male	280	12-Sep-2015	Negative	Negative
BS314	Resident	Male	234	16-May-2015	Negative	Negative
BS314	Resident	Male	234	17-Sep-2015	Negative	Negative
BS316	Resident	Male	282	30-May-2015	Negative	Negative
BS316	Resident	Male	282	13-Sep-2015	Negative	Negative
BS317	Resident	Male	270	15-May-2015	Negative	Negative
BS317	Resident	Male	270	13-Sep-2015	Negative	Negative
BS320	Resident	Female	228	2-Oct-2015	Negative	Negative
BS321	Resident	Female	231	13-May-2015	Negative	Negative
BS321	Resident	Female	231	22-Sep-2015	Negative	Negative
BS323	Resident	Female	220	14-May-2015	Negative	Negative
BS323	Resident	Female	220	13-Sep-2015	Negative	Negative
BS324	Resident	Female	211	14-May-2015	Negative	Negative
BS324	Resident	Female	211	13-Sep-2015	Negative	Negative
BS327	Resident	Female	242	16-May-2015	Negative	Negative
BS327	Resident	Female	242	28-Sep-2015	Negative	Negative
BS328	Resident	Male	256	13-May-2015	Negative	Negative
BS328	Resident	Male	256	22-Sep-2015	Negative	Negative
BS333	Translocatee (Juvenile)	Unknown	91	1-Oct-2015	Negative	Negative
BS335	Resident	Male	272	30-May-2015	Negative	Negative
BS335	Resident	Male	272	28-Sep-2015	Negative	Negative
BS338	Translocatee (Juvenile)	Unknown	113	30-Sep-2015	Negative	Negative
BS339	Resident	Male	228	12-May-2015	Negative	Negative
BS339	Resident	Male	228	12-Sep-2015	Negative	Negative
BS341	Translocatee (Juvenile)	Unknown	103	24-May-2015	Negative	Negative
BS341	Translocatee (Juvenile)	Unknown	103	29-Sep-2015	Negative	Negative
BS342	Resident	Unknown	110	13-May-2015	Negative	Negative
BS342	Resident	Unknown	110	15-Sep-2015	Negative	Negative
BS345	Resident	Unknown	131	14-May-2015	Negative	Negative
BS345	Resident	Unknown	131	13-Sep-2015	Negative	Negative
BS347	Translocatee (Juvenile)	Unknown	99	29-Sep-2015	Negative	Negative
BS348	Translocatee (Juvenile)	Unknown	107	28-Sep-2015	Negative	Negative
BS350	Translocatee (Juvenile)	Unknown	92	28-Sep-2015	Negative	Negative
BS351	Translocatee (Juvenile)	Unknown	144	1-Oct-2015	Negative	Negative
BS352	Translocatee (Juvenile)	Unknown	135	29-Sep-2015	Negative	Negative
BS354	Resident	Unknown	118	29-May-2015	Negative	Negative
BS354	Resident	Unknown	118	15-Sep-2015	Negative	Negative
BS355	Translocatee (Juvenile)	Unknown	99	28-Sep-2015	Negative	Negative
BS500	Control East	Female	246	28-May-2015	Negative	Negative
BS500	Control East	Female	246	15-Sep-2015	Negative	Negative
BS503	Control East	Male	240	28-May-2015	Negative	Negative
BS503	Control East	Male	240	16-Sep-2015	Negative	Negative
BS504	Control East	Female	219	27-May-2015	Negative	Negative
BS504	Control East	Female	219	15-Sep-2015	Negative	Negative
BS506	Control East	Male	253	2-Jun-2015	Negative	Negative
BS506	Control East	Male	253	14-Sep-2015	Negative	Negative
BS508	Control East	Male	246	1-Jun-2015	Negative	Negative
BS508	Control East	Male	246	15-Sep-2015	Negative	Negative
BS509	Control East	Male	235	27-May-2015	Negative	Negative
BS509	Control East	Male	235	16-Sep-2015	Negative	Negative
BS510	Control East	Male	267	28-May-2015	Negative	Negative
BS510	Control East	Male	267	14-Sep-2015	Negative	Negative
BS511	Control East	Female	222	27-May-2015	Negative	Negative
BS511	Control East	Female	222	16-Sep-2015	Negative	Negative
BS512	Control East	Male	277	28-May-2015	Negative	Negative
BS512	Control East	Male	277	15-Sep-2015	Negative	Negative
BS513	Control East	Female	229	28-May-2015	Negative	Negative

Tortoise ID	Tortoise Type	Sex	MCL	Sample Date	<i>M. agassizii</i> Result	<i>M. testudineum</i> Result
BS513	Control East	Female	229	15-Sep-2015	Negative	Negative
BS514	Control East	Female	226	16-Sep-2015	Negative	Negative
BS515	Control East	Female	217	28-May-2015	Negative	Negative
BS515	Control East	Female	217	14-Sep-2015	Negative	Negative
BS517	Control East	Male	248	28-May-2015	Negative	Negative
BS517	Control East	Male	248	14-Sep-2015	Negative	Negative
BS519	Control East	Female	207	28-May-2015	Negative	Negative
BS519	Control East	Female	207	14-Sep-2015	Negative	Suspect
BS521	Control East	Female	182	27-May-2015	Negative	Negative
BS521	Control East	Female	182	15-Sep-2015	Negative	Negative
BS522	Control East	Male	265	28-May-2015	Negative	Negative
BS522	Control East	Male	265	14-Sep-2015	Negative	Negative
BS523	Control East	Female	228	28-May-2015	Negative	Negative
BS523	Control East	Female	228	15-Sep-2015	Negative	Negative
BS524	Control East	Male	260	27-May-2015	Negative	Negative
BS524	Control East	Male	260	15-Sep-2015	Negative	Negative
BS529	Control East	Male	238	1-Jun-2015	Negative	Negative
BS529	Control East	Male	238	14-Sep-2015	Negative	Negative
BS530	Control East	Male	234	27-May-2015	Negative	Negative
BS530	Control East	Male	234	16-Sep-2015	Negative	Negative
BS531	Control East	Female	205	27-May-2015	Negative	Negative
BS531	Control East	Female	205	15-Sep-2015	Negative	Negative
BS533	Control East	Female	210	28-May-2015	Negative	Negative
BS533	Control East	Female	210	16-Sep-2015	Negative	Negative
BS534	Control East	Male	226	15-Sep-2015	Negative	Negative
BS535	Control East	Male	243	27-May-2015	Negative	Negative
BS535	Control East	Male	243	15-Sep-2015	Negative	Negative
BS537	Control East	Male	241	28-May-2015	Negative	Negative
BS537	Control East	Male	241	14-Sep-2015	Negative	Negative
BS538	Control East	Female	227	15-Sep-2015	Negative	Negative
BS539	Control West	Male	244	19-May-2015	Negative	Negative
BS539	Control West	Male	244	17-Sep-2015	Negative	Negative
BS541	Control West	Male	248	19-May-2015	Negative	Negative
BS541	Control West	Male	248	17-Sep-2015	Negative	Negative
BS542	Control West	Male	269	18-May-2015	Negative	Negative
BS542	Control West	Male	269	22-Sep-2015	Negative	Negative
BS543	Control West	Female	246	20-May-2015	Negative	Negative
BS543	Control West	Female	246	17-Sep-2015	Negative	Negative
BS545	Control West	Female	204	18-May-2015	Negative	Negative
BS545	Control West	Female	204	24-Sep-2015	Negative	Negative
BS548	Control West	Unknown	119	18-Sep-2015	Negative	Negative
BS549	Control West	Male	230	16-May-2015	Negative	Negative
BS549	Control West	Male	230	23-Sep-2015	Negative	Negative
BS550	Control West	Male	279	21-May-2015	Negative	Negative
BS550	Control West	Male	279	18-Sep-2015	Negative	Negative
BS551	Control West	Male	268	21-May-2015	Negative	Negative
BS551	Control West	Male	268	18-Sep-2015	Negative	Negative
BS552	Control West	Male	283	23-May-2015	Positive	Negative
BS552	Control West	Male	283	22-Sep-2015	Positive	Negative
BS553	Control West	Male	257	20-May-2015	Negative	Negative
BS553	Control West	Male	257	17-Sep-2015	Negative	Negative
BS554	Control West	Female	221	17-May-2015	Negative	Negative
BS554	Control West	Female	221	16-Sep-2015	Negative	Negative
BS555	Control West	Female	223	25-May-2015	Negative	Negative
BS555	Control West	Female	223	20-Sep-2015	Negative	Negative
BS556	Control West	Female	215	18-May-2015	Negative	Negative
BS556	Control West	Female	215	17-Sep-2015	Negative	Negative
BS558	Control West	Male	243	19-May-2015	Negative	Negative
BS558	Control West	Male	243	22-Sep-2015	Negative	Negative
BS559	Control West	Female	234	21-May-2015	Negative	Negative
BS559	Control West	Female	234	18-Sep-2015	Negative	Negative
BS560	Control West	Female	232	18-May-2015	Negative	Negative
BS560	Control West	Female	232	20-Sep-2015	Negative	Negative
BS561	Control West	Male	196	25-May-2015	Negative	Negative

Tortoise ID	Tortoise Type	Sex	MCL	Sample Date	<i>M. agassizii</i> Result	<i>M. testudineum</i> Result
BS561	Control West	Male	196	17-Sep-2015	Negative	Negative
BS562	Control West	Unknown	168	20-May-2015	Negative	Negative
BS562	Control West	Unknown	168	20-Sep-2015	Negative	Negative
BS563	Control West	Male	268	20-Sep-2015	Negative	Negative
BS564	Control West	Male	268	21-May-2015	Suspect	Negative
BS564	Control West	Male	268	24-Sep-2015	Negative	Negative
BS565	Control West	Male	256	18-May-2015	Negative	Negative
BS565	Control West	Male	256	16-Sep-2015	Negative	Negative
BS566	Control West	Female	236	18-May-2015	Negative	Negative
BS566	Control West	Female	236	16-Sep-2015	Negative	Negative
BS567	Control West	Male	267	31-May-2015	Negative	Negative
BS567	Control West	Male	267	17-Sep-2015	Negative	Negative
BS568	Control West	Female	197	23-May-2015	Negative	Negative
BS568	Control West	Female	197	17-Sep-2015	Negative	Negative
BS569	Control West	Female	236	25-May-2015	Negative	Negative
BS569	Control West	Female	236	17-Sep-2015	Negative	Negative
BS570	Control West	Male	257	19-May-2015	Negative	Negative
BS571	Control West	Male	259	21-May-2015	Negative	Negative
BS571	Control West	Male	259	20-Sep-2015	Negative	Negative
BS572	Control West	Female	234	18-May-2015	Negative	Negative
BS572	Control West	Female	234	18-Sep-2015	Negative	Negative
BS573	Control West	Male	250	18-May-2015	Negative	Negative
BS573	Control West	Male	250	23-Sep-2015	Negative	Negative
BS575	Control West	Male	260	18-May-2015	Negative	Negative
BS575	Control West	Male	260	22-Sep-2015	Negative	Negative
BS576	Control West	Female	244	19-May-2015	Negative	Negative
BS576	Control West	Female	244	17-Sep-2015	Negative	Negative
BS577	Control West	Female	227	20-May-2015	Negative	Negative
BS578	Control West	Male	269	20-May-2015	Negative	Negative
BS578	Control West	Male	269	21-Sep-2015	Negative	Negative
BS579	Control West	Male	218	18-May-2015	Negative	Negative
BS579	Control West	Male	218	17-Sep-2015	Negative	Negative
BS580	Control West	Male	184	21-May-2015	Negative	Negative
BS580	Control West	Male	184	20-Sep-2015	Negative	Negative
BS582	Control West	Female	227	18-May-2015	Negative	Negative
BS582	Control West	Female	227	18-Sep-2015	Negative	Negative
BS583	Control West	Female	215	18-May-2015	Negative	Negative
BS583	Control West	Female	215	21-Sep-2015	Negative	Negative
BS586	Control West	Male	275	19-May-2015	Negative	Negative
BS586	Control West	Male	275	22-Sep-2015	Negative	Negative
BS588	Control West	Female	186	18-May-2015	Negative	Negative
BS588	Control West	Female	186	24-Sep-2015	Negative	Negative
BS589	Control West	Male	242	20-May-2015	Negative	Negative
BS589	Control West	Male	242	22-Sep-2015	Negative	Negative
BS590	Control West	Male	276	19-May-2015	Negative	Negative
BS590	Control West	Male	276	21-Sep-2015	Negative	Negative
BS592	Control West	Unknown	171	20-May-2015	Negative	Negative
BS592	Control West	Unknown	171	22-Sep-2015	Negative	Negative
BS593	Control West	Female	219	19-May-2015	Negative	Negative
BS593	Control West	Female	219	18-Sep-2015	Negative	Negative
BS594	Control West	Male	195	20-May-2015	Negative	Negative
BS594	Control West	Male	195	21-Sep-2015	Negative	Negative
BS595	Control West	Female	222	20-May-2015	Negative	Negative
BS595	Control West	Female	222	21-Sep-2015	Negative	Negative
BS596	Control West	Female	232	20-May-2015	Negative	Negative
BS596	Control West	Female	232	21-Sep-2015	Negative	Negative
BS597	Control West	Male	273	25-May-2015	Negative	Negative
BS597	Control West	Male	273	20-Sep-2015	Negative	Negative
BS598	Control West	Female	236	21-May-2015	Negative	Negative
BS598	Control West	Female	236	18-Sep-2015	Negative	Negative
BS599	Control West	Female	219	21-May-2015	Negative	Negative
BS599	Control West	Female	219	21-Sep-2015	Negative	Negative
BS600	Control West	Male	257	19-May-2015	Negative	Negative
BS600	Control West	Male	257	18-Sep-2015	Negative	Negative

Tortoise ID	Tortoise Type	Sex	MCL	Sample Date	<i>M. agassizii</i> Result	<i>M. testudineum</i> Result
BS602	Control West	Male	216	25-May-2015	Negative	Negative
BS602	Control West	Male	216	17-Sep-2015	Negative	Negative
BS604	Control West	Female	195	25-May-2015	Negative	Negative
BS604	Control West	Female	195	17-Sep-2015	Negative	Negative
BS605	Control West	Female	228	25-May-2015	Negative	Negative
BS605	Control West	Female	228	18-Sep-2015	Negative	Negative
BS606	Control West	Male	222	19-May-2015	Negative	Negative
BS606	Control West	Male	222	21-Sep-2015	Negative	Negative
BS607	Control West	Unknown	132	18-May-2015	Negative	Unknown
BS607	Control West	Unknown	132	23-Sep-2015	Negative	Negative
BS608	Control West	Male	243	20-May-2015	Negative	Negative
BS608	Control West	Male	243	20-Sep-2015	Negative	Negative
BS609	Control West	Male	245	20-May-2015	Negative	Negative
BS609	Control West	Male	245	18-Sep-2015	Negative	Negative
BS610	Control West	Female	205	25-May-2015	Negative	Negative
BS610	Control West	Female	205	20-Sep-2015	Negative	Negative
BS611	Control West	Unknown	139	18-May-2015	Negative	Negative
BS611	Control West	Unknown	139	23-Sep-2015	Negative	Negative
BS612	Control West	Unknown	122	19-May-2015	Negative	Negative
BS612	Control West	Unknown	122	17-Sep-2015	Negative	Negative
BS612	Control West	Unknown	122	22-Sep-2015	Negative	Negative
BS613	Control West	Female	223	16-May-2015	Negative	Negative
BS613	Control West	Female	223	21-Sep-2015	Negative	Negative
BS614	Control West	Male	271	21-May-2015	Negative	Negative
BS614	Control West	Male	271	24-Sep-2015	Negative	Negative
BS615	Control West	Male	283	16-May-2015	Negative	Negative
BS615	Control West	Male	283	23-Sep-2015	Negative	Negative
BS616	Control West	Female	249	31-May-2015	Negative	Negative
BS616	Control West	Female	249	23-Sep-2015	Negative	Negative
BS617	Control West	Male	220	18-May-2015	Negative	Negative
BS617	Control West	Male	220	16-Sep-2015	Negative	Negative
BS618	Control West	Male	276	23-May-2015	Negative	Negative
BS618	Control West	Male	276	24-Sep-2015	Negative	Negative
BS619	Control West	Female	220	21-May-2015	Negative	Negative
BS619	Control West	Female	220	18-Sep-2015	Negative	Negative
BS620	Control West	Female	203	16-May-2015	Negative	Negative
BS620	Control West	Female	203	23-Sep-2015	Negative	Negative
BS621	Control West	Female	201	19-May-2015	Negative	Negative
BS621	Control West	Female	201	20-Sep-2015	Negative	Negative
BS623	Control West	Female	225	21-May-2015	Suspect	Negative
BS623	Control West	Female	225	18-Sep-2015	Positive	Negative
BS624	Control West	Unknown	147	18-May-2015	Negative	Negative
BS624	Control West	Unknown	147	16-Sep-2015	Negative	Negative
BS625	Control West	Male	275	25-May-2015	Negative	Negative
BS625	Control West	Male	275	17-Sep-2015	Negative	Negative
BS628	Control West	Male	231	19-May-2015	Negative	Negative
BS628	Control West	Male	231	23-Sep-2015	Negative	Negative
BS629	Control West	Female	195	19-May-2015	Negative	Negative
BS629	Control West	Female	195	21-Sep-2015	Negative	Negative
BS630	Control West	Female	214	25-May-2015	Negative	Negative
BS630	Control West	Female	214	18-Sep-2015	Negative	Negative
BS631	Control West	Female	226	25-May-2015	Negative	Negative
BS631	Control West	Female	226	21-Sep-2015	Negative	Negative
BS633	Control West	Unknown	115	25-May-2015	Negative	Negative
BS634	Control West	Female	183	25-May-2015	Negative	Negative
BS634	Control West	Female	183	20-Sep-2015	Negative	Negative
BS635	Control West	Female	207	19-May-2015	Negative	Negative
BS635	Control West	Female	207	18-Sep-2015	Negative	Negative
BS636	Control West	Female	278	18-Sep-2015	Negative	Negative
BS638	Control West	Male	261	20-May-2015	Negative	Negative
BS638	Control West	Male	261	18-Sep-2015	Negative	Negative
BS639	Control West	Male	227	19-May-2015	Negative	Negative
BS639	Control West	Male	227	20-Sep-2015	Negative	Negative
BS640	Control West	Unknown	115	25-May-2015	Negative	Negative

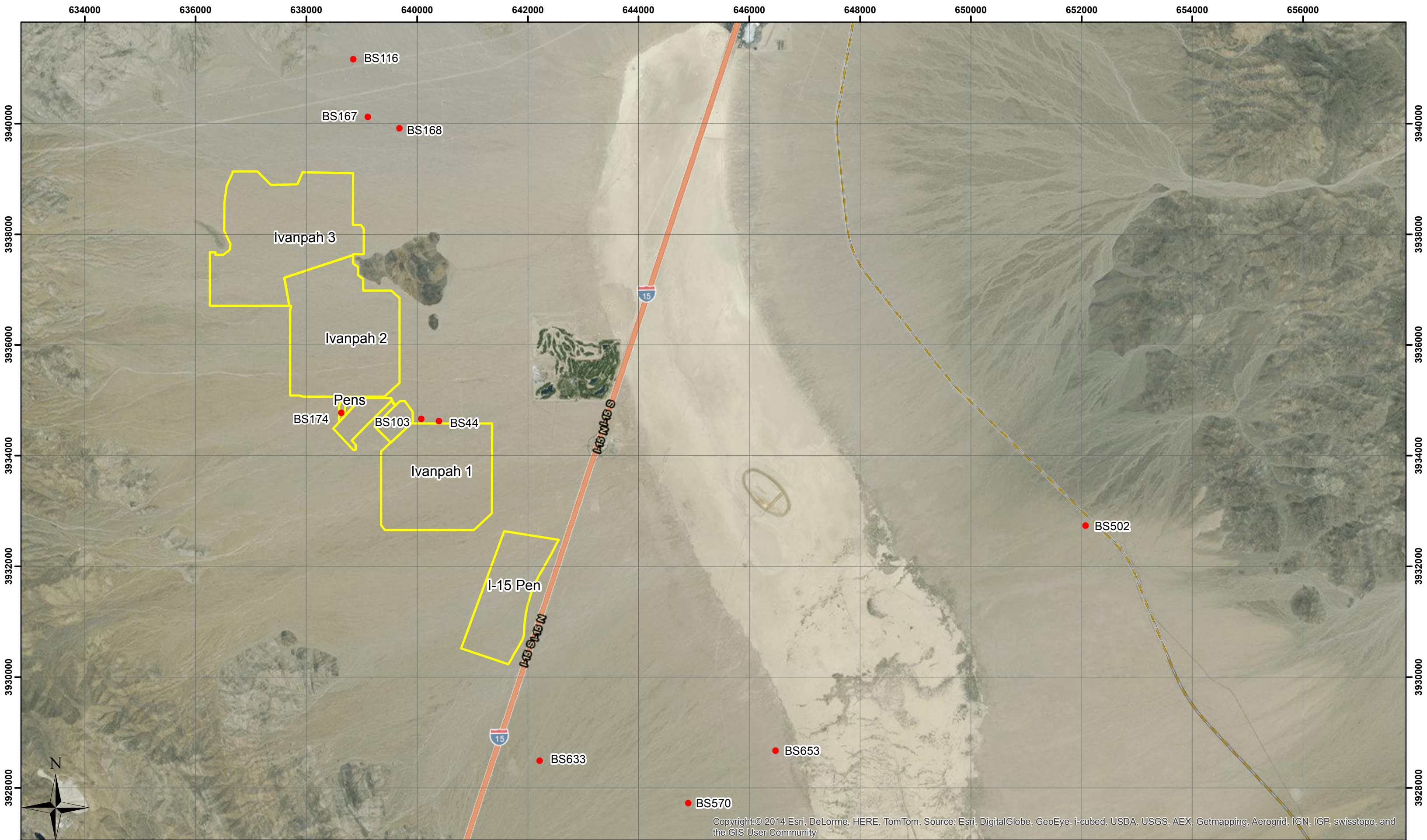
Tortoise ID	Tortoise Type	Sex	MCL	Sample Date	<i>M. agassizii</i> Result	<i>M. testudineum</i> Result
BS640	Control West	Unknown	115	17-Sep-2015	Negative	Negative
BS641	Control West	Male	237	25-May-2015	Negative	Negative
BS641	Control West	Male	237	21-Sep-2015	Negative	Negative
BS642	Control West	Female	195	21-May-2015	Negative	Negative
BS642	Control West	Female	195	17-Sep-2015	Negative	Negative
BS643	Control West	Male	225	21-May-2015	Negative	Negative
BS643	Control West	Male	225	23-Sep-2015	Negative	Negative
BS644	Control West	Male	267	20-May-2015	Negative	Negative
BS644	Control West	Male	267	18-Sep-2015	Negative	Negative
BS645	Control West	Male	271	18-May-2015	Negative	Negative
BS645	Control West	Male	271	2-Oct-2015	Negative	Negative
BS646	Control West	Female	231	17-May-2015	Negative	Negative
BS646	Control West	Female	231	16-Sep-2015	Negative	Negative
BS647	Control West	Unknown	124	21-May-2015	Negative	Negative
BS647	Control West	Unknown	124	23-Sep-2015	Negative	Negative
BS648	Control West	Male	264	25-May-2015	Negative	Negative
BS648	Control West	Male	264	18-Sep-2015	Negative	Negative
BS649	Control West	Female	251	21-May-2015	Negative	Negative
BS649	Control West	Female	251	23-Sep-2015	Negative	Negative
BS650	Control West	Male	273	18-May-2015	Negative	Negative
BS650	Control West	Male	273	18-Sep-2015	Negative	Negative
BS651	Control West	Male	255	31-May-2015	Negative	Negative
BS651	Control West	Male	255	16-Sep-2015	Negative	Negative
BS653	Control West	Male	216	18-May-2015	Negative	Negative
BS654	Control West	Female	198	20-May-2015	Negative	Negative
BS654	Control West	Female	198	23-Sep-2015	Negative	Negative

Appendix H

Summary of Tortoise Fatalities Discovered in 2015

Table H1: ISEGS 2015 Tortoise Fatalities

Tort ID	Tortoise Type	Sex	MCL	Date Carcass Found	Suspected Cause of Death
BS174	Translocatee (Juvenile)	Unknown	106	13-Apr-2015	Flipped on back
BS502	Control East	Female	215	27-May-2015	Canid
BS633	Control West	Unknown	115	31-May-2015	Canid
BS44	Translocatee (Short 2012)	Female	223	24-Jun-2015	Unknown
BS653	Control West	Male	216	7-Jul-2015	Unknown
BS103	Translocatee (Short 2012)	Male	248	27-Jul-2015	Hyperthermia; Flipped on back
BS570	Control West	Male	257	3-Aug-2015	Unknown
BS116	Translocatee (Short 2011)	Male	232	12-Aug-2015	Canid
BS168	Resident	Female	249	1-Sep-2015	Canid
BS167	Resident	Male	271	8-Sep-2015	Canid



● **Tortoise Fatality**
 Site Boundary
 18 Jan, 2016

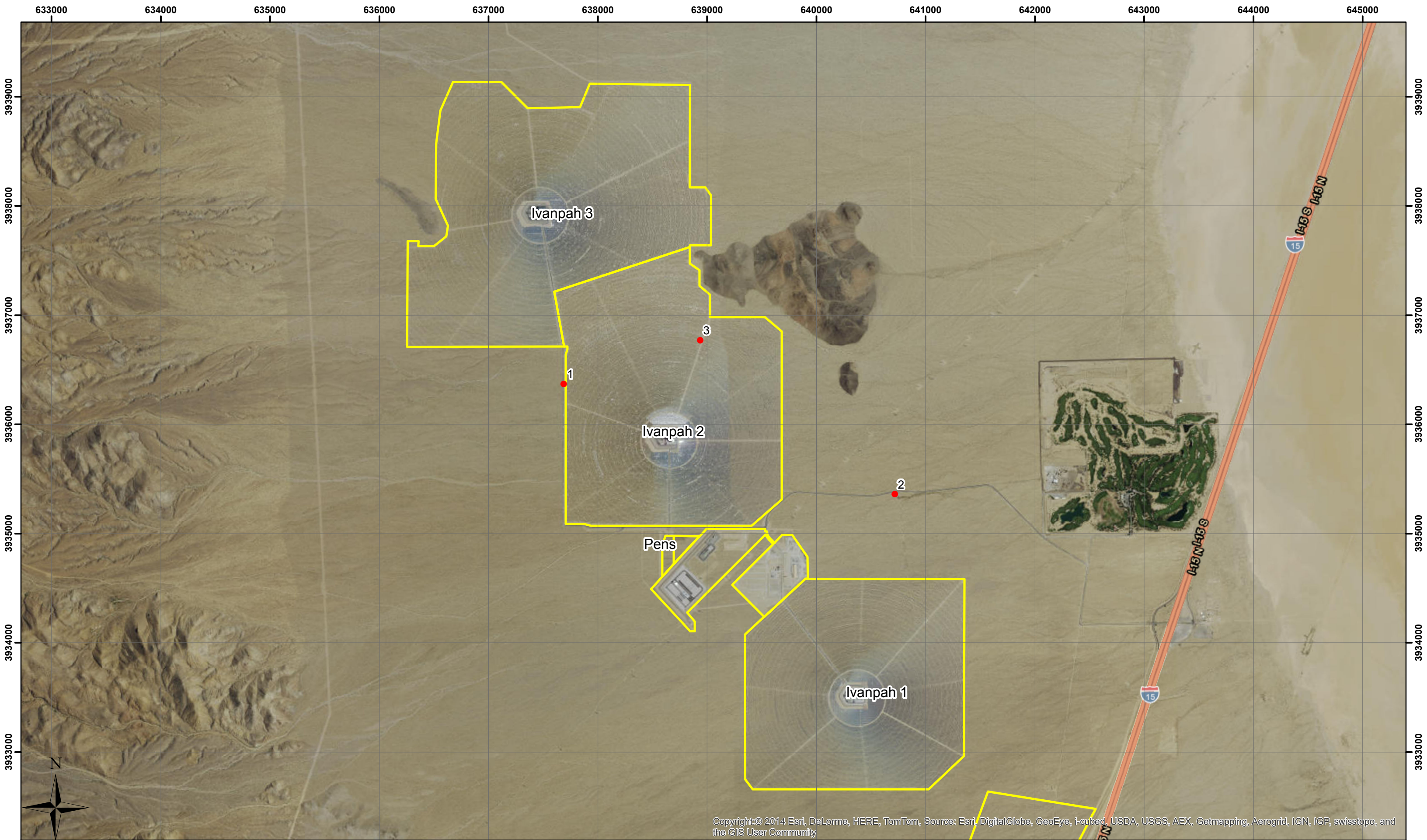
0 1 2 Kilometers
This map should not be used for site specific purposes. Proprietary and confidential. For use by Solar Partners I, II, and VIII only.

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Figure H2
Tortoise Fatality Locations
January 1 - December 31, 2015
Ivanpah Solar Electric Generating System

Appendix I

Map of Mammal Fatality Locations



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● Kit Fox Fatality
 Site Boundary
 18 Jan, 2016

0 0.5 1 Kilometers

This map should not be used for site specific purposes. Proprietary and confidential. For use by Solar Partners I, II, and VIII only.

Figure I1
Kit Fox Fatality Locations
January 1 - December 31, 2015
Ivanpah Solar Electric Generating System

Appendix H

Condition of Certification BIO-13

Weed Management Plan Annual Report

**Ivanpah Solar Electric Generating System
California Energy Commission (07-AFC-5C)
Bureau of Land Management
(CACA-48668, 49502, 49503, and 49504)
Conditions of Certification BIO-13**

**Annual Biological Report
January 1, 2015 – December 31, 2015
Reporting Period
Submitted
January 31, 2016**

Prepared by: Designated Biologist on behalf of Solar Partners I, II, VIII LLC

**100302 Yates Well Road
Nipton, CA 92364**

Table of Contents

Introduction	3
Weed Management Activities	3
Table 1. Summary of Noxious Weed Species Observed During 2015 at ISEGS	4

Introduction

This annual compliance report pertains to weed management activities at Ivanpah Solar Electric Generating System (ISEGS). Compliance with this plan is required by the Bureau of Land Management Right-of-Way Grants, California Energy Commissions (CEC) Conditions of Certification (COC's) BIO-13, and Revised 2011 United States Fish and Wildlife Service (USFWS) Biological Opinion.

Weed Management Activities

The Weed Management Plan's protocols continue to be an effective method at identifying and controlling weed establishment at ISEGS facility in 2015. Weed establishment early in the project was anticipated to occur as a result of the disturbance areas created by construction of the ISEGS facility. Weed management will continue for the first several years to mitigate the increased potential of weed establishment associated with construction disturbance. In 2015 weeds identified at the facility were manually removed and disposed of offsite by the Designated Biologist.

Biological monitors and/or the Designated Biologist conducted semi-monthly weed surveys throughout the site during the active growing season (March through August) in accordance with CEC COC BIO-13 requirements. Data collected included the location, type of noxious weeds, and if the weed went to seed for reporting to the designated biologist. In addition to the data, the plants were collected and transferred to the Designated Biologist disposal. All weed surveys were implemented and completed according to the Weed Management Plan (Revision 2) and 2011 USFWS Biological Opinion (8-8-10-F-24R).

Fourteen noxious weed species and 3,062 individuals were found throughout the project site in 2015. Not all of these species meet the criteria of the Weed Management Plan's target weed species, but all were treated as noxious weeds and removed from the facility. See Table 1 for the number of individuals of each species removed in 2015. The fourteen noxious weed species were: Field bindweed (*Convolvulus arvensis*), Fivehook Bassia (*Bassia hyssopifolia*), Halogeton (*Halogeton glomeratus*), Indian hedge mustard (*Sisymbrium orientale*), Kochia (*Kochia scoparia*), London rocket (*Sisymbrium irio*), Mustard species (*Sisymbrium* species), Puncture Vine (*Tribulus terrestris*), Russian thistle (*Salsola tragus*), Sahara mustard (*Brassica tournefortii*), Sow Thistle (*Sonchus oleraceus* and/or *asper*), Stinking Chamomile (*Anthemis cotula*), Tamarisk (*Tamarix ramossisma*), and Tumbling mustard (*Sisymbrium altissimum*)

Table 1. Summary of Noxious Weed Species Observed During 2015 at ISEGS

Noxious Weed Species	Colosseum Road	CLA-E	CLA-W	Ivanpah 1	Ivanpah 2	Ivanpah 3	Total per Species
Field bindweed	0	10	0	0	0	0	10
Fivehook Bassia	0	1	0	0	0	0	1
Halogeton	215	0	1	0	0	0	216
Indian hedge mustard	0	0	0	0	0	4	4
Kochia	2	1	0	0	0	0	3
London Rocket	0	58	155	2	2	922	1139
Mustard species	0	0	0	0	0	0	0
Puncture vine	0	162	2	1	2	139	306
Russian thistle	584	185	35	17	527	5	1353
Sahara mustard	0	0	0	0	11	0	11
Sow Thistle	2	7	0	2	0	0	11
Stinking Chamomile	0	0	0	0	0	2	2
Tamarisk	0	0	3	0	0	0	3
Tumbling mustard	0	3	0	0	0	0	3
Total per Location	803	427	196	22	542	1072	
Total Plants Observed and Removed During Operations							3,062

In 2015, a total of 3,062 individual weeds were removed from project site, as compared to 4,436 individuals removed from the project site in 2014. The decrease in the number of weed species in 2015 is likely caused by a decrease in soil disturbance since construction is now completed. In addition, some individual weeds in 2014 went to seed prior to identification. As a result, weeds were expected to establish in these areas. Thus, monitoring was conducted more frequently in these areas to decrease the potential for weed establishment. In addition, rain events in spring and summer did not prolonged the growing season to allow for establishment of summer and fall annual species. During 2015 the locations of all weed species identified as going to seed were recorded to establish areas for additional monitoring in 2016.

Appendix I

Condition of Certification BLO-14

**Revegetation Annual Monitoring
Report for 8.84 Acres of Short-
Term Disturbance**

2015 Annual Report

Revegetation Monitoring Report for 48.94 Acres of Short-term Disturbance Ivanpah Solar Electric Generating System San Bernardino County, California (BLM ROW: CACA-49502)

Prepared for
Solar Partners II, LLC; Solar Partners I, LLC;
and Solar Partners VIII, LLC

January 2016

Prepared by
CH2MHILL®
2485 Natomas Park Drive
Sacramento, California 95833

Contents

Section	Page
1.0 Introduction	1-1
1.1 2015 Revegetation.....	1-1
2.0 Methods.....	2-1
2.1 Revegetation Monitoring and Progress Assessment.....	2-1
2.1.1 Vegetation Sampling.....	2-1
2.2 Data Analysis.....	2-3
2.2.1 Species Richness Calculations.....	2-3
2.2.2 Species Diversity Calculations.....	2-3
2.2.3 Progress Criteria.....	2-3
2.2.4 Schedule and Reporting.....	2-4
2.3 Weed Management.....	2-4
3.0 Results.....	3-1
3.1 Revegetation Assessment.....	3-1
3.1.1 Dates and Staff.....	3-1
3.2 Survey Findings	3-1
3.2.1 Initial Establishment: Species Composition.....	3-1
3.2.2 Perennial Density.....	3-2
3.2.3 Perennial Cover.....	3-3
3.2.4 Perennial Species Richness and Diversity	3-3
3.2.5 Survivorship	3-4
3.2.6 Relevé Plots.....	3-5
3.2.7 Photographic Documentation	3-5
3.2.8 Weed Management.....	3-5
4.0 Discussion.....	4-1
4.1.1 Weed Management.....	4-2
4.2 Long-term Monitoring Schedule.....	4-2
4.2.1 Revegetation.....	4-2
4.2.2 Weeds	4-2
4.3 Remaining Revegetation.....	4-3
5.0 References.....	5-1

Appendices

A	Baseline Site Photographs
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Tables

- 2-1 Revegetation Monitoring Sampling Locations and Acreages
- 2-2 Success Criteria for Perennial Cover and Richness Values
- 2-3 Revegetation Success Criteria at Years 2, 5 and 8
- 3-1 Most Abundant Perennial Plant Taxa in Disturbed and Undisturbed Sites, Ordered by Percent Cover
- 3-2 Perennial Density in Disturbed and Undisturbed Sample Sites
- 3-3 Percent Perennial Cover in Disturbed and Undisturbed Sample Sites during 2015
- 3-4 Perennial Species Richness in Disturbed and Undisturbed Sample Sites during 2015
- 3-5 Perennial Diversity in Disturbed and Undisturbed Sample Sites during 2015
- 3-6 Perennial Survivorship in NGL Sample Sites between 2014 and 2015
- 3-7 Perennial Survivorship in CLA Sample Sites between 2013 and 2015
- 3-8 Relevé Plots Observed Perennial Species List on Undisturbed Areas during 2015
- 4-1 2015 Monitoring Results Compared to Success Criteria
- 4-2 Short-term Duration Weed Monitoring Schedule
- 4-3 Weed Monitoring Schedule

Graphs

- 3-1 Perennial Density over Time

Figures

- 1 2015 Annual Revegetation Monitoring Locations

Introduction

This report presents the results of the annual revegetation monitoring of 48.94 acres of short-term and temporary disturbance within the Common Logistics Area (CLA) and shared ancillary facilities for the Ivanpah Solar Electric Generating System (ISEGS). All sites were treated according to the restoration measures prescribed in the project-specific *Closure, Revegetation and Rehabilitation Plan for Ivanpah Solar Electric Generating System* (Revegetation Plan), as required by the Bureau of Land Management Right-of-Way Grant (ROW) and the California Energy Commission's (CEC) Condition of Certification BIO-14. The ROW grant provides independent reclamation bond numbers for each independent part of the facility. The reclamation bond numbers for the short-term and temporary disturbance discussed in this report are included in the Common Logistic Area (CLA) and common facilities (BLM ROW CACA-49502).

Annual revegetation monitoring was staggered depending on when disturbance was complete. This report provides Year-1, Year-2 and Year-3 monitoring results. Year-1 monitoring occurred on the short-term disturbance of 40.1 acres treated in the Commons East or Common Logistic Area (CLA), completed in 2015. Year-2 monitoring was conducted on the temporary disturbance associated with the natural gas pipeline (NGL) linear north of Ivanpah 3, which was completed in November 2013. Year-3 monitoring was conducted on the temporary disturbances associated with the NGL tap station, the well road, the 115kV gen-tie line, and the 33kV line which were completed in 2012. The six locations are shown in Figure 1, which is located at the end of this section.

As described in the Revegetation Plan, success criteria are based on perennial vegetation cover and species richness. The Revegetation Plan also requires other field monitoring analyses, such as density, diversity and survivorship that are not used in determining success, but provide additional information on the condition of the vegetation and the progress of recovery after disturbance. The monitoring duration is for 10 years, or until the success criteria are met.

The results of the perennial percent cover and species richness for the six locations as compared to the Revegetation Plan success criteria show that four of the six locations have meet both success criteria and the revegetation monitoring for those sites is now complete. The two remaining sites that did not meet both success criteria, are on track to meet the revegetation goals within 10 years. Monitoring will continue on the two remaining sites per the Revegetation Plan.

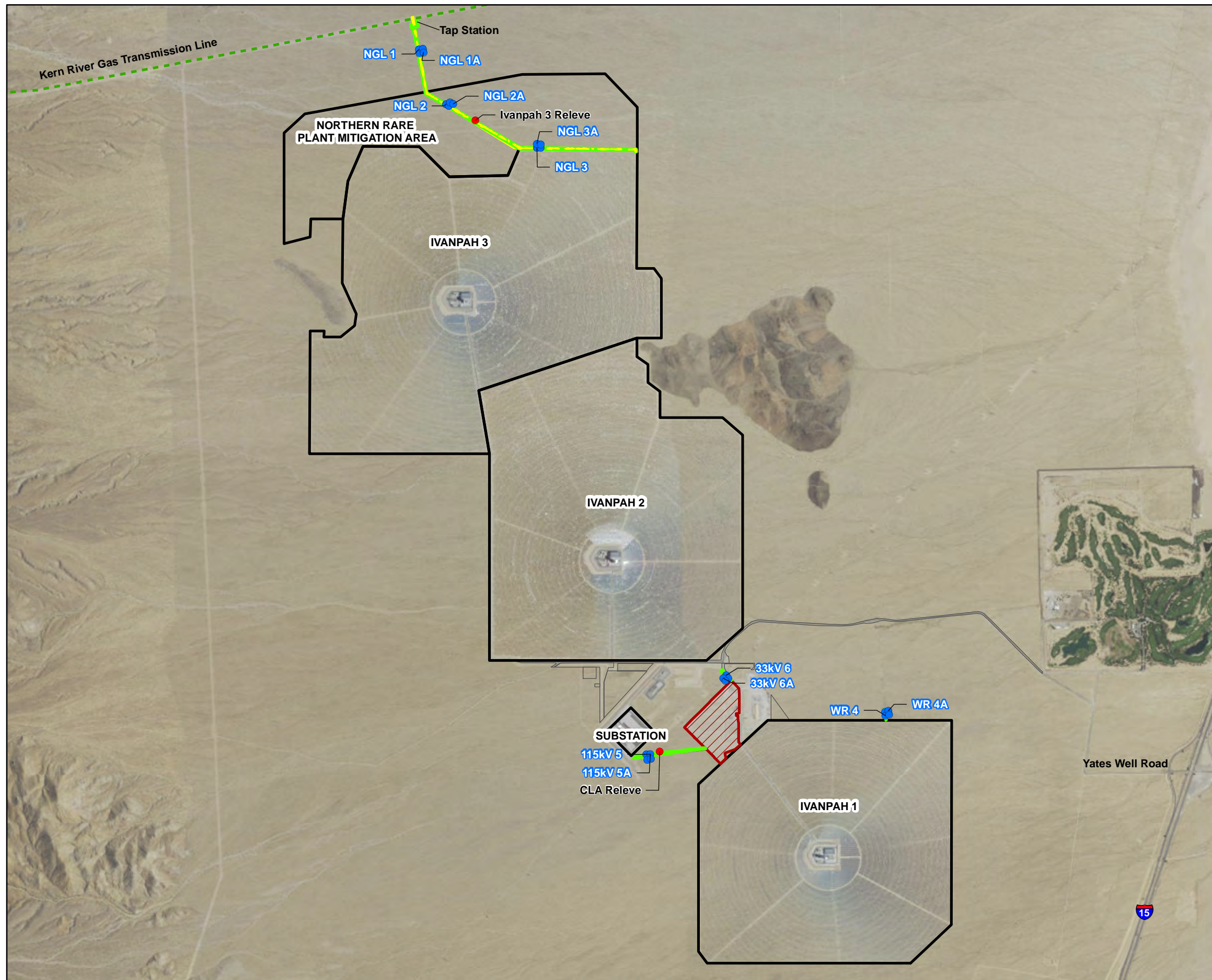
Monitoring and management of noxious weeds within revegetation locations is required by the *Weed Management Plan for the Ivanpah Solar Electric Generating System* (Weed Plan), which is a standalone document that was also included as Appendix A of the Revegetation Plan. Weed management and monitoring requirements are concurrently guided by the U.S. Fish and Wildlife Service's *Biological Opinion on BrightSource Energy's Ivanpah Solar Electric Generating System Project*. Weed monitoring results at the six revegetation locations are provided in this document, but are independent of the success criteria.

1.1 2015 Revegetation

In fall 2015, 40.1 acres of short-term disturbance was treated in the west side of Commons East. A seed mix modification technical memorandum was prepared and submitted to the agencies presenting an updated list of seed. The species used in the 2015 Commons East revegetation were, creosote bush (*Larrea tridentata*), cheesebush (*Ambrosia* [= *Hymenoclea*] *salsola*), California buckwheat (*Eriogonum fasciculatum* ssp. *polifolium*), white bursage (*Ambrosia dumosa*), wooly bursage (*Ambrosia eriocentra*), Virgin River brittlebush (*Encelia virginensis*), desert marigold (*Baileya multiradiata*), big galleta grass (*Hilaria rigida* [= *Pleuraphis rigida*]), button brittlebush (*Encelia frutescens*), brittlebush (*Encelia farinosa*), winterfat (*Krascheninnikovia lanata*), Cooper's goldbush (*Ericameria cooperi*), desert rabbitbrush (*Ericameria paniculata* [= *Chrysothamnus paniculatus*]), Cooper's paperflower (*Psilostrophe cooperi*), Mexican bladder

sage (*Scutellaria mexicana*), and Parish's goldeneye (*Viguiera parishii*). Additionally, two desert wash scrub species were hand spread in the channels, catclaw acacia (*Senegalia [=Acacia] greggii*) and desert almond (*Prunus fasciculata*).

The Year-1 results of the weed surveys conducted on this area in December 2015 are included in Section 3.2.8 of this document. Annual revegetation monitoring of this area will commence in 2016 and is not included in this report.



- LEGEND
- Permanent Photographic Plot at End of Belt Transect
 - Relevé
 - Belt Transect
 - ▭ Project Site
 - 2012 Revegetation Area
 - 2013 Revegetation Area
 - ▨ 2015 Revegetation Area

2012 Revegetation Area Acreage:
 Underground Gen-tie Line - 2.18 acres
 33kV Line - 0.38 acres
 115kV Line - 2.3 acres
 Well Road - 0.10 acres
 Gas Line Tap Station - 0.15 acres
 Northern Gas Line - 7.43 acres

2013 Revegetation Area Acreage:
 Northern Gas Line - 1.9 acres

2015 Revegetation Area Acreage:
 Commons East - 40.1 acres

Figure 1
2015 Annual
Revegetation Monitoring Locations
 Ivanpah Solar Electric Generating System

Methods

2.1 Revegetation Monitoring and Progress Assessment

Revegetation monitoring and success criteria for ISEGS were guided by the Technical Basis Document, Appendix C of the Revegetation Plan. Success criteria were based on perennial plant species, including perennial grasses and succulents, and do not include annual species because their populations fluctuate drastically from year-to-year. In 2014, perennial species were only recorded if vertical height was greater than 30 cm (10 in); whereas, this year perennial species were recorded regardless of vertical height.

2.1.1 Vegetation Sampling

The Revegetation Plan states that each 10 acres of disturbance requires a minimum of three sample belt transects. Because of the independent location and timing of the disturbance, vegetation sample locations were adjusted to the size and location of each disturbance. Table 2-1 provides the acreage and vegetation sampling sites at each independent disturbed location in comparison to estimated disturbance in the Plan of Development (POD) (CH2M HILL, 2010). Vegetation sampling was not conducted on Commons East; therefore, no results are presented. For the locations in Year-2 and Year-3 of monitoring, the sites had different success criteria standards: (1) the NGL and NGL tap station were associated with Ivanpah 3, and (2) Well Road (WR), 115kV, and 33kV were associated with the CLA. Therefore, three belt-transect sampling locations were chosen within each Ivanpah 3 area and CLA area. Three monitoring locations were chosen along the 2.4-kilometer (1.5-mile) NGL disturbed area, with one location near the NGL tap station. Due to the acreage and layout of the CLA locations, one representative belt transect was chosen within each disturbed revegetation area. Within the disturbed area a total of six 30-meter (98-foot) by 4-meter (13-foot) belt transects (120 square meters [m²]; 1170 square feet [ft²] each) were staked with a capped t-post at each end of the transect axis. As a control comparison, six 120 m² belt-transect locations were chosen within the undisturbed vegetation adjacent to the disturbed sample plots. The undisturbed transects were chosen along the same orientation as the disturbed transects and approximately 30 meters (98 feet) from the edge of disturbance.

TABLE 2-1
Revegetation Monitoring Sampling Locations and Acreages

Location	Disturbed Belt Transect	Undisturbed Belt Transect	Actual Revegetation Acres ^a	POD - Estimated Area in Acres ^a
Ivanpah 3 Area (2012 and 2013)				
Natural Gas Pipeline (NGL) from Ivanpah 3 to the Tap Point at Kern River Gas Transmission ^b	NGL-1, NGL-2, NGL-3	NGL-1A, NGL-2A, NGL-3A	6.03	5.1
Kern River Gas Transmission Tap Station	None	None	0.15 ^c	0.9
CLA Area (2012)				
Well Road (WR) north of Ivanpah 1	WR-4	WR-4A	0.1	NI
Underground Gen-tie 115kV line (115kV) between Ivanpah 1 and substation	115kV-5	115kV-5A	2.18	3.4
33kV line (33kV)	33kV-6	33kV-6A	0.38	NI
CLA Area (2015)				
West side of Commons East	Will be determined in 2016		40.1	49.3

TABLE 2-1
Revegetation Monitoring Sampling Locations and Acreages

Location	Disturbed Belt Transect	Undisturbed Belt Transect	Actual Revegetation Acres ^a	POD - Estimated Area in Acres ^a
Total Acreage			48.94	58.7

^a Areas may differ because POD area was an estimate based on estimated width and length of disturbance.

^b 1.9 acres treated in 2013

^c Revegetation area is less than in the POD because the area inside the Tap Station fencing was not revegetated.

NI = Not Included in POD calculations.

Sampling locations were generally named from north to south, with disturbed locations numbered 1 through 6, and associated undisturbed locations including the number and letter A. Vegetation sampling locations were recorded using a Garmin global positioning system (GPS) and are provided on a map with an aerial photograph base layer (Figure 1).

2.1.1.1 Belt Transects

Perennial plant cover was recorded along the centerline of each transect as a percent of total transect length. Biologists assessed cover by stretching a tape measure along the transect axis between the capped t-posts and measuring the distance that canopies of perennial plants at least 30 cm (11.8 inches) high intercepted the tape measure. Field data was collected on datasheets and then transcribed to an excel database for analysis. Transect locations were marked by capped t-posts placed at the start and end of the 30-meter (98-foot) axis, and recorded using a GPS, for later relocation.

Belt transects were formed by placing a 4-meter-long stick perpendicular to the 30-meter-long transect axis, thus describing a rectilinear area (the “belt”) of 120 m². Individuals were counted if they had vegetative cover that intersected the belt transect. Perennial species were counted as separate individuals when clumps of stems protruded from different locations on the ground. This is most common for creosote bush, white bursage, and Mojave yucca (*Yucca schidigera*). Individual Mojave yucca trunks were counted separately.

Perennial species richness was recorded within the belt transect as the number of unique perennial species. The Revegetation Plan states that richness should be totaled over three belt transects and one circular relevé plot. Due to the small acreage and linear nature of the five revegetation locations, a relevé plot was not included in the richness analysis of disturbed locations.

2.1.1.2 Relevé Plots

Two 12-meter (39-foot) radius relevé plots were established to sample the undisturbed vegetation adjacent to the Ivanpah 3 and CLA locations (Figure 1). The northern relevé plot is located north of Ivanpah 3 and is representative of the NGL and NGL tap station vegetation and the southern relevé plot is representative of the Well Road, 115kV gen-tie, and 33kV road vegetation. The relevé plots recommended by the Revegetation Plan are established in both disturbed and undisturbed habitats, but due to the small acreage and linear nature of the disturbance, relevé plots were not established in the disturbed area.

Relevé plots were used to calculate perennial species richness by counting the number of species in the plot. This analysis is required by field monitoring protocol, and will not be used in determining success.

2.1.1.3 Germination and Survivorship

Perennial species density measurements (that is, number of live individuals present per unit area) were used to estimate survivorship. For this measurement, the unit area is defined as each 120 m² belt transect. The population present at the time of the first monitoring session (t_1) is defined as the original cohort. Survivorship at year one is set to 1.0 for the original cohort of perennials and will be equal to the proportion of the population surviving at subsequent monitoring dates. Values can be either greater or less than one,

depending on whether there is reduction of or recruitment to the population within the sampled area. This analysis is required by field monitoring protocol, and will not be used in determining success.

2.1.1.4 Photographic Documentation

At each belt transect monitoring site, permanent photo locations were established at the start and end of the line. Each location was permanently marked in the field with a capped t-post, which also represents the start and end of the belt-transect. These locations were recorded with Garmin GPS, and shown on maps of the monitoring sites. A meter stick or range pole was used as a scale to illustrate the relative size of plants in photographs.

2.2 Data Analysis

2.2.1 Species Richness Calculations

Perennial species richness is defined as the total number of unique species per unit area at each sampling site within a revegetation location. Species richness is calculated independently for the three belt transects at Ivanpah 3 (NGL-1, NGL-2, and NGL-3), the three CLA belt transects (WR-4, 115kV-5, and 33kV-6), and the two relevé plots (North Ivanpah 3 and South CLA).

2.2.2 Species Diversity Calculations

Perennial species diversity was calculated using Simpson's Index of Diversity using the following formula:

Where,

$$1 - D = 1 - \frac{\sum n(n-1)}{N(N-1)}$$

1 - D = Index of diversity

N = Total number of individual perennials

n = Number of individuals of a particular species

2.2.3 Progress Criteria

The Revegetation Plan provides the following revegetation success criteria:

Monitoring Duration: 10 years or until success criteria are met. The period would be extended on a yearly basis if the criteria are not met after 10 years.

Vegetation Cover Success Criterion: 60 percent of pre-disturbance cover of perennials

Species Richness Success Criterion: 60 percent of pre-disturbance perennial-species richness

To avoid ambiguities, the Revegetation Plan also specified 100 percent values for pre-disturbance vegetation cover and species richness (Table 7-4, page 7-36). For the purpose of this document, the baseline success criteria values were revised to reflect the 60 percent cover and richness values for ease of analysis (Table 2-2). In addition, the richness data was extrapolated from 100 m² to 120 m² to reflect the implemented transect area. These baseline data are used to compare the perennial cover and species richness values measured during this reporting period.

TABLE 2-2
Success Criteria for Perennial Cover and Richness Values

Unit/Area	60% Perennial Plant Cover	60% Perennial Species Richness (per 120 m ²)
Ivanpah 1	8%	3
Ivanpah 2 & CLA	11%	6
Ivanpah 3 & NGL	13%	8
Channels and washes	4%	2

Note: The Revegetation Plan defined species richness per 100 m². Due to the implemented transect area, the richness values were extrapolated for 120 m² (4 m wide, 30 m long) transect area.

The Revegetation Plan also provided cover and richness criteria at years 2, 5 and 8 as a guideline to meet the success criteria (Table 2-3). These numbers do not indicate success if monitoring meets these interim goals; however, they do provide a check of how revegetation success is progressing. Analysis may include comparing the actual monitoring results to the interim goals presented in Table 2-3.

TABLE 2-3
Revegetation Success Criteria at Years 2, 5 and 8

Parameter	Year 2	Year 5	Year 8
Perennial Plant Cover	No cover criteria; however, a minimum of 1,500 plants per acre	8%	12%
Species Richness (100 m ²)	3	5	10

Note: Richness is defined as number of perennial species per unit area

2.2.4 Schedule and Reporting

Monitoring of revegetation progress will be conducted for a period of 10 years from the date of revegetation, or until the success criteria provided in Table 2-2 are met. If success criteria are not met in 10 years, monitoring extensions will be given on a year-by-year basis until success criteria are met. Monitoring will be performed annually during the first 3 years following revegetation, and biennially thereafter.

According to the Revegetation Plan, revegetation monitoring reports will be submitted to an adaptive management stakeholders' board within 30 days of each board meeting, and annually submitted to the BLM and CEC. In the absence of a stakeholders' board, reports summarizing the previous year's monitoring results will be submitted to BLM and CEC annually or bi-annually according to monitoring schedule described previously.

2.3 Weed Management

The Weed Management Plan and Biological Opinion established the post-construction revegetation weed monitoring schedule. Monthly monitoring was to occur for the first 2 years after revegetation construction, then quarterly for the third and fourth years, followed by semi-annually for a total of 7 years (per the Weed Plan), or for 10 years (per the Biological Opinion). To resolve the conflict in duration guidance, Solar Partners chose to follow the more conservative 10-year monitoring duration required by the Biological Opinion.

Most disturbed acreage was linear so to gather monitoring data, biological staff walked two transects within the approximately 50-foot-wide corridors: one transect outbound and one transect returning. Each weed or grouping of weeds were recorded using a GPS and presented on a map. In addition, information was collected on species, number of individuals, and general location and then cataloged in a spreadsheet.

Weeds were then manually removed, bagged, and disposed of offsite at an approved municipal waste disposal container.

Results

3.1 Revegetation Assessment

3.1.1 Dates and Staff

Annual assessment of revegetation progress was conducted on April 21, 22, May 7, and 20, 2015 by CH2M qualified botanists, Morgan King and William Clark.

3.2 Survey Findings

Data from the six disturbed sites (identified as NGL-1, NGL-2, NGL-3, WR-4, 115kV-5, 33kV-6) and nearby undisturbed sites employed for comparison are summarized below.

3.2.1 Initial Establishment: Species Composition

Table 3-1 provides the most abundant perennial species at sampled sites based on individual counts within 120 m² belt transects. The most abundant perennials in the disturbed sites are white bursage, cheesebush, and Virgin River brittlebush. The Revegetation Plan recognized that white bursage and cheesebush were well-adapted to disturbed habitats and might be expected to be pioneers on recently disturbed soils. The most common perennial species in the undisturbed sites also includes creosote bush, pencil cholla (*Cylindropuntia ramosissima*), and Anderson's thorn bush (*Lycium andersonii*).

TABLE 3-1

Most Abundant Perennial Plant Taxa in Disturbed and Undisturbed Sites, Ordered by Percent Cover

Sample Site	Disturbed (% cover)	Undisturbed (% cover)
NGL-1 (Year-2)		
1	Virgin River brittlebush (12.9)	White bursage (11.7)
2	White bursage (8.6)	Cheesebush (4.5)
NGL-2 (Year-2)		
1	Virgin River brittlebush (10.2)	Cheesebush (10.3)
2	Cheesebush (6.2)	Creosote bush (9.6)
NGL-3 (Year-2)		
1	White bursage (6.9)	Creosote bush (7.5)
2	Cheesebush (3.2)	Pencil cholla (2.9)
WR-4 (Year-3)		
1	Cheesebush (7.9)	White bursage (13.3)
2	White bursage (2.4)	Water jacket (6.0)
115kV-5 (Year-3)		
1	White bursage (22.5)	Creosote bush (18.8)
2	Virgin River brittlebush (1.3)	White bursage (5.0)
33kV-6 (Year-3)		
1	Cheesebush (30.6)	Creosote bush (18.2)
2	White bursage (5.6)	White bursage (9.1)

Year 2, Year 3: number of years since revegetation treatment

Although annual species use of the revegetation areas do not pertain to the success criteria, it is important to note that these species are also establishing and using the disturbance areas. Native plant species establishment decreases erosion and slows disturbance adapted species establishment. Typical annual species observed in the revegetation areas include, primrose (*Camissonia* sp.), desert trumpet (*Eriogonum inflatum*), plantain species (*Plantago* sp.), small wirelettuce (*Stephanomeria exigua*), cryptantha species (*Cryptantha* sp.), spineflower species (*Chorizanthe* sp.) combseed species (*Pectocarya* sp.), modest pepperweed (*Lepidium lasiocarpum*), redstem stork's bill (*Erodium cicutarium*), soft prairie clover (*Dalea mollissima*), and grama grass species (*Bouteloua* sp.). The NGL had signs of significant herbivory from mammals (e.g. burrows, rabbits).

Annual growth on the disturbed areas also includes weedy species, such as red brome (*Bromus madritensis* ssp. *rubens*). Red brome is not a target noxious weed as defined by the Weed Plan, but it is a non-native species to California.

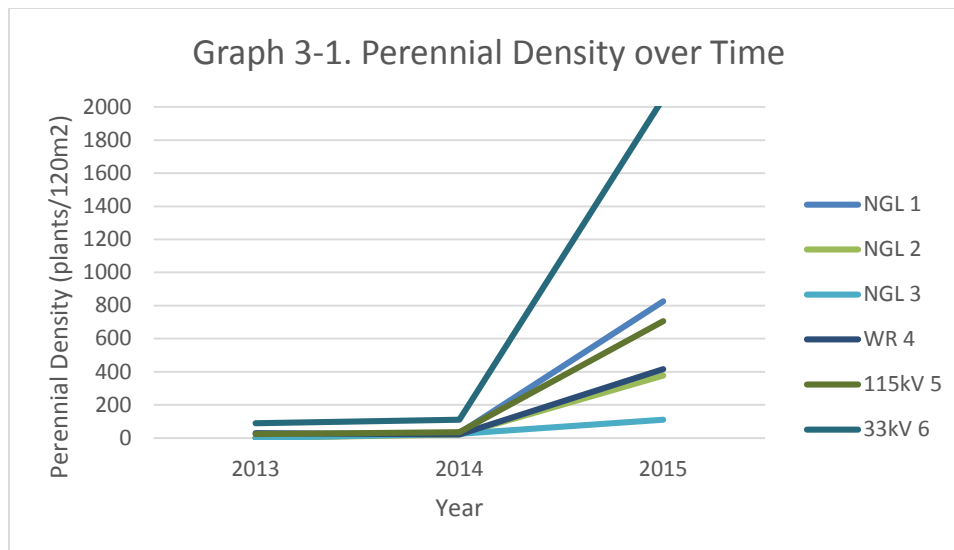
3.2.2 Perennial Density

Perennial density was determined as the number of perennial plants, irrespective of species, per 120 m² belt transect and is provided in Table 3-2. Perennial density in the disturbed sites has increased over time as shown by Graph 3-1. One would expect that the perennial density at the undisturbed sites would remain constant but the numbers have also increased over time. As shown in Table 3-2, perennial densities in the disturbed sites ranged from 111 in the NGL-3 to 2,052 at the 33kV-6.

TABLE 3-2
Perennial Density in Disturbed and Undisturbed Sample Sites

Sample Site	Disturbed			Undisturbed		
	2013	2014	2015	2013	2014	2015
Ivanpah 3 Sites (Year-2)						
NGL 1	N/A	30	826	79	97	333
NGL 2	N/A	22	378	60	63	65
NGL 3	N/A	25	111	71	51	176
CLA Sites (Year-3)						
Well Rd 4	29	22	416	111	87	149
115kV 5	24	35	706	114	85	637
33kV 6	89	110	2,052	135	90	137

Note: Perennial density is calculated as number of plants per 120m²



3.2.3 Perennial Cover

The perennial cover in the disturbed sites range from 10 to 37 percent (Table 3-3). The perennial cover in the undisturbed sites is comparable, and ranges from 13 to 28 percent.

TABLE 3-3
Percent Perennial Cover in Disturbed and Undisturbed Sample Sites during 2015

Sample Site	Disturbed	Undisturbed
Ivanpah 3 Sites (Year-2)		
NGL-1	23%	22%
NGL-2	19%	27%
NGL-3	10%	13%
CLA Sites (Year-3)		
WR-4	12%	28%
115kV-5	24%	27%
33kV-6	37%	27%

3.2.4 Perennial Species Richness and Diversity

These two parameters are interrelated expressions, or different ways of enumerating, the abundance of plant species (not individuals) in a community.

3.2.4.1 Species Richness

Perennial species richness (the total number of species present within a 120 m² area) is presented in Table 3-4 for each sample site. Richness was comparable between the disturbed sites and the undisturbed sites.

TABLE 3-4
Perennial Species Richness in Disturbed and Undisturbed Sample Sites during 2015

Site	Perennial Species Richness	
	Disturbed	Undisturbed
Ivanpah 3 Sites (Year-2)		
NGL-1	13	18
NGL-2	9	13
NGL-3	6	8
CLA Sites (Year-3)		
WR-4	6	11
115kV-5	6	13
33kV-6	4	4

3.2.4.2 Diversity

Perennial diversity, as expressed by Simpson's Index (see Section 2.2.2), is presented in Table 3-5 for each sample site. Perennial diversity was overall higher in the disturbed sites than the undisturbed, with the exception of WR-4. Diversity in the disturbed sites ranged from 0.53 to 0.81, and in the undisturbed sites ranged from 0.38 to 0.64.

TABLE 3-5

Perennial Diversity in Disturbed and Undisturbed Sample Sites during 2015

Site	Simpson's Index of Diversity (1-D)	
	Disturbed	Undisturbed
Ivanpah 3 Sites (Year-2)		
NGL-1	.81	.49
NGL-2	.75	.64
NGL-3	.72	.55
CLA Sites (Year-3)		
WR-4	.54	.62
115kV-5	.60	.38
33kV-6	.53	.47

Note: The higher the index of diversity, the greater the diversity at a site.

3.2.5 Survivorship

Table 3-6 presents the survivorship or growth rates for the NGL sites compared between 2014 and 2015, since 2014 was Year-1. Survivorship or growth rate values above 1.0 indicate that more individuals are present in the belt transect than during year one, and values and below 1.0 indicate that fewer individuals are present. The results are consistent with expectation that disturbed sites would have higher growth rates than adjacent undisturbed sites.

TABLE 3-6

Perennial Survivorship in NGL Sample Sites between 2014 and 2015

Site	Disturbed	Undisturbed
Ivanpah 3 Sites (Year-2)		
NGL-1	27.53	3.43
NGL-2	17.18	1.03
NGL-3	4.44	3.45

Table 3-7 provides the results for the CLA areas compared between 2013 and 2015. Similar to the survivorship results in Table 3-6, the disturbed sites growth rate was higher than the growth rate in the undisturbed sites.

TABLE 3-7
Perennial Survivorship in CLA Sample Sites between 2013 and 2015

Site	Disturbed	Undisturbed
CLA Sites (Year-3)		
WR-4	14.34	1.34
115kV-5	29.42	5.59
33kV-6	23.06	1.01

Note: NGL survivorship in disturbed area between 2013 and 2015 could not be calculated since additional disturbance occurred in 2013.

3.2.6 Relevé Plots

Table 3-7 provides the observed perennial species at the two relevé plots. The northern relevé, which is from the higher elevation Ivanpah 3 location, has greater perennial species richness than the southern relevé, which is from the lower elevation, and therefore a more arid CLA location.

3.2.7 Photographic Documentation

Photographs of the disturbed and undisturbed locations are provided in Appendix A.

3.2.8 Weed Management

In 2015, weed monitoring requirements were staggered based on when the revegetation treatment was completed. The NGL linear was monitored monthly between January and November, and the west side of Commons East was monitored monthly in December. The remaining areas (NGL tap station, WR, 115 kV, and 33 kV) were monitored quarterly. During this time, no Weed Plan target weed species were observed on the revegetation areas.

TABLE 3-8
Relevé Plots Observed Perennial Species List on Undisturbed Areas during 2015

Scientific Name	Common Name	Relevé Plot (North, Ivanpah 3)	Relevé Plot (South, CLA)
<i>Adenophyllum cooperi</i>	Cooper's dogweed	X	X
<i>Ambrosia dumosa</i>	White bursage	X	X
<i>Ambrosia salsola</i>	Cheesebush	—	X
<i>Cylindropuntia acanthocarpa</i>	Buckhorn cholla	X	X
<i>Cylindropuntia echinocarpa</i>	Silver cholla	X	X
<i>Cylindropuntia ramomissima</i>	Pencil cholla	X	X
<i>Dasyochloa pulchellum</i>	Fluff grass	X	X
<i>Echinocereus engelmannii</i>	Hedgehog cactus	X	X
<i>Enneapogon desvauxii</i>	Nine-awned pappus grass	X	X
<i>Ephedra nevadensis</i>	Death Valley jointfir	X	X
<i>Eriogonum fasciculatum</i>	California buckwheat	X	X
<i>Eriogonum inflatum</i>	Desert trumpet	X	—
<i>Grusonia parishii</i>	Dead man's cholla	—	X
<i>Hilaria rigida</i>	Big galleta grass	X	X
<i>Krameria erecta</i>	Pima ratany	X	X
<i>Larrea tridentata</i>	Creosote bush	X	X
<i>Lycium andersonii</i>	Water jacket	X	—
<i>Mammillaria tetranscistra</i>	Fishhook cactus	X	X
<i>Opuntia basilaris</i>	Beavertail cactus	X	X
<i>Porophyllum gracile</i>	Slender poreleaf	X	X
<i>Scutellaria mexicana</i>	Mexican bladder sage	X	—
<i>Senegalia (=Acacia) greggii</i>	Catclaw acacia	X	X
<i>Senecio flaccidus var. monoensis</i>	Smooth threadleaf ragwort	X	—
<i>Stephanomeria pauciflora</i>	Wire lettuce	X	—
<i>Thymophylla ptechetae</i>	Fiveneedle prickly leaf	X	X
<i>Yucca schidigera</i>	Mojave yucca	X	X
Total Perennial Plant Species Observed in Plot		24	21

Discussion

To meet the revegetation success criteria, a sampling site must meet both the percent cover and species richness goals. Once both success criteria are met, then annual revegetation monitoring is complete for that location and no further revegetation monitoring is required. In accordance with weed management requirements, monitoring for presence of invasive weed species will continue for a total of 10 years past the date of revegetation treatment.

The results of the perennial percent cover and species richness for the six locations as compared to the Revegetation Plan success criteria are provided in Table 4-1. Four of the six locations have met both success criteria and the revegetation monitoring for those sites is now complete. The two locations in the NGL (NGL-1 and NGL-2), success goals were met after only two years post-revegetation treatment. The two CLA locations (WR-4 and 115kV-5), success goals were met after three years. The two remaining sites that did not meet both success criteria, NGL-3 and 33kV-6, are on track to meeting the revegetation goals within 10 years. As compared to Table 2-3 (Revegetation Success Criteria at Years 2, 5, and 8), the two sites exceeded the Year-2 projections, and NGL-3 exceeded the Year-5 projections. Although 33kV-6 has met the percent cover criteria (highest cover of each of the six sites), it has not met the species richness criteria and therefore monitoring will continue at this location.

TABLE 4-1

2015 Monitoring Results Compared to Success Criteria

	Target Percent Cover	2015 Observed Percent Cover	Met Cover Success Criteria?	Target Species Richness	2015 Observed Species Richness	Met Richness Success Criteria?	Met Both Success Criteria?
Ivanpah 3 & NGL							
NGL-1		23%	Yes		13	Yes	Yes
NGL-2	13%	19%	Yes	8	9	Yes	Yes
NGL-3		10%	No		6	No	No
Ivanpah 2 & CLA							
WR-4		12%	Yes		6	Yes	Yes
115kV-5	11%	24%	Yes	6	6	Yes	Yes
33kV-6		37%	Yes		4	No	No

Species composition on the disturbed sites is still highest among the pioneer colonizers, white bursage, cheesebush, and brittlebush, which is to be expected in Year-2 and Year-3 post-revegetation. Species diversity in the disturbed sites increased in 2015. Diversity on the disturbed sites was also higher than undisturbed sites, which is consistent with an establishing pioneer community. Diversity will eventually decrease to match the adjacent stable climax community.

The perennial growth rate (survivorship) was relatively constant on disturbed sites as compared from 2013 to 2014 and 2014 to 2015. This corresponds to a significant increase in perennial density and percent cover.

As expected, species richness continued to be lower on the disturbed sites as compared to the undisturbed locations, except for the WR-4, which had same richness between sites in 2015.

Also, observations indicated rabbit/rodent herbivory, due to the dry conditions. Herbivory and cattle grazing pressures in the valley may be increasing due to loss in habitat from the development in California as well as Nevada.

4.1.1 Weed Management

No weeds found in 2015, exceeds the Revegetation Plan goal that revegetation sites will have no less than 15 percent cover of weeds. In 2013, 74 weed individuals were removed, and in 2014, four weed individuals were observed. With diligent manual control of weeds early in the revegetation process, we expect that weeds will have little chance of establishing on the revegetation areas since native plants are significantly increasing percent cover each year.

4.2 Long-term Monitoring Schedule

4.2.1 Revegetation

Table 4-2 provides a recommended long-term schedule for revegetation monitoring. Four of the six locations met the success criteria in 2015 and no further monitoring is required.

TABLE 4-2
Revegetation Monitoring Schedule ^a

	End of Construction	Annual Monitoring Years 1–3			Bi-annual Monitoring Years 4–10 ^b			
NGL-1 and NGL-2	2013	2014	2015	-	Success criteria were met in 2015, no further monitoring is required.			
NGL-3	2013	2014	2015	2016	2018	2020	2022	2024
WR-4	2012	2013	2014	2015	Success criteria were met in 2015, no further monitoring is required.			
115kV-5	2012	2013	2014	2015	Success criteria were met in 2015, no further monitoring is required.			
33kV-6	2012	2013	2014	2015	2017	2019	2021	2023
Commons East	2015	2016	2017	2018	2020	2022	2024	2026

^a This schedule does not account for dry years or remedial actions after 10 years if success criteria are not met.

^b Or until success criteria are met.

4.2.2 Weeds

Although no weeds were found this year, biological staff will continue monitoring the revegetation areas for weeds for 10 years (Table 4-3).

TABLE 4-3
Weed Monitoring Schedule

	End of Construction	Monthly Monitoring Years 1 and 2		Quarterly Monitoring Years 3 and 4		Semi-Annual Monitoring Years 5-10					
NGL linear	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
NGL Tap Station	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020	2022
WR	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020	2022
115kV	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
33kV	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Commons East	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025

4.3 Remaining Revegetation

The only remaining short-term disturbance awaiting revegetation is the Interstate-15 Desert Tortoise Pen Area. This area was constructed in 2011 and is expected to be used until the fall 2021. The ISEGS short-term disturbance area is 4.77 acres, which is three sides of the pen at a 50-foot disturbance corridor width. The fourth side of the pen area is part of the Joint Point of Entry which is maintained by Caltrans.

SECTION 5

References

CH2M HILL. 2010. Project Description for the Ivanpah Solar Electric Generating System, San Bernardino County, California (07-AFC-5C). Prepared for submission to BLM as the Plan of Development. September.

Appendix A
Baseline Site Photographs

Appendix A
Baseline Site Photographs



Photo 1. Permanent photo station, Ivanpah 3 associated disturbed site NGL-1, facing south.



Photo 2. Permanent photo station, Ivanpah 3 associated disturbed site NGL-1, facing north.



Photo 3. Permanent photo station, Ivanpah 3 associated undisturbed site NGL-1A, facing south.



Photo 4. Permanent photo station, Ivanpah 3 associated undisturbed site NGL-1A, facing north.



Photo 5. Permanent photo station, Ivanpah 3 associated disturbed site NGL-2, facing SE.



Photo 6. Permanent photo station, Ivanpah 3 associated disturbed site NGL-2, facing NW.



Photo 7. Permanent photo station, Ivanpah 3 associated undisturbed site NGL-2A, facing SE.



Photo 8. Permanent photo station, Ivanpah 3 associated undisturbed site NGL-2A, facing NW.



Photo 9. Permanent photo station, Ivanpah 3 associated disturbed site NGL-3, facing SE.



Photo 10. Permanent photo station, Ivanpah 3 associated disturbed site NGL-3, facing NW.



Photo 11. Permanent photo station, Ivanpah 3 associated undisturbed site NGL-3A, facing SE.



Photo 12. Permanent photo station, Ivanpah 3 associated undisturbed site NGL-3A, facing NW.



Photo 13. Permanent photo station, CLA associated disturbed site WR-4, facing south.



Photo 14. Permanent photo station, CLA associated disturbed site WR-4, facing north.



Photo 15. Permanent photo station, CLA associated undisturbed site WR-4A, facing south.



Photo 16. Permanent photo station, CLA associated undisturbed site WR-4A, facing north.



Photo 17. Permanent photo station, CLA associated disturbed site 115kV-5, facing east.



Photo 18. Permanent photo station, CLA associated disturbed site 115kV-5, facing west.



Photo 19. Permanent photo station, CLA associated undisturbed site 115kV-5A, facing east.



Photo 20. Permanent photo station, CLA associated undisturbed site 115kV-5A, facing west.

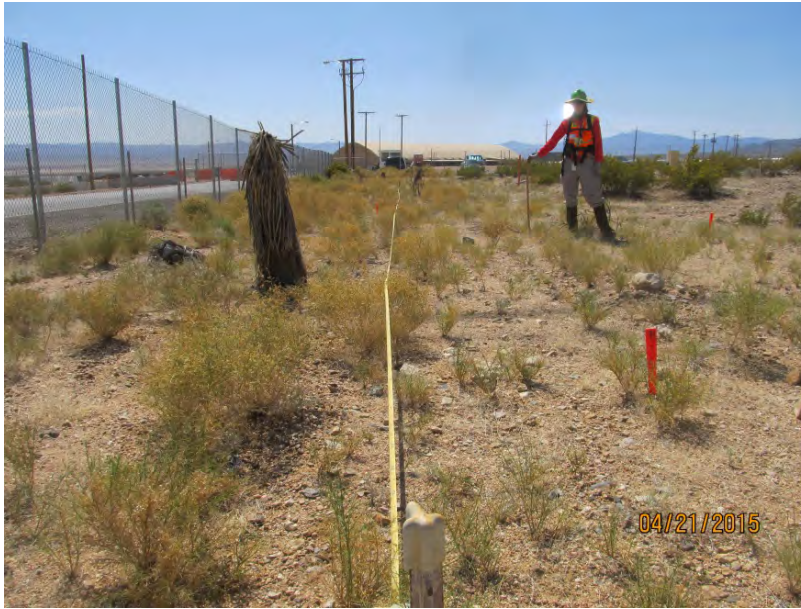


Photo 21. Permanent photo station, CLA associated disturbed site 33kV-6, facing south.



Photo 22. Permanent photo station, CLA associated disturbed site 33kV-6, facing north.



Photo 23. Permanent photo station, CLA associated undisturbed site 33kV-6A, facing south.



Photo 24. Permanent photo station, CLA associated undisturbed site 33kV-6A, facing north.

Appendix J

Condition of Certification BLO-17

Desert Tortoise Compensatory Mitigation Fencing Annual Inspection, Repairs and Maintenance



NRG Ivanpah Solar Thermal Power Plant
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2012 Fax: 702-815-2030

January 11, 2016

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C)
Desert Tortoise Compensatory Mitigation – Fencing Annual Inspection, Repairs and Maintenance;
Rehabilitated Routes, to fulfill California Energy Commission Condition of Certification, BIO-17

Dear Mr. Douglas and Mr. Ahrens,

In accordance with the requirements of Conditions of Certification BIO-17 of the Commission's approval of the Ivanpah Solar Electric Generating System, the project owner shall provide to the CPM and CDFG an annual report describing: the results of the annual inspection of fencing and rehabilitated routes; a summary of fence repairs and maintenance of reclaimed routes completed during the year; and recommendations and a cost estimate for repairs and maintenance activities needed for the upcoming year.

The construction of 50 miles of Desert Tortoise Exclusion Fencing along the northbound side of Interstate 15 between Nipton Road and Yates Well Road commenced construction on October 19, 2015. This segment of tortoise fencing is approximately 5 miles and was completed on October 30, 2015. BLM and Caltrans representatives inspected the completed fencing works on November 18, 2015. A copy of Caltrans acceptance of the completed fencing works is attached.

The tortoise fencing works along the eastbound and westbound sides of Interstate 40 between Goffs Road and US Route 95 commenced construction on November 2, 2015. It is anticipated that all works will be completed by February 19, 2015. Quarterly inspections for both Interstates 15 and 40 tortoise fences are expected to begin during the second quarter of 2016. The inspection reports will be provided in the next annual compliance report.



NRG Ivanpah Solar Thermal Power Plant
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2012 Fax: 702-815-2030

August 28, 2013 marked the completion of restoration and closure of fifty-one BLM routes. During August 2014 and September 2014, all fifty-one routes were inspected as part of an annual inspection and a report on the findings of the inspection was submitted to BLM in October 2014. On February 26, 2015, BLM confirmed the requirements of this condition were satisfied. Therefore, no further reporting is required.

Please feel free to contact me with any questions.

Thank you.


William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364

CC: Doug Davis, NRG, Ivanpah
Mitch Samuelian, NRG, Ivanpah
Tim Sisk, NRG
Document Control Specialist – NRG.

PERMIT NO.: 08-13-6-FN-0507
CO/RTE/PM: 08/SBD/15/176.4-181.4

DEPARTMENT OF TRANSPORTATION-DISTRICT 8
ENCROACHMENT PERMITS OFFICE
464 W. 4th. Street, MS 619
San Bernardino, CA 92401-1400

100% COMPLETION NOTICE

Work on Permit No.: 08-13-6-FN-0507 has been completed. A final inspection meeting was held on

Permittee's Representative

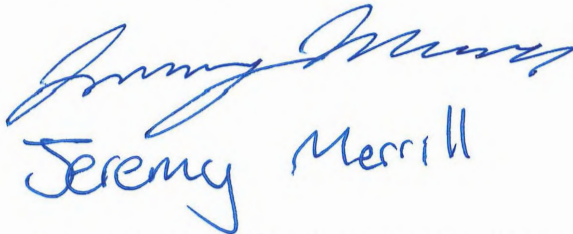
Date



11-18-15

Department's Representative

Date



Jeremy Merrill

11/18/15

FAILURE TO COMPLETE AND RETURN THIS TO THE DISTRICT PERMITS OFFICE MAY CAUSE A DELAY
IN THE RELEASE OF YOUR BONDS.

Appendix K

Condition of Certification BIO-18

**Special Status Plants Post
Construction Monitoring Annual
Report**

Condition of Certification (COC) BIO-18

Year-2 (2015) Special-status Plants BIO-18 Post-Construction Monitoring Annual Report

Ivanpah Solar Electric Generating System (ISEGS)

Prepared for
Solar Partners II, LLC; Solar Partners I, LLC;
and Solar Partners VIII, LLC

January 2016

CH2MHILL®

2485 Natomas Park Drive
Suite 600
Sacramento, California 95833

Contents

Section	Page
Acronyms and Abbreviations	v
1 Introduction	1-1
1.1 Project Description	1-1
1.2 Report Objective	1-1
1.3 Special-status Plant Compliance Documents.....	1-1
1.4 Document Contents.....	1-2
2 BIO-18 Compliance Measures	2-1
2.1 Summary	2-1
2.2 BIO-18 Compliance	2-2
3 Special-status Plant Descriptions	3-1
3.1 Mojave Milkweed (<i>Asclepias nyctaginifolia</i>)	3-1
3.2 Desert Pincushion (<i>Coryphantha chlorantha</i>)	3-2
3.3 Parish’s Club-cholla (<i>Grusonia parishii</i>)	3-2
3.4 Nine-awned Pappus Grass (<i>Enneapogon desvauxii</i>).....	3-2
3.5 Rusby’s Desert Mallow (<i>Sphaeralcea rusbyi</i> var. <i>eremicola</i>).....	3-4
4 Monitoring Methods	4-1
4.1 Special-status Plant Protection Areas.....	4-1
4.2 Plant Protection Goals	4-1
4.3 Special-status Plant Monitoring.....	4-2
4.3.1 During-Construction Monitoring	4-4
4.3.2 Post-Construction Monitoring	4-4
5 Monitoring Results	5-1
5.1 Special-status Plants SSPPAs.....	5-6
5.1.1 Plant Salvage and Transplantation	5-5
5.1.2 Nine-awned Pappus Grass	5-7
5.1.3 Special-status Plant Buffer Environmentally Sensitive Areas	5-7
5.2 Additional Special-status Plant Compliance Monitoring	5-7
5.2.1 Year-2 (2015) Post-construction Monitoring.....	5-7
6 References	6-1
Appendixes	
A Condition of Certification BIO-18	
B Representative Photographs from 2015 Post-Construction Monitoring	
C Revised Special-status Plant Protection Plan Figures 5-1 through 5-3 (from 2010)	
D Monitoring Datasheets	
Tables	
2-1 Summary of COC BIO-18 Compliance Measures Completed and In Progress.....	2-2
4-1 Special-status Plant Localities and Individuals Proposed for Protection, Salvage, or are Included in Mitigation Area	4-1
4-2 ISEGS Special-Status Plant Mitigation Monitoring Schedule	4-3

4-3 ISEGS Year-2 (2015) Post-Construction Data Collected in SSPPAs 4-4

5-1 ISEGS Special-status Plants by Location, Year-2 (2015) Post-Construction Monitoring 5-1

5-2 Special-status Localities and Individuals Protected by Exclusionary Fencing or Included in Mitigation Area in 2015 5-2

5-3 Number of Localities and Plants Protected at ISEGS in 2014 and 2015 5-5

Figures

1-1 Vicinity Map

1-2 Site Layout

5-1 Location of Mojave Milkweed and Rusby’s Desert Mallow Year 2 (2015) Post-Construction Monitoring

5-2 Location of Desert Pincushion Year-2 (2015) Post-Construction Monitoring

5-3 Location of Parish’s Club-cholla Year-2 (2015) Post-Construction Monitoring

Acronyms and Abbreviations

BIO-18	Condition of Certification Biology (BIO)-18
BLM	Bureau of Land Management
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CLA	Construction Logistics Area
COC	Condition of Certification
CRPR	California Rare Plant Rank
ESA	Environmentally Sensitive Area
GANDA	Garcia and Associates
gen-tie	generation tie
GIS	geographic information system
ISEGS	Ivanpah Solar Electric Generating System
NRPMA	Northern Rare Plant Mitigation Area
Remedial Action Plan	<i>Ivanpah SEGS Special-status Plant Remedial Action Plan</i>
Revised Protection Plan	<i>Ivanpah SEGS Special-status Plant Protection and Monitoring Plan, Revision 1</i>
RPTA	Rare Plant Transplantation Area
SCE	Southern California Edison
SPT	solar power tower
SSPPA	Special-status Plant Protection Area

Introduction

1.1 Project Description

Solar Partners I, LLC; Solar Partners II, LLC; and Solar Partners VIII, LLC (Solar Partners), are the owners of the Ivanpah Solar Electric Generating System (ISEGS), a nominal 370 megawatt (MW) solar energy project in southern California's Mojave Desert, near the Nevada border. The project was developed by BrightSource Energy, Inc. and is operated for Solar Partners by NRG Energy Services, LLC. The project is located on a 3,471-acre site west of the Ivanpah Dry Lake, on land managed by the Bureau of Land Management (BLM) (Figure 1-1).

Ivanpah 1 (the southern unit) covers approximately 913.5 acres (1.4 square miles); Ivanpah 2 (the middle unit) covers approximately 1,077 acres (1.7 square miles); and Ivanpah 3 (the northern unit) is larger and will cover approximately 1,235 acres (1.9 square miles). The remaining disturbance areas include common access roads, gas lines, generation tie-lines, and construction and operations facilities. All three phases share an administration building, an operation and maintenance building, a substation located between Ivanpah 1 and 2, and paved roads to access each site. The project ties into the existing Kern River Gas Transmission Line about 0.5 mile north of the Northern Rare Plant Mitigation Area (NRPMA) and into the Southern California Edison 230/115-kilovolt (kV) line that crosses between the Ivanpah 1 and 2 sites (Figure 1-2).

Each unit consists of solar arrays of heliostats (or mirrors) that focus solar energy on central solar power tower receivers near the center of each of the heliostat arrays. Ivanpah 1 (nominal 120 MW) has a heliostat array consisting of approximately 53,500 heliostats. Ivanpah 2 and 3 (nominal 125 MW each) have heliostat arrays consisting of approximately 60,000 heliostats. The heliostat array of each unit is arranged around a single centralized solar power tower (SPT) that is 140 meters (459 feet) in height, including a boiler/superheater panel with an upper steam drum and protective ceramic insulation panels (20 meters/65.5 feet) on top. Each solar power plant has a power block in the approximate center of the heliostat array. The power block includes a solar power tower (SPT), a receiver boiler, a steam turbine generator (STG) set, an air-cooled condenser, and other auxiliary systems. The solar field and power generation equipment are started each morning after sunrise and shut down in the evening when insolation drops below the level required to keep the turbine online.

1.2 Report Objective

The objective of this monitoring report is to present the results of the Year-2 (2015) post-construction special-status plant monitoring. This report complies with the annual reporting requirement of BIO-18 and measures included in Section 8 of the ISEGS Special-status Plant Protection and Monitoring Plan, Revision 1 (Revised Protection Plan) (Solar Partners, 2010a).

The plans and procedures prepared and implemented to date to avoid and minimize impacts to special-status plants and comply with the construction requirements of BIO-18 are summarized in Section 2 of this report.

1.3 Special-status Plant Compliance Documents

Plans prepared for ISEGS to comply with BIO-18 include the following:

- *Ivanpah SEGS Special-status Plant Protection and Monitoring Plan, Revision 1* (Solar Partners, 2010a)
- *Ivanpah SEGS Special-status Plant Remedial Action Plan* (Solar Partners, 2010b)

- *Closure, Revegetation, and Rehabilitation Plan for the Ivanpah Solar Electric Generating System*. COCs BIO-14, BIO-18 & COMP-11. Revision 4. Includes the Gas Pipeline Revegetation and Monitoring Plan (BIO-18) (CH2M HILL, 2010)
- Seed Collection and Revegetation Proposed Plan, Revision 1 (Solar Partners, 2010c)

Special-status plant protection measures, plant salvage, and transplantation procedures are described in the Revised Protection Plan and the Closure, Revegetation, and Rehabilitation Plan. The Remedial Action Plan describes the special-status plant seed (and other propagules [that is, live plants]) that have been collected and transplanted in the onsite nursery for use as a source of plant material should protection measures fail and special-status plants need to be re-established. The Seed Collection Plan describes seed collection procedures for special-status plants and common species. The Revised Revegetation Plan includes the Gas Pipeline Revegetation and Monitoring Plan. The implementation of the abovementioned plans is described in detail in the BIO-18 natural gas line corridor revegetation and as-built reports (CH2M HILL, 2015a,b).

1.4 Document Contents

Section 2 includes a summary of the compliance measures required, undertaken, and in progress to comply with BIO-18 and avoid and minimize impacts to special-status plants. **Section 3** contains a summary of the special-status plants that are the subject of this plan. Post-construction monitoring methods are described in **Section 4**. Results of monitoring are provided in **Section 5**. Figures 5-1 through 5-3 show the location of Special-status Plant Protection Areas (SSPPAs) identified in 2015 within the solar field and the mitigation areas. References used in developing this report are included in **Section 6**. The BIO-18 Condition of Certification (COC) is included as **Appendix A**. Photographs from the 2015 compliance monitoring are included in **Appendix B**. **Appendix C** contains the initial 2010 protection plan figures. The datasheets used to collect field data is provided in **Appendix D**.



LEGEND
 PROJECT SITE

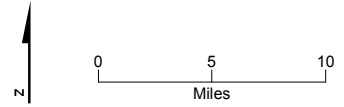
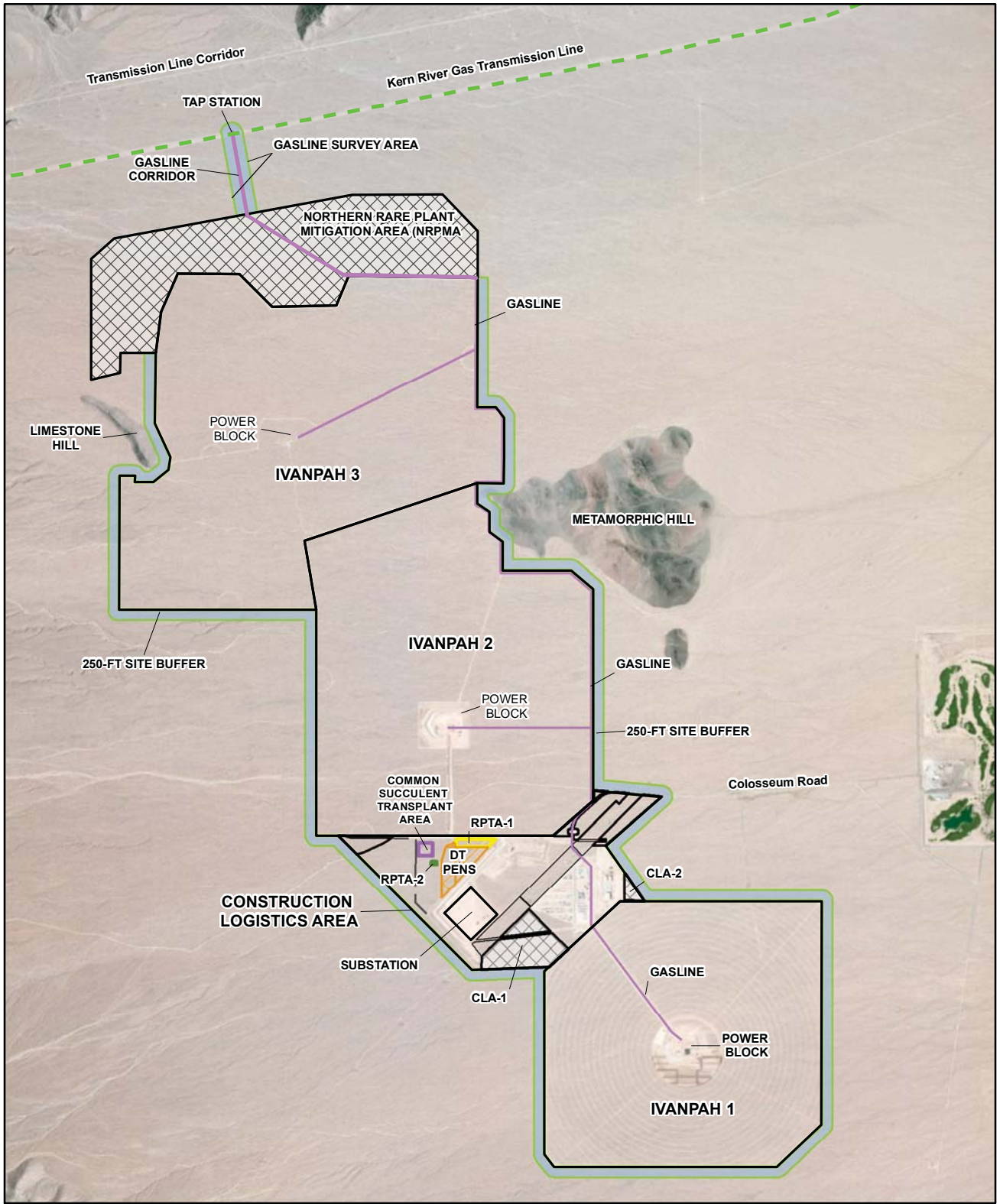


FIGURE 1-1
VICINITY MAP
 IVANPAH SOLAR ELECTRIC GENERATING SYSTEM



LEGEND

- Gasline (50-foot Corridor)
- Common Succulent Transplant Area
- Rare Plant Transplantation Area (RPTA-1)
- Rare Plant Transplantation Area (RPTA-2)
- Desert Tortoise Pen Area
- 250-ft Site Buffer
- Project Site

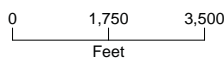


Figure 1-2
Site Layout

Ivanpah Solar Electric Generating System

SECTION 2

BIO-18 Compliance Measures

This section includes a summary of the compliance measures required, or undertaken, or that are in progress to comply with BIO-18. The text of BIO-18 is included in Appendix A of this report. Table 2-1 includes requirements of BIO-18 and compliance actions undertaken by BrightSource Energy, Inc. from 2010 to 2013 and NRG Energy Services, LLC, between 2013 and 2015. Appendix B provides photographs documenting the compliance actions and the SSPPAs. Locations of the SSPPAs, established in 2010 and 2011 as required by BIO-18, are shown in the Revised Protection Plan (Solar Partners, 2010a). For convenience, the 2010 Revised Protection Plan figures are provided in Appendix C.

2.1 Summary

The California Energy Commission (CEC) included special-status plant avoidance, minimization, and protection goals in COC BIO-18 (Measures 1 through 11) (CEC, 2010). The steps and procedures completed or planned include the following:

- Removal of 476 acres of habitat supporting special-status plants from the project footprint and establishing three special-status plant mitigation areas.
- Preparation of the *Ivanpah SEGS Special-status Plant Monitoring and Protection Plan* (Revision 1) (Revised Protection Plan) (Solar Partners, 2010a).
- Preparation of the *Ivanpah SEGS Special-status Plant Remedial Action Plan* (Remedial Action Plan) (Solar Partners, 2010b).
- Development of a Seed Collection Plan for special-status plants. Appendix B of the Remedial Action Plan describes seed collection procedures for common species as well as special-status plants.
- Preparation of the *Closure, Revegetation, and Rehabilitation Plan for the Ivanpah Solar Electric Generating System* (Revision 4) (CH2M HILL, 2010). This plan includes the Gas Pipeline Revegetation and Monitoring Plan required by BIO-18.
- Implementation of special-status plant protection goals of 75 percent as described in Section 5.2.1.4 of the Revised Protection Plan.
- The identification and establishment of SSPPAs within the solar field and within the three mitigation areas. Revised Protection Plan Figures 5-1 through 5-3 (provided in Appendix C of this report) show the location of the SSPPAs that were established in 2010 and 2011.
- Salvage and relocation of the special-status plant localities listed in Table 5-1 in the Revised Protection Plan. Figures 5-1 through 5-3 of the Revised Protection Plan (provided in Appendix C of this report) show the location of plants that were salvaged.
- Maintenance, including irrigation, of salvaged special-status plants within the Rare Plant Transplantation Area (RPTA-1).
- Designation of special-status plant localities within the 250-foot buffer as Environmentally Sensitive Areas (ESA).
- Completion of focused surveys for Mojave milkweed and Rusby's desert mallow on public lands.
- Security for the implementation of plans.
- Acquisition of offsite Mojave milkweed lands.

2.2 BIO-18 Compliance

The project complies with all of the BIO-18 measures, and 8 of the 11 measures are complete. Table 2-1 lists the compliance measures and the current compliance status of each measure. The 8 completed measures are 1, 3, 5, 6, 7, 9, 10, and 11. No additional work on these measures is required.

The project complies with BIO-18 measures 2, 4, and 8, but they are not considered complete because these measures have long-term monitoring components. These longer-term elements of BIO-18, such as plant survivorship monitoring within the SSPPAs (including the three mitigation areas), are to be conducted over a 10-year post-construction timeframe, as described in the Revised Protection Plan (Solar Partners, 2010a). Information on health and vigor, reproduction, seed production, and recruitment will be monitored over time, but have no fixed success criteria. Survivorship data will be used to evaluate the short- and longer-term success of the SSPPAs against the 75 percent protection goal and determine if implementation of remedial measures is necessary.

This report provides results of 2015 (Year-2) monitoring, and these data represent the first year of post-construction monitoring as described in Section 8 of the Revised Protection Plan (Solar Partners, 2010a). Results of monitoring performed during construction between 2011 through 2013 are included in the 2011, 2012, and 2013 BIO-18 Annual Compliance Reports (CH2M HILL, 2012a; 2013; 2014). Results of the Year-1 (2014) Post-construction monitoring are included in the Year-1 (2014) Special-status Plants Post-Construction Monitoring Annual Report (CH2M HILL, 2015c). Special-status plant impact avoidance and protection measures that are listed as complete in Table 2-1 are described in more detail in the BIO-18 Special-status Plant As-Built Report (CH2M HILL, 2015b).

TABLE 2-1

Summary of COC BIO-18 Compliance Measures Completed and In Progress

No.	COC BIO-18 Measure	In Compliance?	Task Complete?
1	Onsite Plant Avoidance/Minimization Areas	Yes. SSPPAs were established (see Figures 5-1 through 5-3 in Section 5 and Appendix C of this report).	Yes.
2	Protection Goals	Yes. Project is in compliance. SSPPAs have been created. The 75 percent protection goals set forth in measure 2 were met during construction.	Continuing. Per the Verification section, for the life of the project, record summaries need to be submitted for the Revised Protection Plan and Remedial Action Plan.
9	Surveys on Acquired and Public Lands	Yes. Project is in compliance. Focused surveys were performed in 2011 for Mojave milkweed and Rusby's desert mallow on public lands. The requirement to identify at least the same number of Mojave milkweed and Rusby's desert mallow localities outside of the SSPPAs was met in 2011. Results of the surveys were provided to the California Natural Diversity Database (CNDDDB) and no further steps are necessary to comply with this measure of BIO-18.	Yes.
10	Security for Implementation of Plans	Yes. Funding has been provided.	Yes.

TABLE 2-1

Summary of COC BIO-18 Compliance Measures Completed and In Progress

No.	COC BIO-18 Measure	In Compliance?	Task Complete?
11	Acquire Offsite Occurrence of Mojave Milkweed or Adjacent Land	Yes. Security was provided. Twenty-nine privately or state-owned parcels were evaluated in 2012 for the presence of known Mojave milkweed locations or its suitable habitat (CH2M HILL, 2012b). Parcels reviewed were located in Shadow Valley, Lanfair Valley, and the Barnwell area of the New York Mountains, within the known range of Mojave milkweed. Mojave milkweed was identified on one privately-owned, 37-acre parcel in the New York Mountains in the northern Lanfair Valley. The parcel has been purchased and the easement is in place.	Yes. Security was provided and the acquisition and easement have occurred..

Notes:

The locations of the exclusionary fencing “halos” and mitigation areas (SSPPAs) established in 2010 and referred to in BIO-18 are shown in Figures 5-1 through 5-3 in Appendix C of this report. Figures showing the location of SSPPAs, as adjusted for mortality in 2015, are provided in Section 5 of this report.

Source: COC BIO-18 (see Appendix A)

SECTION 3

Special-status Plant Descriptions

This section provides a brief description of the five special-status plants included in the Revised Protection Plan (Solar Partners, 2010a). More detailed information on the basic distributional and ecological information known for each of these special-status plants can be found in the Special-status Plant Survey Report (GANDA, 2008), the Revised Protection Plan (Solar Partners, 2010a), and the Remedial Action Plan (Solar Partners, 2010b). Photographs of the special-status plants are included in this section and in Appendix B. Photographs of nine-awned pappus grass obtained during the focused 2011 surveys for this species were included in the 2011 BIO-18 Annual Compliance Report (CH2M HILL, 2012a). Additional photographs are provided in the annual compliance reports (CH2M HILL, 2013; 2014) and BIO-18, Special-status Plant As-Built Report (CH2M HILL, 2015b).

3.1 Mojave Milkweed (*Asclepias nyctaginifolia*)

Mojave milkweed is a perennial herb with stems and leaves that die back completely at the end of the growing season (see Photographs 3-1 through 3-4). In California, it produces showy, cream-colored flowers from May to June and again in late summer to fall, if summer rainfall is adequate. The habitat of this species in California includes washes and dry slopes in Mojave desert scrub and pinyon-juniper woodland, from about 3,000 to 5,100 feet in elevation (Solar Partners, 2010a). The distribution of Mojave milkweed in California is limited to a few locations in the eastern Mojave Desert. Mojave milkweed is not federally or state-listed, nor considered a BLM-sensitive species, but it has a California Rare Plant Rank (CRPR) of 2B.1 and a Heritage Program Rank of G4G5/S2 (CDFW, 2015).



PHOTOGRAPH 3-1
Mojave milkweed (by white board) and dry wash habitat



PHOTOGRAPH 3-2
Mojave milkweed in flower



PHOTOGRAPH 3-3
Mojave milkweed seeds (silky hairs aid in seed dispersal)



PHOTOGRAPH 3-4
Mojave milkweed seed pods

3.2 Desert Pincushion (*Coryphantha chlorantha*)

Desert pincushion is a small leafless stem succulent that produces yellow-green to pale pink flowers (see Photographs 3-5 and 3-6). At the ISEGS site, this species was observed in flower between April and May (GANDA, 2008). The habitat of desert pincushion in California is described as Mojave desert scrub, Joshua tree woodland and pinyon-juniper woodland, on gravelly or rocky carbonate (limestone) substrates, from about 3,000 to 7,000 feet in elevation (GANDA 2008). The distribution of desert pincushion in California is restricted to the eastern Mojave Desert in Inyo and San Bernardino counties. Desert pincushion is not federally or state-listed, nor is it a BLM-sensitive species. Desert pincushion is a CRPR List 2B.1 species and has a Heritage Program Rank of G2G3/S2 (CDFW, 2015).



PHOTOGRAPH 3-5
Desert pincushion (in front of the white stake)



PHOTOGRAPH 3-6
Desert pincushion in full bloom

3.3 Parish's Club-cholla (*Grusonia parishii*)

Parish's club-cholla is a clonal stem succulent that forms large, spreading mats of prostrate stems (see Photographs 3-7 and 3-8). The flowers are yellow to red, which appears from May to July in California. The habitat of this species in California is described as Sonoran desert scrub, Mojave desert scrub, and

Joshua tree woodland, in sandy flats, from about 2,950 to 5,000 feet in elevation (Solar Partners, 2010a). The distribution of Parish's club-cholla in California includes the Mojave and Colorado deserts in San Bernardino, Riverside, and Imperial counties. Parish's club-cholla is not federally or state-listed, nor is it a BLM-sensitive species. Parish's club-cholla has a CRPR of 2B.2 and a Heritage Program Rank of G3G4/S2(?)¹ (CDFW, 2015).



PHOTOGRAPH 3-7
Clonal mat of Parish's club-cholla



PHOTOGRAPH 3-8
Parish's club-cholla in fruit

3.4 Nine-awned Pappus Grass (*Enneapogon desvauxii*)

Nine-awned pappus grass is a summer annual in California, meaning that it germinates and grows after summer rain (see Photographs 3-9 and 3-10). It flowers in California from August to September. The habitat of nine-awned pappus grass in California is described as rocky calcareous (limestone) soils in pinyon-juniper woodland from 3,825 to 5,475 feet in elevation (Solar Partners, 2010a). The ISEGS surveys and other collections show that this species also occurs in Mojave desert scrub down to elevations of 2,900 feet (GANDA 2008). The distribution of nine-awned pappus grass in California is limited to the eastern Mojave Desert in San Bernardino County. Photographs of nine-awned pappus grass obtained during the focused 2011 surveys for this species were included in the 2011 Annual Compliance Report (CH2M HILL, 2012a).

Nine-awned pappus grass has a CRPR of 2B.2 and a Heritage Program Rank of G5/S3 (CDFW, 2015). It is not federally or state-listed, nor is it a BLM-sensitive species. As described in the Revised Protection Plan, this species germinates and grows from an existing seed bank in years with adequate summer rainfall. No special avoidance or salvage procedures were proposed other than seed collection from onsite localities in case species-specific remedial measures are needed. Several localities of nine-awned pappus grass were identified during focused surveys in 2011 (CH2M HILL, 2012a).

¹ ? denotes uncertainty in the CRPR rank (CDFW, 2015)



PHOTOGRAPH 3-9
Nine-awned pappus grass



PHOTOGRAPH 3-10
Nine-awned pappus grass inflorescence

3.5 Rusby's Desert Mallow (*Sphaeralcea rusbyi* var. *eremicola*)

Rusby's desert mallow is a small (to 18 inches), soft-woody subshrub with showy, dark apricot-colored flowers and drought deciduous leaves (see Photographs 3-11 and 3-12). Information on how to identify Rusby's desert mallow and additional photographs of this species are provided in more detail in the Rusby's Desert Mallow and Mojave Milkweed Surveys on Public Lands Report (CH2M HILL, 2012a). The palmately compound leaves distinguish this species from the much more common species, desert mallow (*Sphaeralcea ambigua*). The habitat of Rusby's desert mallow includes Mojave desert scrub and Joshua tree woodland at elevations of 2,925 to 4,500 feet (Solar Partners, 2010a).

Rusby's desert mallow is endemic to California, where it is restricted to the eastern Mojave Desert. Rusby's desert mallow is not federally or state-listed. It has a CRPR of 1B.2 and a Heritage Program Rank of G4T2/S2 (CDFW, 2015). Species with a CRPR of 1B are considered a sensitive species by BLM (BLM, 2009).



PHOTOGRAPH 3-11
Close view of Rusby's desert mallow flower



PHOTOGRAPH 3-12
Rusby's desert mallow. The leaves (shown above) are an important characteristic for identifying this species.

SECTION 4

Monitoring Methods

This section describes the methods used to establish the SSPPAs and assess plant survivorship and health and vigor in the protected areas during construction and operation. During construction, monitoring was performed from 2011 through 2013. Year-1 of the post-construction monitoring commenced in fall 2014, following the transition of ISEGS from construction to operational status. Year-2 of post-construction monitoring was conducted in 2015 and is the subject of this report.

4.1 Special-status Plant Protection Areas

Pre-construction surveys were performed in Spring 2010 as outlined in the Revised Protection Plan (Solar Partners, 2010a) to relocate, map, and stake in the field all special-status plant localities and individual plants that were to be avoided or salvaged. Data collected during these surveys combined with the final engineering layout were used to create the SSPPAs. Exclusionary fences in the solar field were installed around special-status plants and associated habitat. These fenced areas are also referred to in BIO-18 as “halos.” Collectively, the three mitigation areas and the exclusionary fenced areas (“halos”) are referred to as SSPPAs. Except for minor adjustments (for example, a few plants noted as present in 2010 were missing or dead by the time fencing was placed), exclusionary fencing was installed in 2010 and 2011 at all of the areas in the solar fields shown on Figures 5-1 through 5-3 of the Revised Protection Plan (Solar Partners, 2010a) (Appendix C of this report). The location of the three mitigation areas is also shown on Figures 5-1 and 5-3.

4.2 Plant Protection Goals

The objective in establishing the SSPPAs was to attain the 75 percent special-status plant protection goal required by BIO-18. The number of SSPPAs established in 2010 and the number of plants within them forms the pre-project baseline, as required by BIO-18. Table 4-1 lists the target number of localities and plants to be protected to attain the 75 percent protection goal. Results of the 2015 post-construction monitoring, as measured against these target protection goals, are presented in Section 5, Results.

TABLE 4-1

Special-status Plant Localities and Individuals Proposed for Protection, Salvage, or are Included in Mitigation Area

Special-status Plant Scientific Name ^a	Special-status Plant Common Name	Total Number of Localities to be Avoided ^b	Total Number of Plants to be Avoided ^b
<i>Asclepias nyctaginifolia</i>	Mojave milkweed	40	85
<i>Coryphantha chlorantha</i>	Desert pincushion	127	135
<i>Grusonia (=Opuntia) parishii</i>	Parish’s club-cholla ^c	10	16
<i>Sphaeralcea rusbyi</i> var. <i>eremicola</i>	Rusby’s desert mallow	3	3

Notes:

^a Nine-awned pappus grass is a summer annual in California, meaning that it germinates and grows after adequate summer rainfall. Because of the ecology of this species, special protection procedures for nine-awned pappus grass outside the three mitigation areas have not been established. Surveys for this species were performed in 2011. The protection goal was attained for this species. See the 2011 BIO-18 Annual Compliance Report (CH2M HILL, 2012a) for more information.

^b Minor adjustments (for example, plants missing or dead) were made to correct the total numbers of localities and plants to be avoided from those originally presented in the Revised Protection Plan

^c As described in the Revised Protection Plan, Parish’s club-cholla individuals not included in the mitigation areas were salvaged and replanted in the RPTA-1.

Sources:

Revised Protection Plan (Solar Partners, 2010a); BIO-18 Annual Compliance Reports (CH2M HILL, 2012a; 2013; 2014; 2015c).

As required by BIO-18, the number of special-status plants identified post-construction are to be compared to the number of plants identified in the pre-project baseline. Percent survival (as a measure of plant protection) is the quantitative benchmark against which performance will be measured. Plant protection will be determined successful if the 75 percent protection goal is attained as described in the Revised Protection Plan (Solar Partners, 2010a). Characteristics such as health and vigor, reproduction, seed production, and recruitment are site characteristics that will be monitored over time but have no fixed success criteria. In addition to determining if the protection goal is met, results of monitoring will be used to help determine management or remedial actions and to document a trend of long-term persistence and reproduction onsite.

Little is known about the life history, longevity, recruitment, rate of variation across a site, and numerous other ecological variables for these special-status plants. The 75 percent protection target may be biologically unattainable, even in sites that are completely undisturbed. The practicability and attainability of these protection goals have never been demonstrated.

4.3 Special-status Plant Monitoring

As described in BIO-18 (Appendix A), special-status plant monitoring will be performed for 10 years following construction, or until success criteria are met, to determine whether the special-status plants that have been protected persist in the protected areas over time. The monitoring schedule from the Revised Protection Plan is shown in Table 4-2.

Monitoring during construction was performed from 2011 through 2013. The first year of post-construction monitoring was conducted in 2014. Year-2 of post-construction monitoring was performed in 2015. Results of Year-2 monitoring are the subject of this report. The final BIO-18 Special-status Plant As-built Report (CH2M HILL, 2015b) documents the size and shape of the SSPAs and the amount of area protected.

TABLE 4-2
ISEGS Special-Status Plant Mitigation Monitoring Schedule

Location	As-Built Data Collection ^a			Success Criterion and Long-Term Persistence Trend Monitoring										
	Year			Year										
	1	2	3	1	2	3	4	5	6	7	8	9	10	11
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
As-Built Monitoring^a														
Ivanpah 1 and CLA	X													
Ivanpah 2		X												
Ivanpah 3		X	X											
Success Criterion Monitoring^b														
Percent survivorship			X	X	X	X	X	X	X	X	X	X	X	X
Long-Term Persistence Trend Monitoring^c														
Health and vigor data	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Annual reporting	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Final evaluation of success criterion and reporting														X

^a At the time Table 8-1 of the Revised Protection Plan was prepared, it was assumed that each solar field would be constructed independently but construction of the project was performed concurrently. The annual monitoring reports functioned as interim as-built reports. Final as-built conditions were documented in the BIO-18 As-Built Report (CH2M HILL 2015b).

^b The percent survivorship goal of BIO-18 is 75 percent.

^c Health and vigor data are collected during the percent survivorship assessment but trend data are not tied to the 75 percent survivorship success criterion (see Revised Protection Plan for more details).

Source: Revised Protection Plan (Solar Partners, 2010a), Table 8-1

4.3.1 During-Construction Monitoring (2011 through 2013)

Every plant with protective exclusionary fencing or in a mitigation area that was mapped previously as an SSPPA was revisited from 2011 through 2013 to assess survivorship and plant health and vigor. Table 4-3 lists information collected in the GPS unit and on hard copy data sheets. Appendix D provides the datasheet used to collect additional field data. Each locality and individual plant was assigned a unique identification number so it could be tracked over time. An aluminum tag with the unique identification number was placed near the base of each plant. A heavy-duty, plastic stake was also installed near each plant. Results of 2011 through 2013 special-status plant construction monitoring are included in the 2011, 2012, and 2013 BIO-18 Annual Compliance Reports (CH2M HILL, 2012a; 2013; 2014). A 75 percent survivorship rate was recorded in all three construction monitoring years.

TABLE 4-3
ISEGS Year-2 (2015) Post-Construction Data Collected in SSPPAs

Mojave milkweed	Desert pincushion	Parish's club-cholla	Rusby's desert mallow
Plant ID #	Plant ID #	Plant ID #	Plant ID #
New Plant	New Plant	New Plant	New Plant
Plant Absent	Plant Absent	Plant Absent	Plant Absent
Seedling Count	Plant Dead	Plant Dead	Plant Dead
Vigor Score	Vigor Score	Vigor Score	Vigor Score
Phenology	Phenology	New Growth	Phenology
Grazing Damage	Head Number	% Dead	Grazing Damage
Dig-Down Depressions	Grazing Damage	Phenology	# Stems
# Flower Clusters	# Flowers	# Clumps	# Flowers
# Fruits	# Fruits	# Flowers	# Fruits
Seeds Present	Pollinators Observed	# Fruits	Seeds Present
Pollinators Observed		LYSF Pollinators Observed	Pollinators Observed

Notes:

All SSPPAs in the solar field searched for recruits

The condition of the SSPPA rope, stake, and unique identification tag are also noted

LYSF = last year's sterile fruits

4.3.2 Post-Construction Monitoring (2014 through 2023)

Objectives of the post-construction monitoring are to collect survivorship data needed to determine if the 75 percent survivorship success criterion has been achieved in the protected areas and to assess special-status plant health and vigor. The first year of post-construction monitoring was completed in 2014. Results of post-construction monitoring were included in the Year-1 (2014) BIO-18 Annual Compliance Report (CH2M HILL, 2015c). The 75 percent survivorship goal was met in 2014. Year-2 of the post-construction monitoring was performed in 2015 and is the subject of this report.

Before performing field work, geographic information system (GIS) analysts created background and data files that contained the location and unique identification number for each special-status plant. Maps showing the location of the special-status plants were created for use in the field. A GIS analyst loaded the GPS data and background files along with a project-specific data dictionary onto GPS units with submeter accuracy and reviewed data collection procedures with the botanical team. The botanists used the GPS units to navigate and relocate known localities of special-status plants and to collect monitoring and other field data. Presence and absence data along with ecological information were recorded at each SSPPA in the solar field and mitigation areas. Table 4-3 lists information collected in the GPS and on hard copy data sheets. The

datasheet used to collect additional field data is provided in Appendix D. Field work was conducted by botanists familiar with the flora of the Mojave Desert and several years of experience with the special-status plants at ISEGS. Field work was performed on April 20, 22-24, 27, and May 4-6, 9, 10, 18, 19, 21, and 23-24, 2015.

The SSPPAs were carefully searched for recruits. Any new special-status plants that were found in a SSPPA during fieldwork were mapped using GPS, assigned a unique identification number, and survivorship and health assessment data were recorded. Photographs of each special-status plant were taken to document field conditions and the status of the special-status plant at the time monitoring was performed.

Data collected on hard copy datasheets were input by hand into an excel spreadsheet. GPS data were downloaded, post-processed, mapped, and exported in an excel format. All maps, datasheets, and exported data tables were checked against field maps, datasheets, and notes to confirm that the information collected was correct. Changes were made to the exported excel tables as needed, and then the excel data tables were re-imported into GIS to create the final 2015 special-status plant monitoring database. Final maps were prepared by GIS based on the corrected excel data tables.

SECTION 5

Monitoring Results

This section includes results of Year-2 (2015) post-construction special-status plant monitoring. Tables 5-1 and 5-2 list the number of avoided special-status localities and individuals identified in 2015, by species, for each project component, compared to the protection goals established in the Revised Protection Plan (Solar Partners, 2010a). Table 5-3 provides a comparison of 2014 to 2015 monitoring results for each species. The 75 percent protection goal for special-status plants was attained again in 2015 (see Tables 5-1 and 5-2). Figures 5-1 through 5-3 show the location of SSPPAs.

Results of monitoring during construction are presented in the 2011, 2012, and 2013 BIO-18 Annual Compliance Reports. Results of Year-1 post-construction monitoring are presented in the BIO-18 Year-1 (2014) Post-Construction Monitoring Report (CH2M HILL, 2015c).

TABLE 5-1
ISEGS Special-status Plants by Location, Year-2 (2015) Post-Construction Monitoring

Special-status Plant Common Name	Number of Localities Avoided in Solar Field	Number of Plants Avoided in Solar Field	Number of Localities Avoided in Mitigation Areas	Number of Plants Avoided in Mitigation Areas	Total Number of Localities Avoided Onsite	Total Number of Plants Avoided Onsite	Protection Goal Attained in 2015
Mojave milkweed	28	63	19	39	47	102	Yes
Desert pincushion	54	57	124	130	178	187	Yes
Parish's club-cholla	0	0	15	21	15	21	Yes*
Rusby's desert mallow	2	2	1	1	3	3	Yes
Total	84	122	159	191	243	313	Yes

* Parish's club-cholla is well-adapted to vegetative propagation. For this reason, calculations of plant protection for this species include the plants salvaged from the construction footprint (in the CLA and Ivanpah 1) and replanted into the RPTA-1 (107 localities and 135 plants), which are not included in Table 5-2. As outlined in the Revised Protection Plan, a total of 8 localities and 15 individuals (clonal mats) were also protected in place, predominantly in the CLA-1 mitigation area. The salvaged and transplanted Parish's club-chollas in the RPTA-1 are available for use as propagules, should remedial measures be required, and for replanting in short-term disturbance areas. The transplanted Parish's club-cholla plants present in the RPTA-1 (135 plants) and the Parish's club-cholla protected in place in the mitigation areas together exceed the 75 percent protection goal for this species.

Notes:

The Solar Field is composed of Ivanpah 1, 2 and 3 (Figure 1-2).

The three mitigation areas total 476 acres and are referred to as the Construction Logistics Area (CLA)-1, CLA-2, and the Northern Rare Plant Mitigation Area (NRPMA), north of Ivanpah 3 (Figure 1-2).

Nine-awned pappus grass is a summer annual in California, meaning that it germinates and grows after adequate summer rainfall. Because of the ecology of this species, special protection procedures for nine-awned pappus grass outside the three mitigation areas have not been established. See Table 3-4 of the 2011 BIO-18 Annual Compliance Report (CH2M HILL, 2012a) for more information on this species.

TABLE 5-2

Special-status Localities and Individuals Protected by Exclusionary Fencing or Included in Mitigation Area in 2015

Common Name (Scientific Name)	Site Element	Special Status Plant Localities ^{a,b}			Special Status Plant Individuals ^a			Protection Goal Attained
		Total Number of Localities (from 2010 Protection Plan)	Total Number of Localities Avoided in 2015	Percent of Localities Avoided in 2015	Total Number of Individuals (from 2010 Protection Plan)	Total Number of Plants Avoided in 2015	Percent of Individuals Avoided in 2015	
Mojave milkweed (<i>Asclepias nyctaginifolia</i>)^c								
	CLA	2	0	0%	2	0	0	
	Ivanpah 1	11	9	82%	32	26	81%	
	Ivanpah 2	3	3	100%	5	4	80%	
	Ivanpah 3 ^c	25	16	64%	36	33	92%	
	Gas Line Corridor	0	0	0%	0	0	0	
	CLA-1 ^c	4	4	100%	24	20	83%	
	CLA-2	0	0	0%	0	0	0	
	NRPMA ^d	8	15	188%	14	19	136%	
Total Proposed in 2010 Compared with Total Avoided in 2015		53	47	89%	113	102	90%	
TOTAL REQUIRED TO ATTAIN 75% PROTECTION GOAL^a			40			85		Yes
Rusby's desert mallow (<i>Sphaeralcea rusbyi</i> var. <i>eremicola</i>)								
	CLA	0	0	0%	0	0	0%	
	Ivanpah 1	1	1	100%	1	1	100%	
	Ivanpah 2	1	0	0%	1	0	0%	
	Ivanpah 3	1	1	100%	1	1	100%	
	Gas Line Corridor	0	0	0%	0	0	0%	
	CLA-1	0	0	0%	0	0	0%	
	CLA-2	0	0	0%	0	0	0%	
	NRPMA	1	1	100%	1	1	100%	
Total Proposed in 2010 Compared with Total Avoided in 2015		4	3	75%	4	3	75%	
TOTAL REQUIRED TO ATTAIN 75% PROTECTION GOAL^a			3			3		Yes

TABLE 5-2
Special-status Localities and Individuals Protected by Exclusionary Fencing or Included in Mitigation Area in 2015

Common Name (Scientific Name)	Site Element	Special Status Plant Localities ^{a,b}			Special Status Plant Individuals ^a			Protection Goal Attained
		Total Number of Localities (From 2010 Protection Plan)	Total Number of Localities Avoided in 2015	Percent of Localities Avoided in 2015	Total Number of Individuals (From 2010 Protection Plan)	Total Number of Plants Avoided in 2015	Percent of Individuals Avoided in 2015	
Desert pincushion (<i>Coryphantha chlorantha</i>)								
	CLA	7	0	0%	7	0	0%	
	Ivanpah 1 ^e	32	18	56%	33	18	55%	
	Ivanpah 2 ^e	29	14	48%	31	16	52%	
	Ivanpah 3	30	22	73%	31	23	74%	
	Gas Line Corridor	1	0	0%	1	0	0%	
	CLA-1 ^d	7	18	257%	7	18	257%	
	CLA-2 ^f	0	0	0%	0	0	0%	
	NRPMA ^d	63	106	168%	70	112	160%	
Total Proposed in 2010 Compared with Total Avoided in 2015		169	178	105%	180	187	104%	
TOTAL REQUIRED TO ATTAIN 75% PROTECTION GOAL^a			127			135		Yes
Parish's club cholla (<i>Grusonia (=Opuntia) parishii</i>)^g								
	CLA	52	0	0	70	0	0	
	Ivanpah 1	55	0	0	65	0	0	
	Ivanpah 2	0	0	0	0	0	0	
	Ivanpah 3	0	0	0	0	0	0	
	Gas line Corridor	0	0	0	0	0	0	
	CLA-1 ^d	7	10	143%	13	16	123%	
	CLA-2 ^{d,h}	1	3	300%	1	3	300%	
	NRPMA	0	2	0	0	2	0	
Total Proposed in 2010 Compared with Total Avoided in 2015		115	15	13%	149	21	14%	
Avoidance and Salvage in Compliance with Special-Status Protection Plan^{a,e}								Yes^g

TABLE 5-2

Special-status Localities and Individuals Protected by Exclusionary Fencing or Included in Mitigation Area in 2015

- ^a Plants are considered avoided as a SSPPA if surrounded by exclusionary fencing (“halo”) or if the plant is located within one of the three mitigation areas. The target number of plants and localities proposed for avoidance or salvage are the goals listed in Table 5-1 and as shown on Figures 5-1 through 5-3 of the Revised Protection Plan (Solar Partners, 2010a). On an individual plant basis, the target salvage goals from the Revised Protection Plan are listed in this table instead of the actual number of plants salvaged. This is because many more desert pincushion, Mojave milkweed, and Parish’s club-cholla were salvaged from the site compared with the number planned. These individuals were planted in the RPTA-1 and the Common Succulent Transplant Area. If one or more plants were salvaged from a locality with many individuals, the entire locality is not counted as salvaged.
- ^b The number of fences in the field is not the same as the number of avoided localities. Some localities were split into two fenced areas because of the layout of the heliostat field spoke roads. In a few places, two localities were placed within a larger fence.
- ^c Includes two localities of Mojave milkweed in addition to the number originally proposed that were salvaged (one in CLA-1 because of the gen-tie line and one in Ivanpah 3).
- ^d More plants were protected than required in the protection plan. In locations where there were no 2010 avoidance percentage goals (for example, NRPMA), percentages are expressed as more than 100 percent in the Percent of Localities Protected and Individuals Avoided columns and included in the total avoidance calculations.
- ^e During fencing of the SSPPAs (“halos”), three desert pincushions in Ivanpah 2 and one desert pincushion in Ivanpah 1 planned for fencing were dead or had been misidentified. When this stem succulent cactus is very small, (the size of a quarter or less), it is difficult to distinguish desert pincushion from a very-similar appearing cactus species; therefore, the numbers proposed in this table have been adjusted downward.
- ^f A total of 16 desert pincushion were transplanted into CLA-2. These plants are included in the RPTA-1 tally and are therefore not included in the survivorship calculations presented in Tables 5-1 and 5-2.
- ^g Parish’s club-cholla is well-adapted to vegetative propagation. For this reason, calculations of plant protection for this species include the plants salvaged from the construction footprint (in the CLA and Ivanpah 1) and replanted into the RPTA-1 (107 localities and 135 plants), which are not included in this table. As outlined in the Revised Protection Plan, a total of 8 localities and 15 individuals (clonal mats) were also protected in place, predominantly in the CLA-1 mitigation area. The salvaged and transplanted Parish’s club-chollas in the RPTA-1 are available for use as propagules, should remedial measures be required, and for replanting in short-term disturbance areas. The transplanted Parish’s club-cholla plants present in the RPTA-1 (135 plants) and the Parish’s club-cholla protected in place in the mitigation areas together exceed the 75 percent protection goal for this species.
- ^h The Parish’s club-cholla located in CLA-2 was initially salvaged instead of protected within the mitigation area as originally planned because of placement of the tortoise fence but this locality grew back).

TABLE 5-3
Number of Localities and Plants Protected at ISEGS in 2014 and 2015

Special-status Plant Species	Solar Field				Mitigation Areas				Avoided Onsite			
	# of Localities		# of Plants		# of Localities		# of Plants		Total # of Localities		Total # of Plants	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
Mojave milkweed	28	28	70	63	21	19	43	39	49	47	113	102
Desert pincushion	52	54	57	57	115	124	123	130	167	178	180	187
Parish's club-cholla	0	0	0	0	15	15	21	21	15	15	21	21
Rusby's desert mallow	2	2	2	2	1	1	1	1	3	3	3	3
Total	82	84	129	122	152	159	188	191	234	243	317	313

5.1 Special-status Plants SSPPAs

The 75 percent protection goal for special-status plants was attained again in 2015 (Tables 5-1 and 5-2). Figures 5-1 through 5-3 show the location of SSPPAs recorded during the 2015 monitoring. Appendix C provides the location of SSPPAs proposed in the 2010 Revised Protection Plan (Solar Partners, 2010a). Tables 5-1 and 5-2 list the number of avoided special-status localities and individuals for 2015, by species, for each project component, compared to the protection goals established in the Revised Protection Plan. A comparison of 2014 and 2015 monitoring results is included in Table 5-3.

The calculations of numbers of plants protected have excluded plants recorded as “Missing” (plants not present at the time of data collection) and “Dead.” Figures 5-1 and 5-2 show plants that were “Missing” or “Dead.” An unknown number of Mojave milkweed plants recorded as “Missing” may be observed in future years if there is sufficient precipitation to result in regrowth aboveground.

Table 5-2 shows the number of localities and plants by species, by project component. As shown in Tables 5-1 and 5-2, the 75 percent protection success criterion was met for all of the special-status plant species in 2015. The 75 percent protection goal was also met for all monitoring periods during construction. Results of Year-1 Post-construction monitoring are provided in the Year-1 (2014) Post-construction Monitoring Report (CH2M HILL, 2015c).

After accounting for mortality, a total of 243 special-status plant localities (with 313 plants) were protected within SSPPAs in the solar field and three mitigation areas in 2015 (Tables 5-1 through 5-3). The number of localities and plants increased slightly onsite between 2014 and 2015, primarily due to higher numbers of desert pincushion being observed in the protected mitigation areas. In 2014, a total of 234 localities with 317 plants were identified in the solar field and mitigation areas (CH2M HILL, 2015c). This corresponds to an increase of 9 localities and 4 plants between 2014 and 2015.

As shown in Table 5-3, the number of Mojave milkweed localities and plants decreased in the solar fields and mitigation areas between 2014 and 2015 (from 49 localities and 113 plants (2014) to 47 localities and 102 plants (2015) possibly due to a relatively dry spring (Scheib, 2016). Higher than average precipitation is predicted to occur in 2016; and if this occurs, it is likely that the numbers of Mojave milkweed will increase in 2016.

In Ivanpah 1, 2 and 3, a total of 84 special-status plant localities (with 122 plants) were recorded in 2015 (Tables 5-1 and 5-2). This corresponds to an increase of two localities compared to 2014, but the number of Mojave milkweed plants in the solar field declined slightly, from 129 (2015) to 122 (2014) (Table 5-3).

In the three mitigation areas, the number of localities and plants increased slightly between 2014 and 2015. A total of 159 localities with 191 plants were identified in 2015. In 2014, 152 localities and 188 plants were recorded (Table 5-3).

5.1.1 Plant Salvage and Transplantation

As described in the Revised Protection Plan (Solar Partners, 2010a), SSPPAs within the solar field for Parish’s club-cholla were not planned because of the ease with which this species was expected to be salvaged and transplanted. Experience with transplanting this species to date has verified this initial assumption. The approximate location of plants specified for salvage is shown in Figures 5-1 through 5-3 of the Revised Protection Plan (see Appendix C).

Substantial numbers of special-status plants were salvaged exceeding the Revised Protection Plan salvage goals. To date, 442 Mojave milkweed, desert pincushion, Parish’s club-cholla, and Rusby’s desert mallow have been salvaged from the solar field or impacted areas and transplanted into RPTA-1. For the first two seasons, plants were watered regularly when water demands were high. After that, supplemental watering was reduced to more closely match natural conditions.

In addition to the Mojave milkweed, desert pincushion, Parish's club-cholla, and Rusby's desert mallow plants salvaged and replanted in the RPTA-1, approximately 430 desert pincushion in excess of the special-status plant protection goals were salvaged from Units 1, 2 and 3, and other areas impacted during construction. These individuals have been replanted into the Common Succulent Transplant Area.

Special-status plants need to be re-established in the gas line corridor to comply with BIO-18. The location of the gas line is shown in Figure 1-2. Some of the salvaged plants have been used in revegetation along the natural gas line corridor, other plants will be used in revegetation of the short-term disturbance areas, and the rest will be held in reserve, in case remedial measures are needed. Special-status plant revegetation along the gas line corridor is described separately in the BIO-18 Special-status Plants Gas Line Corridor Revegetation Report (CH2M HILL, 2015a).

5.1.2 Nine-awned Pappus Grass

As described in Section 2 of this report, protection of nine-awned pappus grass was also required in BIO-18. Protection of this species in the solar field with exclusionary fences was not performed (Solar Partners, 2010a). This is because this species is a "summer annual," meaning it germinates and grows in response to summer or fall rainfall and does not persist in exactly the same location year-to-year. Fall surveys were performed for this species in 2011 in compliance with BIO-18, and results of these surveys are described in Appendix D of the 2011 Annual Compliance Report. The 75 percent protection goal for nine-awned pappus grass was attained in 2011, and no additional measures are required for compliance with BIO-18.

5.1.3 Special-status Plant Buffer Environmentally Sensitive Areas

Surveys of the 250-foot buffer were performed in spring 2010 and fall 2011 as required and were updated with any new finds during construction. As required, special-status plant localities identified within the 250-foot buffer are denoted on project plans and figures as ESAs and signs were installed next to them (see Figures 5-1 through 5-3).

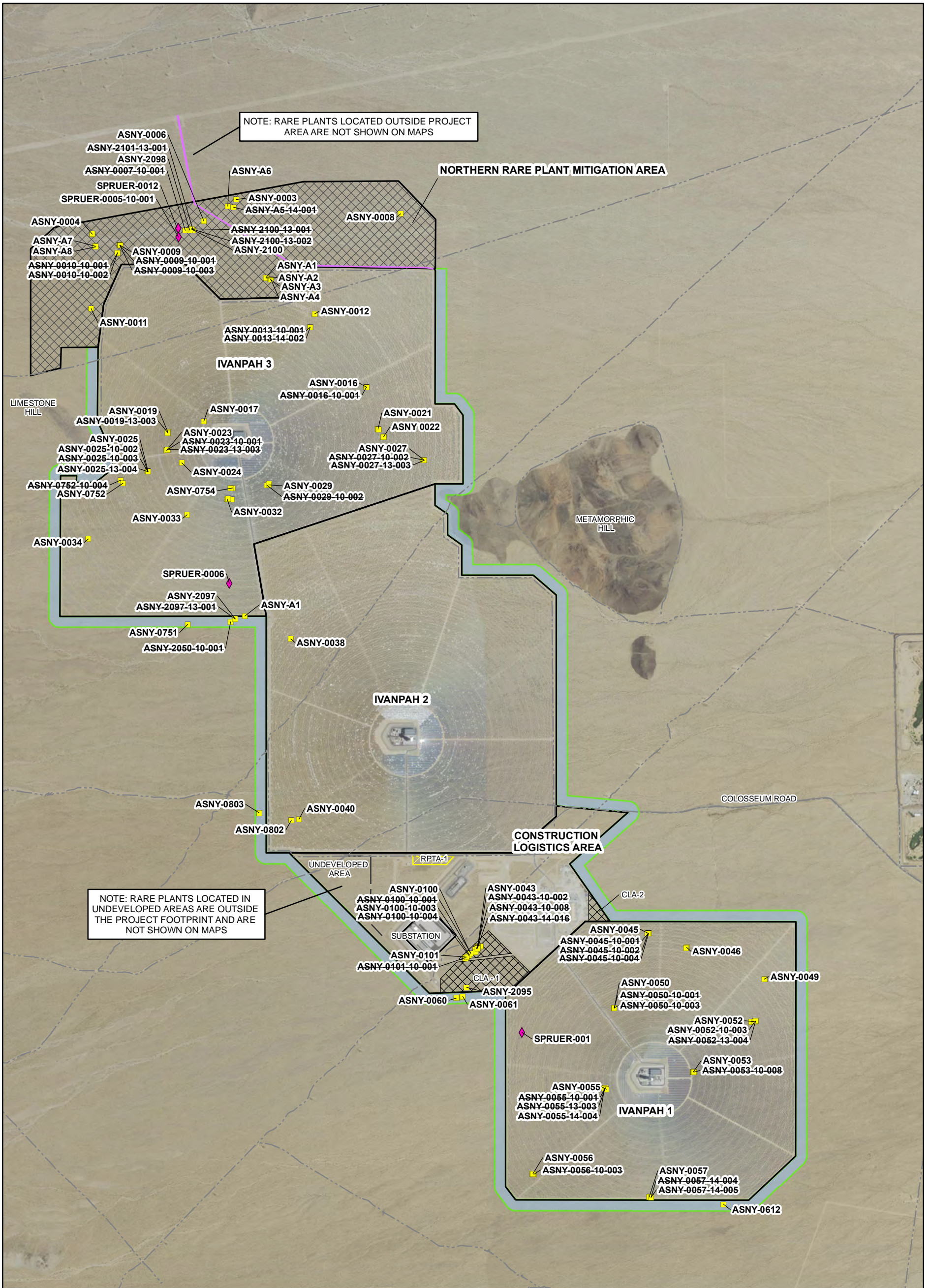
Regular checks and repairs of the signs adjacent to the plants were performed between 2011 through 2015 as part of special-status plant maintenance and construction monitoring. Additional checks during operation and repairs or upkeep of the sensitive resource signs will be conducted to comply with this portion of BIO-18.

5.2 Additional Special-status Plant Compliance Monitoring

5.2.1 Year-3 (2016) Post-construction Monitoring

Monitoring of the SSPPAs and other elements of the Special-status Plant Protection Program will be conducted as described in the Revised Protection Plan (Solar Partners, 2010a). Monitoring data will be collected and assessed over the 10-year monitoring period to identify short-term and long-term persistence trends. Short-term and long-term protection goals, and the monitoring procedures for each special-status species, are described in Sections 7 and 8 of the Revised Protection Plan (Solar Partners, 2010a).

Year-3 of the post-construction monitoring will be performed in 2016. Monitoring data will be evaluated to determine if the 75 percent protection goal continues to be met over time. If the 75 percent protection standard is not attained, remedial measures will be performed as described in the Remedial Action Plan (Solar Partners, 2010b). Annual monitoring reports following construction will be provided by January 31 of each calendar year within the 10-year monitoring timeframe. The Year-3 (2016) post-construction monitoring report will be submitted by January 31, 2017.



LEGEND

- Mojave milkweed (ASNY)
Asclepias nyctaginifolia
- ◆ Rusby's Desert Mallow (SPRUER)
Sphaeralcea rusbyi var. *eremicola*

- ASNY - 0060 Plant Present
- ASNY - 0100 Plant Missing or Dead

- Trails and Roads
- ▭ Project Site
- ▭ 250-ft Site Buffer
- ▭ 50-foot Corridor of Gas Line
- ▭ Mitigation Area
- ▭ Rare Plant Transplantation Area (RPTA-1)

Aerial Imagery courtesy of
ESRI Basemaps (NAIP 2014):
May 26, 2014

Note:
1) Rare plant localities within the 250-foot
buffer are Environmental Sensitive Areas (ESAs).

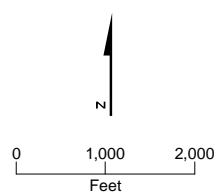
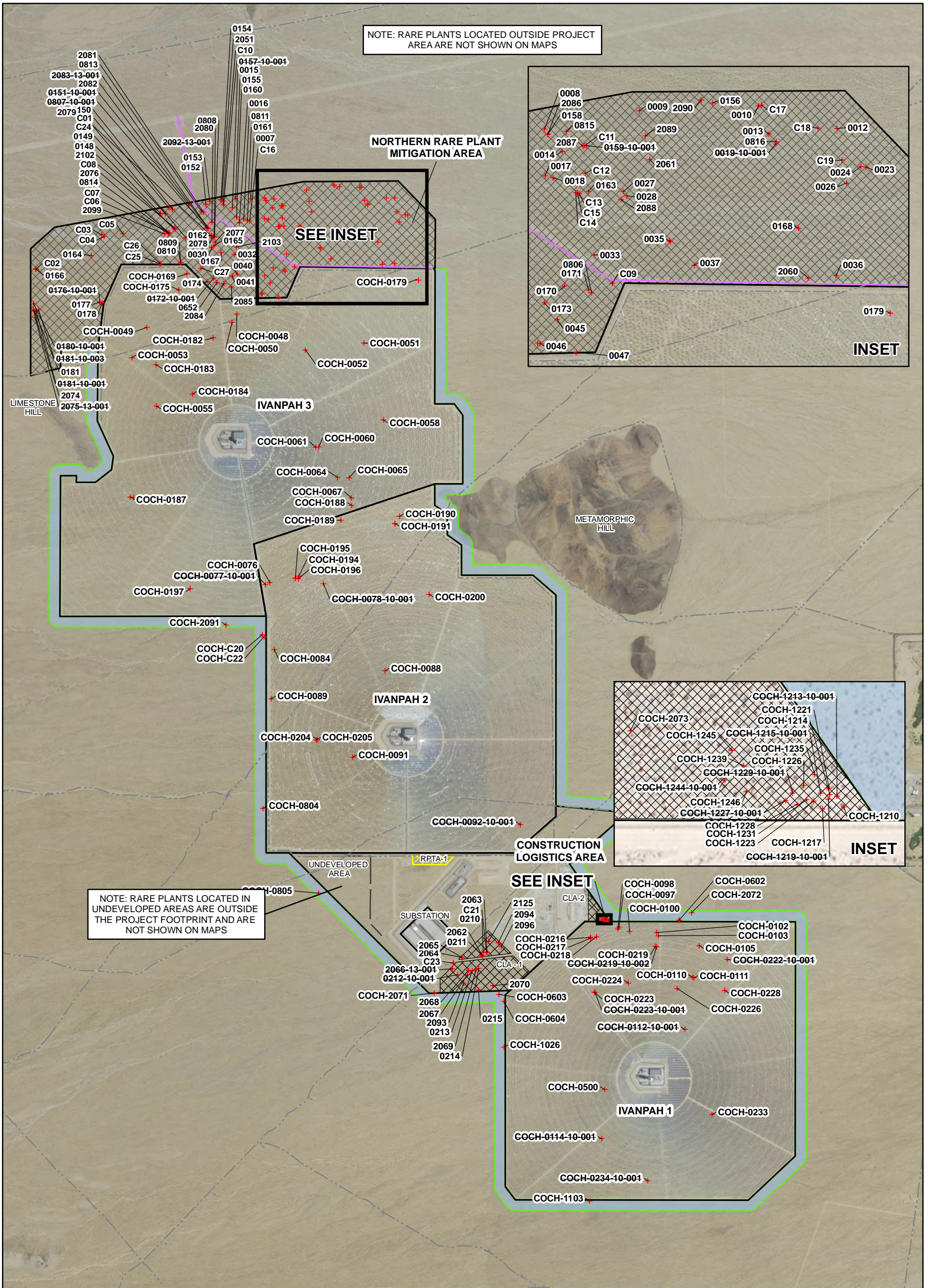


Figure 5-1
Location of Mojave Milkweed and
Rusby's Desert Mallow
Year 2 (2015)
Post-Construction Monitoring Report
Ivanpah Solar Electric Generating System



LEGEND

- + Desert pincushion *Coryphantha chlorantha* (COCH)
- COCH - 1210 Plant Present
- COCH - 1213 Plant Missing or Dead

- Trails and Roads
- Project Site
- 250-ft Site Buffer
- 50-foot Corridor of Gas Line
- Mitigation Area
- Rare Plant Transplantation Area (RPTA-1)

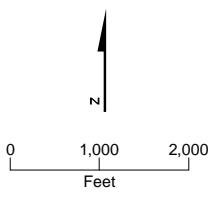
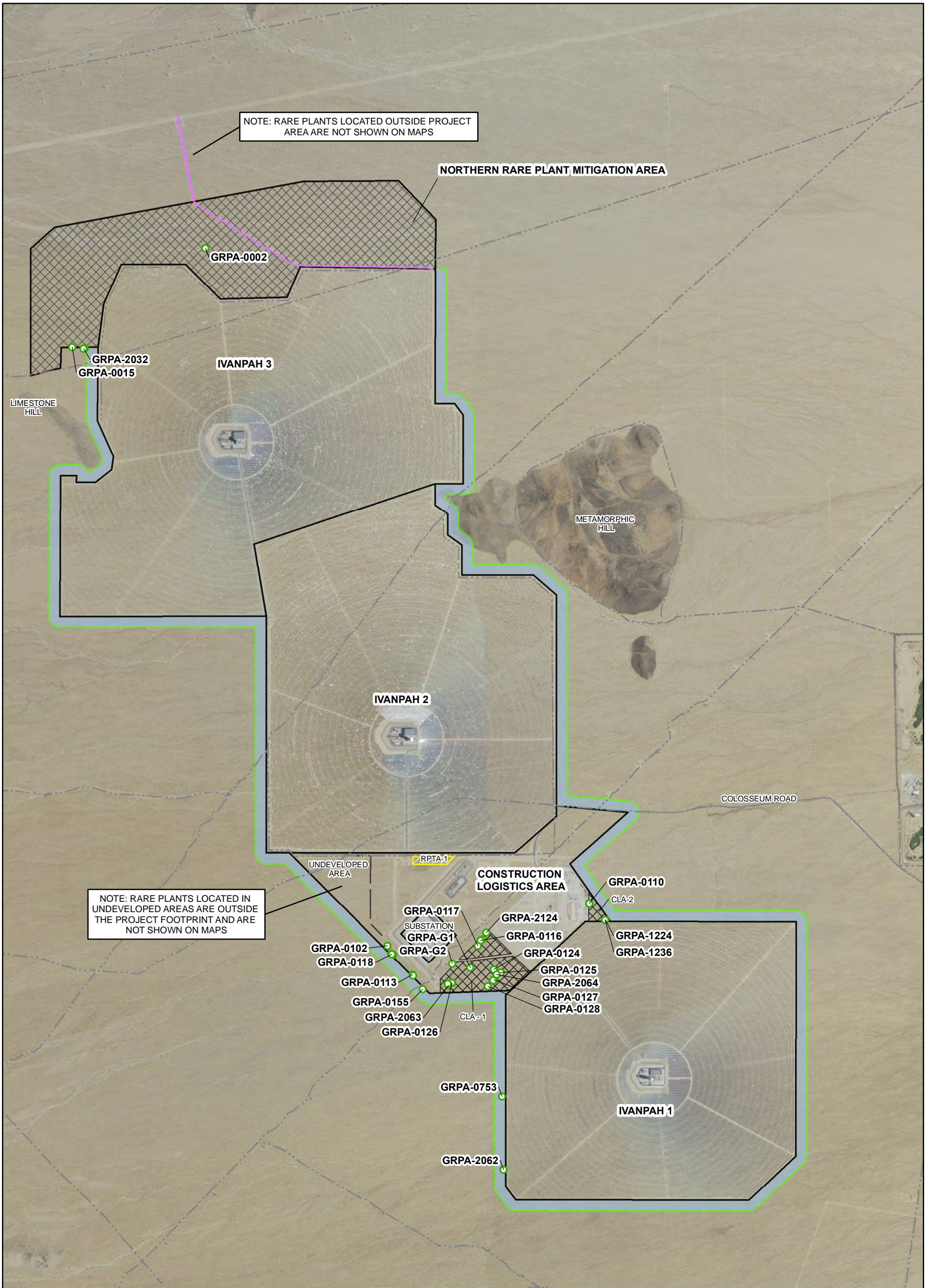


Figure 5-2
Location of Desert Pincushion
Year 2 (2015)
Post-Construction Monitoring Report
 Ivanpah Solar Electric Generating System

Aerial Imagery courtesy of ESRI Basemaps (NAIP 2014): May 26, 2014

Note: 1) Rare plant localities within the 250-foot buffer are Environmental Sensitive Areas (ESAs).



LEGEND
 ● Parish's club cholla
Grusonia (=Opuntia) parishii (GRPA)

GRPA - 00002 Plant Present

--- Trails and Roads
 □ Project Site
 ■ 250-ft Site Buffer
 ■ 50-foot Corridor of Gas Line
 ▨ Mitigation Area
 ▨ Rare Plant Transplantation Area (RPTA-1)

Note:
 1) Rare plant localities within the 250-foot buffer are Environmental Sensitive Areas (ESAs).
 2) GRPA-2032 is in the 250-foot buffer.
 GRPA-0015 is in the NRPMA.

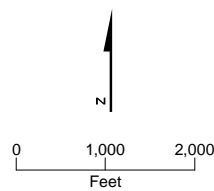


Figure 5-3
Location of Parish's Club-cholla
Year 2 (2015)
Post-Construction Monitoring Report
 Ivanpah Solar Electric Generating System

SECTION 6

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Appendix A
Condition of Certification BIO-18

sections 2069 and 2099 or any other applicable in-lieu fee provision, the Project owner shall notify the Commission that it would like a determination that the Project's in-lieu fee proposal meets CEQA and CESA requirements.

SPECIAL-STATUS PLANT IMPACT AVOIDANCE AND MINIMIZATION

BIO-18 The project owner shall implement the following measures to avoid and minimize impacts to special-status plant species. Items 2, 3, 5, 6, 7, 10, and 11 are recommended exclusively by Energy Commission staff.

1. On-Site Plant Avoidance/Minimization Areas: To the extent feasible the project owner shall avoid and minimize disturbance to all special-status plant species within the project site. Impact avoidance (i.e., protection from project-related impacts of any kind through removal of acreage from the project footprint) and impact minimization efforts shall occur in all feasible locations. Impact avoidance shall focus on areas that support the highest density and diversity of special-status plant species and shall remove, at a minimum, the three areas totaling 476 acres and labeled "Rare Plant Mitigation Area" in Project Description Figure 13 from the Staff's FSA Addendum dated March 16, 2010 (Exhibit 315). The natural gas pipeline shall be aligned and narrowed to avoid special-status plant occurrences north of Ivanpah 3 as depicted in Project Description Figure 13. Impact minimization shall be conducted throughout the site. Impact minimization within the solar field shall consist of protecting small perimeters ("halos") around Mojave milkweed, desert pincushion, and Rusby's desert-mallow plants as indicated in the applicant's January 2010 draft Special-Status Plant Avoidance and Protection Plan (Exhibit 81, Appendix B).
2. Protection Goals : The project owner shall implement all feasible measures to protect 75 percent of the individuals of Mojave milkweed, Rusby's desert-mallow, desert pincushion, nine-awned pappus grass, and Parish's club-cholla within the project area (as mapped in Figure 5-3 of the applicant's final botanical survey report [CH2M Hill 2008x]). Each year during construction the measurement of percent protection achieved shall be calculated based on a comparison of numbers of individuals of each of these five species present in this area identified before construction compared to numbers remaining post -construction. These pre- and post-construction plant numbers shall be based on floristic surveys conducted by a qualified botanist.
3. Identify and Establish Special-Status Plant Protection Areas: The project owner shall identify Special-Status Plant Protection Areas for exclusion from the project footprint and avoidance of project-related impacts of any kind to facilitate achieving the 75 percent

protection goal. To accurately identify the boundaries of these areas, pre-construction floristic surveys shall be conducted by a qualified botanist at the appropriate time of year for special-status plant identification, including both spring and summer/fall blooming periods. Summer/fall surveys will be conducted after rains that are likely to cause plant germination and may be suspended in years where no such rains occur. The surveys shall encompass at a minimum the three areas totaling 476 acres and labeled “Rare Plant Mitigation Area” in Project Description Figure 13 and shall extend 150 feet on both sides of the proposed gas pipeline alignment and 250 feet out from the project fenceline. The locations of the Special-Status Plant Protection Areas shall be clearly depicted on all final maps and project drawings and descriptions for exclusion of all project activities.

4. Protection of Adjacent Occurrences: The project owner shall identify special-status plants occurrences within 250 feet of the project fenceline during the pre-construction plant surveys described above. A qualified botanist shall delineate the boundaries of these special status plant occurrences prior to the initiation of ground disturbing activities. These flagged special status plant occurrences shall be designated as Environmentally Sensitive Areas on plans and specifications, and shall be protected from accidental impacts during construction (e.g. vehicle traffic, temporary placement of soils or vegetation) and from the indirect impacts of project operation (e.g., herbicide spraying, changes in upstream hydrology, etc).

5. Develop and Implement a Special-Status Plant Protection and Monitoring Plan: The project owner shall develop and implement a Special-Status Plant Protection and Monitoring Plan for special-status plants occurring within the Special-Status Plant Protection Areas and on-site areas designated for impact minimization. The goal of the Special-Status Plant Protection and Monitoring Plan shall be to maintain the special-status plant species as healthy, reproductive populations that can be sustained in perpetuity. At a minimum, the Special-Status Plant Protection and Monitoring Plan shall:
 - establish baseline conditions and numbers of the plant occurrences in all protected areas (i.e., those to be excluded from the footprint and on-site areas to be protected) and success standards for protection of special-status plant occurrences;

 - provide information about microhabitat preferences and fecundity, essential pollinators, reproductive biology, and

propagation and culture requirements for each special-status species;

- describe measures (e.g., fencing, signage) to avoid direct construction and operation impacts to special-status plants within all protected areas;
- describe measures to avoid or minimize indirect construction and operations impacts to special-status plants within protected areas (e.g., runoff from mirror-washing, use of soil stabilizers/tackifiers, alterations of hydrology from drainage diversions, erosion/sedimentation from disturbed soils upslope, herbicide drift, the spread of non-native plants, etc);
- provide a monitoring schedule and plan for assessing the numbers and condition of special-status plants; and
- identify specific triggers for remedial action (e.g., numbers of plants dropping below a threshold).

6. Develop Special-Status Plant Remedial Action Plan: The project owner shall develop a detailed Special-Status Plant Remedial Action Plan to be implemented if special-status plants within the 476 acres of protected area and on-site minimization “halos” fail to meet success standards described in the Special-Status Plant Protection and Monitoring Plan. The Plant Remedial Action Plan shall include specifications for ex-situ/offsite conservation of seed and other propagules, and the seed bank and other symbionts contained in the topsoil where these plants occur. The remedial measures described in the Plant Remedial Action Plan shall not substitute for plant protection or other mitigation measures. The Special-Status Plant Remedial Action Plan shall include, at a minimum:

- guidelines for pre-construction seed collection (and/or other propagules) for each species;
- specifications for collecting, storing, and preserving the upper layer of soil containing seed and important soil organisms;
- detailed replacement planting program with biologically meaningful quantitative and qualitative success criteria (see Pavlik 1996), monitoring specifications, and triggers for remedial action; and
- ecological specifications for suitable planting sites.

7. Seed Collection: Implementation of the Special-Status Plant Remedial Action Plan would require a source of local source of seeds/propagules. In addition, seed collection would serve to

preserve germplasm in the event that all mitigation fails. The project owner shall develop and implement a Seed Collection Plan to collect and store seed for Mojave milkweed, Rusby's desert-mallow, desert pincushion, nine-awned pappus grass, and Parish's club-cholla. The source of these seeds shall be from plants proposed for removal within the project footprint. The project owner shall engage the services of a qualified contractor approved by the CPM to undertake seed collection and storage.

8. Gas Pipeline Revegetation and Monitoring: In the natural gas pipeline construction corridor where disturbed soils will be revegetated, the topsoil excavated shall be segregated, kept intact, and protected, under conditions shown to sustain seed bank viability. At a minimum, the top 2 cm of the soil shall be separately stored and preserved. Topsoil salvage, storing, and replacement shall be replaced in its original vertical orientation following pipeline installation ensuring the integrity of the top 2 cm in particular. The project owner shall prepare a Gas Pipeline Revegetation and Monitoring Plan targeted at re-establishment of Rusby's desertmallow, desert pincushion, Mojave milkweed, and potentially other special-status plant species. The Gas Pipeline Revegetation and Monitoring Plan shall identify success criteria for re-establishment and shall continue for a period of no less than 10 years until the defined success criteria are achieved. The Gas Pipeline Revegetation and Monitoring Plan shall include measures for seeding or other remedial actions. If no individuals of Rusby's desert-mallow, desert pincushion, or Mojave milkweed, are located during the first year of monitoring, the project owner shall conduct supplemental seeding or other remedial measures in the area disturbed by natural gas pipeline installation.
9. Surveys on Acquired and Public Lands: The project owner shall conduct floristic surveys for Rusby's desert-mallow and Mojave milkweed on all lands that will be acquired as part of the desert tortoise compensatory mitigation requirements (see Condition of Certification BIO-17). The goal of the surveys shall be to identify at least the same number of occurrences on off-site compensation or public lands as the number of occurrences in the project area excluding the occurrences in the Special-Status Plant Protection Areas in Project Description Figure 13. If this goal is not met by surveys on proposed acquisition lands, additional surveys shall be conducted within suitable habitat on public lands. To be counted toward fulfillment of the goal the occurrences must reflect new data not previously documented in other survey efforts. The survey requirements shall include the following:

- All surveys shall be conducted by a qualified botanist in accordance with BLM, CDFG, and CNPS plant survey guidelines;
 - Surveys shall occur the first spring after construction begins and continue each year for a maximum of ten years until the same number of Mohave milkweed and Rusby's desert-mallow occurrences are identified on acquisition lands and/or public lands as located outside Special-Status Plant Protection Areas;
 - For each year surveys are conducted yearly survey results shall be provided to the CPM, BLM's Authorized Officer and CDFG, and shall include CNDDDB field survey forms for all special-status plant species encountered during the surveys; and
 - All field survey forms shall be submitted to the CNDDDB at the time of submittal to the CPM, BLM and CDFG.
 - The project owner's qualified botanist shall submit a completion report documenting fulfillment of the target goals and which describe the number of new, previously undiscovered occurrences identified and mapped. Locations shall be reported with GPS coordinates compatible with inclusion in a GIS database.
10. Security for Implementation of Plans: The project owner shall provide security adequate to fund implementation of the Special-Status Plant Protection and Monitoring Plan, the Special-Status Plant Remedial Action Plan for the life of the project, as well as the Seed Collection Plan, and the Gas Pipeline Revegetation Monitoring Plan.
11. Acquire Off- Site Occurrence of Mojave Milkweed or Adjacent Land: The project owner shall acquire, in fee or in easement, a parcel or parcels of land that includes at least 30 acres supporting a viable occurrence of Mojave milkweed (or suitable habitat adjacent to a known occurrence). The terms and conditions of this acquisition or easement shall be as described in Condition of Certification BIO-17 with the additional criteria that the Mojave milkweed mitigation lands: 1) provide habitat for the special-status plant species that is of similar or better quality (e.g., in terms of native plant composition) than that impacted; 2) contain OR about a known occurrence of Mojave milkweed, ideally with populations that are stable, recovering, or likely to recover, that shares the same watershed as the land; and 3) be adequately sized and buffered to support self-sustaining special-status plant populations. These mitigation lands may be included with the desert tortoise mitigation lands ONLY if the above criteria are met. Estimated security for acquisition of compensation lands for Mojave milkweed is

\$107,265. If the project owner elects to construct the project in two phases in accordance with Condition of Certification BIO-22, the project owner shall provide Security in the amount of \$47,755 prior to initiating any ground-disturbing activities associated with Phase 1, and shall provide Security in the amount of \$77,510 prior to initiating any ground-disturbing activities associated with Phase 2. If sufficient new Mojave milkweed occurrences are discovered on desert tortoise compensation lands (not public lands) in accordance with item 9 above prior to acquiring this land, the associated security shall be refunded to the project owner.

Verification: No less than 30 days following the publication of the Energy Commission Decision the project owner shall submit final maps and design drawings depicting the location of Special-Status Plant Protection Areas within and adjacent to the project site, and shall identify the species and numbers of plants within each of the Special-Status Plant Protection Areas.

No less than 30 days following the publication of the Energy Commission Decision the project owner shall submit draft versions of the Special-Status Plant Protection and Monitoring Plan, the Special-Status Plant Remedial Action Plan, the Seed Collection Plan, and the Gas Pipeline Revegetation Monitoring Plan for review by the CPM, BLM's Authorized Agent, and CDFG. The project owner shall also provide a cost estimate for implementation of these plans which is subject to approval by the CPM, BLM's authorized agent, and the CDFG. The final plans shall be submitted for approval by the CPM, in consultation with BLM's Authorized Agent, CDFG, and CNPS within 90 days of the publication of the Commission Decision. The final plans shall be incorporated into the BRMIMP. At this time, the project owner shall also provide security sufficient to fund the implementation of the plans.

Within 30 days of the start of construction, the project owner shall submit copies of the contract with the CPM-approved seed contractor and the check for seed collection and curation fees to the CPM.

The project owner shall identify special-status plants occurrences within 250 feet of the project fence line during the pre-construction plant surveys described above. A qualified botanist shall delineate the boundaries of these special status plant occurrences at least 30 days prior to the initiation of ground disturbing activities.

On January 31st of each year following construction the project owner's qualified botanist shall submit a report, including CNDDDB field survey forms, describing the results of off-site plant surveys for Mojave milkweed and Rusby's desert-mallow to the BLM's authorized officer, the CPM, CDFG, and CNDDDB. Submittal of survey reports shall continue for a maximum of 10 years until the same number of occurrences in the project area excluding the occurrences in the

Special-Status Plant Protection Areas. The project owner's qualified botanist shall submit a completion report documenting fulfillment of the target goals and which describe the number of new, previously undiscovered occurrences identified and mapped using GIS techniques for each species. Mapping results shall include GPS coordinates of the plants found.

The Designated Biologist shall maintain written and photographic records of the tasks described above, and summaries of these records shall be submitted along with the Monthly Compliance Reports to the CPM, BLM Authorized Agent, and CDFG. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report for a period not less than 10 years for the Gas Pipeline Revegetation Plan, and for the life of the project for the Special-Status Plant Protection and Monitoring Plan, and the Special-Status Plant Remedial Action Plan, including funding for the seed storage.

No less than 90 days prior to acquisition of the parcel(s) containing or adjacent to a known Mojave milkweed occurrence, 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.

Draft agreements to delegate land 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 land acquisition. Such agreements shall be mutually approved and executed at least 60 days prior to start of any project-related ground disturbance activities. The project owner shall provide written verification to the CPM that the compensation lands have been acquired and recorded in favor of the approved recipients(s). Alternatively, before beginning project ground-disturbing activities, the project owner shall provide Security in accordance with this condition. Within 90 days after the 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.

Nelson's Bighorn Sheep Mitigation

BIO-19 To compensate for project impacts to Nelson's bighorn sheep the project owner shall finance, construct and manage an artificial water source in the eastern part of the Clark Mountain range or in the State Line Hills outside of designated Wilderness. The project owner shall monitor and control noxious and invasive weeds within 100 feet of the artificial water source. Control of weeds shall be coordinated with the CPM and BLM staff and shall consist of removal by mechanical methods, rather than herbicides. To minimize potential impacts to Nelson bighorn sheep, the project owner shall not use barbed wire fence on the northern perimeter of the Ivanpah 3 site, unless the project

Appendix B
Representative Photographs from 2015
Post-Construction Monitoring



PHOTOGRAPH B-1
Mojave Milkweed Special-status Plant Protection Area (ASNY-0046-14-002) in Unit 1. Plant is located to the left of the orange stake.



PHOTOGRAPH B-2
Flowering Mojave milkweed (ASNY-0052-10-001) in Unit 1.



PHOTOGRAPH B-3
Mojave Milkweed SSPPA (ASNY-0802-10-001) in Unit 2. Plant is located at the upper left corner of the photo.



PHOTOGRAPH B-4
Mojave Milkweed SSPPA (ASNY-0802-10-001) desert wash habitat in Unit 2. Plant is located in the middle of the photo, near the orange stake.



PHOTOGRAPH B-5
Growing sprout of Mojave milkweed
(ASNY-0012-10-001) in Unit 3.



PHOTOGRAPH B-7
Mojave milkweed (ASNY-0021-15-004) in Unit 3.



PHOTOGRAPH B-6
Desert wash habitat for Mojave milkweed SSPPA
(ASNY-0012-10-001) in Unit 3. The plant is located in
the center of the photo.



PHOTOGRAPH B-8
Desert wash habitat for Mojave milkweed SSPPA
(ASNY-0021-15-004) in Unit 3. Plant is located next to
the orange stake.



PHOTOGRAPH B-9
Mojave milkweed (ASNY-0022-10-001) in Unit 3.



PHOTOGRAPH B-10
Dry wash habitat for Mojave milkweed (ASNY-0022-10-001) in Unit 3. Plant is to the right of the orange stake.



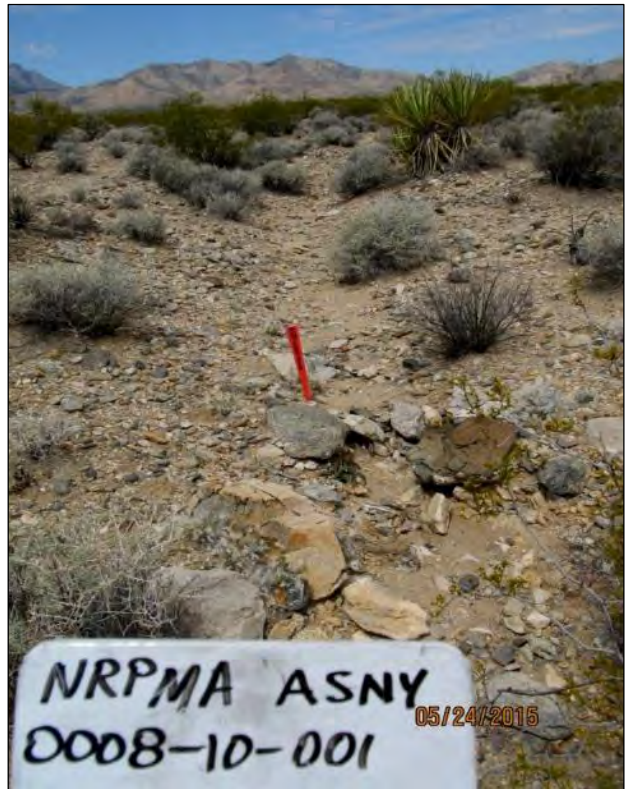
PHOTOGRAPH B-11
Mojave milkweed (ASNY-0043-15-017) in the CLA-1 Mitigation Area. This plant was found in 2015.



PHOTOGRAPH B-12
Mojave milkweed (ASNY-0043-15-017) habitat in the CLA-1 Mitigation Area.



PHOTOGRAPH B-13
Mojave milkweed (ASNY-0008-10-001) in the NRPMA Mitigation Area.



PHOTOGRAPH B-14
Dry wash habitat for Mojave milkweed (ASNY-0008-10-001) in the NRPMA Mitigation Area.



PHOTOGRAPH B-15
Dry wash habitat for Mojave milkweed (ASNY-A6-14-001) in the NRPMA Mitigation Area. The dried leaves of Mojave milkweed are located to the right of the orange stake.



PHOTOGRAPH B-16
Mojave milkweed (ASNY-0060-10-001) and associated dry wash habitat in the 250-foot buffer surrounding the project site. The buffer locality is signed as an Environmentally Sensitive Area (ESA).



PHOTOGRAPH B-17
Mojave milkweed (ASNY-0751-10-001) and rocky dry wash habitat in the 250-foot buffer. The buffer locality is signed as an Environmentally Sensitive Area (ESA). The dried leaves of the Mojave milkweed plant is located between the T-post and the white stake.



PHOTOGRAPH B-18
Mojave milkweed (ASNY-0803-10-001) in the 250-foot buffer. The buffer locality is signed as an Environmentally Sensitive Area (ESA).



PHOTOGRAPH B-19
Flowering desert pincushion (COCH-0500-10-001) in Unit 1.



PHOTOGRAPH B-20
Close view of flowering desert pincushion (COCH-0500-10-001) in Unit 1.



PHOTOGRAPH B-21
Desert pincushion (COCH-0500-10-001) dry wash habitat in Unit 1.



PHOTOGRAPH B-22
Desert pincushion (COCH-0233-10-001) in Unit 1. Plant has been heavily grazed.



PHOTOGRAPH B-23
Desert pincushion (COCH-0189-10-001) in Unit 2.



PHOTOGRAPH B-24
Desert pincushion (COCH-0189-10-001) in Unit 2.



PHOTOGRAPH B-25
Desert pincushion (COCH-0191-10-001) in Unit 2.



PHOTOGRAPH B-26
Desert pincushion plants (COCH-0191-10-001 and 002) and associated habitat in Unit 2. Plants are located next to orange stake.



PHOTOGRAPH B-27
Desert pincushion COCH-0052-10-001 and associated habitat in Unit 3. The plant is located next to the orange stake, near the right center of the photo.



PHOTOGRAPH B-28
Desert pincushion COCH-0052-10-001 in Unit 3.



PHOTOGRAPH B-29
A polycephalous desert pincushion (COCH-0187-10-002) with nine heads in Unit 3.



PHOTOGRAPH B-30
Desert pincushion COCH-0182-10-001 and associated habitat in Unit 3. Plant is located near the orange stake.



PHOTOGRAPH B-31
Desert pincushion (COCH-0188-10-001) SSPPA in Unit 3. Plant is located near the orange stake. The yellow rope demarks the edge of the protective fence.



PHOTOGRAPH B-32
Desert pincushion (COCH-0197-10-001) SSPPA in Unit 3. The desert pincushion plant is located near the orange stake.



PHOTOGRAPH B-33
A polycephalous desert pincushion (COCH-0210-10-001) with four heads in the CLA-1 Mitigation Area.



PHOTOGRAPH B-34
Desert pincushion (COCH-0210-10-001) in the CLA-1 Mitigation Area. The desert pincushion is located in between the yucca and the yellow stake.



PHOTOGRAPH B-35
Desert pincushion (COCH-0008-10-001) in the NRPMA Mitigation Area.



PHOTOGRAPH B-36
Desert pincushion (COCH-0008-10-001) in the NRPMA Mitigation Area.



PHOTOGRAPH B-37
Desert pincushion (COCH-0024-10-001) in the NRPMA Mitigation Area.



PHOTOGRAPH B-38
Desert pincushion (COCH-0024-10-001) and associated habitat in the NRPMA Mitigation Area.



PHOTOGRAPH B-39
Flowering desert pincushion (COCH-0153-10-001) in the NRPMA Mitigation Area.



PHOTOGRAPH B-40
Desert pincushion (COCH-0153-10-001) in the NRPMA Mitigation Area. Desert pincushion is to the right of the orange stake at the base of the yucca.



PHOTOGRAPH B-41
Desert pincushion (COCH-0815-15-001) in the NRPMA Mitigation Area. This desert pincushion was first recorded in 2015.



PHOTOGRAPH B-42
Desert pincushion (COCH-0815-15-001) in the NRPMA Mitigation Area. Desert pincushion is to the left of the orange stake at the base of the yucca.



PHOTOGRAPH B-43
Desert pincushion (COCH-0805-10-001) in the 250-foot buffer surrounding the project site.



PHOTOGRAPH B-44
Desert pincushion (COCH-0805-10-001) in the 250-foot buffer surrounding the project site. Desert pincushion is to the right of the ESA T-post in the pencil cholla.



PHOTOGRAPH B-45
Desert pincushion (COCH-2071-13-001) in the 250-foot buffer surrounding the project site.



PHOTOGRAPH B-46
Desert pincushion (COCH-2071-13-001) in the 250-foot buffer surrounding the project site. The desert pincushion is well hidden in the rocks between the base of the T-post and the orange stake, just above the right corner of the white monitoring clipboard.



PHOTOGRAPH 47
Rusby's desert mallow SSPPA (SPRUER-0006-13-001) in Unit 3.



PHOTOGRAPH 48
Rusby's desert mallow SSPPA (SPRUER-0006-13-001) in Unit 3.



PHOTOGRAPH 49
Rusby's desert mallow SSPPA (SPRUER-0006-13-001) in Unit 3.



PHOTOGRAPH 50
Rusby's desert mallow SSPPA (SPRUER-0010-10-001) in Unit 1.



PHOTOGRAPH 51
Scattered clumps of Parish's club-cholla (GRPA-0015-10-001)
in the NRPMA Mitigation Area.



PHOTOGRAPH 52
Close view of Parish's club-cholla (GRPA-0015-10-001) fruits
in the NRPMA Mitigation Area.



PHOTOGRAPH 53
Parish's club-cholla (GRPA-0127-10-002) in the CLA-1
Mitigation Area.

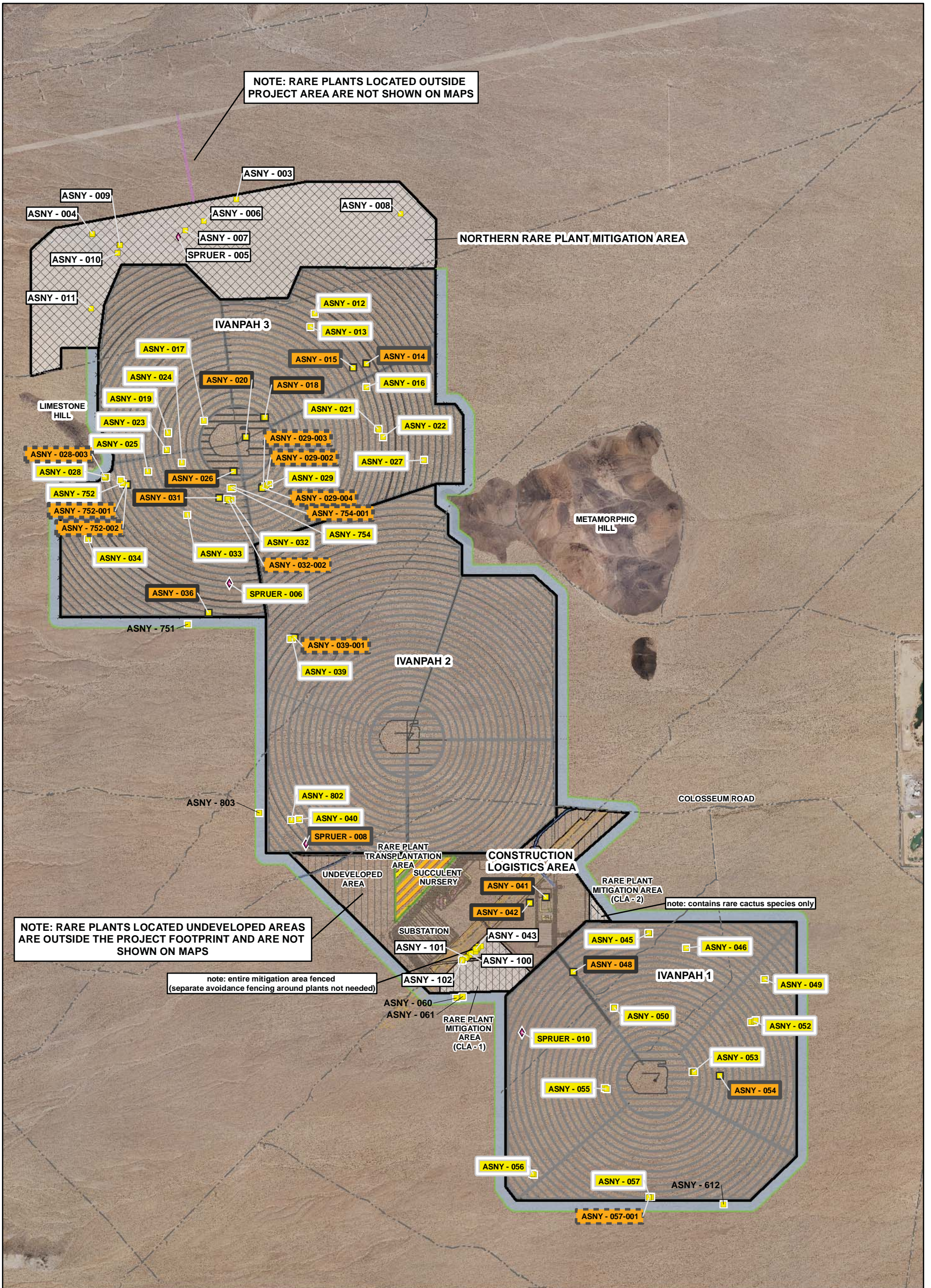


PHOTOGRAPH 54
New vegetative growth and buds of Parish's club-cholla
(GRPA-0127-10-002) in the CLA-1 Mitigation Area.



PHOTOGRAPH 55
Parish's club-cholla (GRPA-0753-10-001) in the 250-foot site
buffer.

Appendix C
Revised Special-status Plant Protection Plan
Figures 5-1 through 5-3 (from 2010)

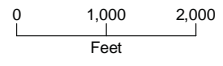


LEGEND

■ Mojave Milkweed <i>Asclepias nyctaginifolia</i> (ASNY)	--- Trails and Roads
◆ Rusby's desert mallow <i>Sphaeralcea rusbyi</i> var. <i>eremicola</i> (SPRUER)	■ 250-ft Site Buffer
■ Rare Plant Locality ID: ASNY-006	■ 50-foot Corridor of Gas Line
■ ASNY-018	■ Project Site
■ ASNY-057-001	■ Mitigation Area
■ ASNY-003	■ Rare Plant Transplantation Area
■ ASNY-060	■ Succulent Nursery
	■ Undeveloped Area

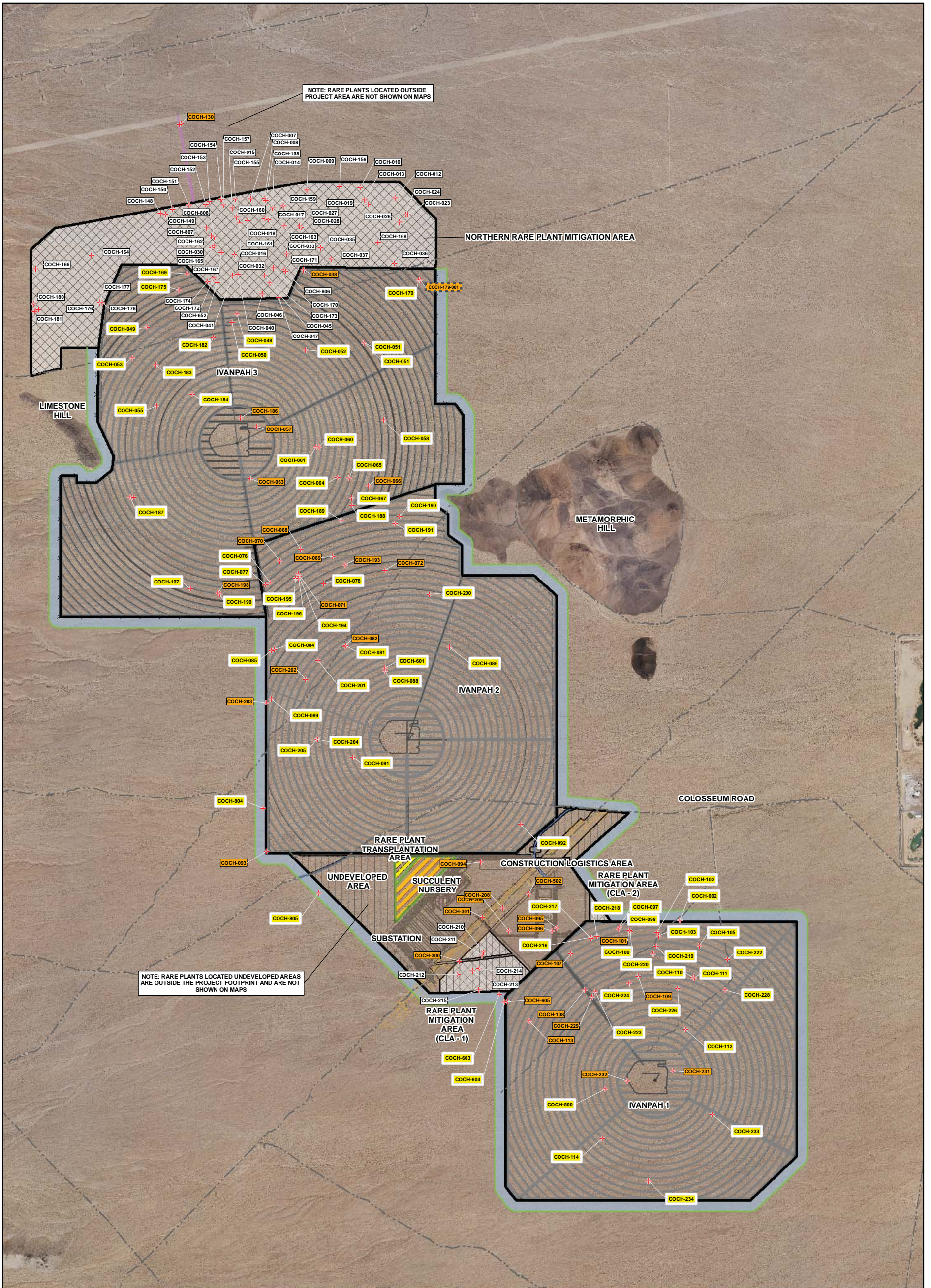
Rare Plant Treatment:
 ■ Special-Status Plant Protection Area (SSPPA)
 ■ Salvaged
 ■ Plant salvaged from a fenced (avoided) locality
 ■ Mitigation Area (Not fenced or salvaged)
 ■ Not Fenced or Salvaged (Located outside of Project Impact Area)

DRAFT



- Notes:
 1) Rare plant avoidance fencing, salvage and mitigation locations based on project design dated July 7, 2010.
 2) Rare cactus localities are not shown on this map.
 3) Rare plant localities within the 250-foot buffer are Environmental Sensitive Areas (ESAs).

Figure 5-1
The Location of Mojave Milkweed and Rusby's Desert Mallow Localities to be Fenced, Salvaged or Included in Mitigation Area
 Ivanpah Solar Electric Generating System
CH2MHILL



NOTE: RARE PLANTS LOCATED OUTSIDE PROJECT AREA ARE NOT SHOWN ON MAPS

NOTE: RARE PLANTS LOCATED UNDEVELOPED AREAS ARE OUTSIDE THE PROJECT FOOTPRINT AND ARE NOT SHOWN ON MAPS

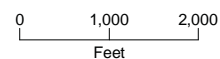
LEGEND

+ Desert pincushion
Coryphantha chlorantha (COCH)

Rare Plant Locality ID:	Rare Plant Treatment:
COCH-112	Special-Status Plant Protection Area (SSPPA)
COCH-186	Salvaged
COCH-179-001	Plant salvaged from a fenced (avoided) locality
COCH-161	Mitigation Area (Not fenced or salvaged)
COCH-603	Not Fenced or Salvaged (Located outside of Project Impact Area)

Trails and Roads
250-ft Site Buffer
50-foot Corridor of Gas Line
Project Site
Mitigation Area
Rare Plant Transplantation Area
Succulent Nursery
Undeveloped Area

DRAFT



Notes:
1) Rare plant avoidance fencing, salvage and mitigation locations based on project design dated July 7, 2010.
2) Rare plant localities within the 250-foot buffer are Environmental Sensitive Areas (ESAs).

Figure 5-2
Location of Desert Pincushion Localities to be Fenced, Salvaged or Included in Mitigation Area
Ivanpah Solar Electric Generating System

Appendix D
Monitoring Datasheets

Asclepias nyctaginifolia

General Location:

Date:

Name(s) of Data Collector:

Plant Unique ID # Identification Number	New Plant Y/N	Health Assessment						Reproduction					Other Photo Y/N	Maintenance			Comments / Photo Log	
		Plant Absent Y/N/R	Seedling/ Sprout Count	Vigor Score 1-5	Phenol V/B/F FR/OF W/D	Grazing Damage 0-3	DigDown Depress None or #AL/#AN	# Fwr Clust.	# Fruits	Seeds N/I/F/O/G	Good Seed Source Y/N/F	Pollin- ators Observ. Y/N		ID Stake N/G I/R	ID Tag N/G I/R	Weed spp. Y/N		

NOTES:

Coryphantha chlorantha

General Location:

Date:

Name(s) of Data Collector:

Plant Unique ID # Identification Number	Health Assessment									Reproduction			Other	Maintenance			Comments / Photo Log
	New Plant Y/N	Plant Absent Y/N	Plant Dead Y/N	Plant Mortal. DP/DD	Vigor Score 1-5	Phenol V/B/FL FR/PF	Polyceph. # Heads (N=)	Grazing Damage 0-3	# Flws	# Fruits	Pollinators Observ. Y/N	Photo Y/N	ID Stake NGIR	ID Tag NGIR	Weed spp. Y/N		

NOTES:

Grusonia parishii

General Location:

Date:

Name(s) of Data Collector:

Plant Unique ID #		Health Assessment							Reproduction				Other	Maintenance			Comments / Photo Log
Identification Number	New Plant Y/N	Plant Absent Y/N	Plant Dead Y/N	Vigor Score 1-5	New Growth Y/N	% Dead 0-3	Phenol V/B FL/FR	# Clumps	# Flws	# Frts	# LYSF Y/N	Pollinators Observed Y/N	Photo Y/N	ID Stake N/G I/R	ID Tag N/G I/R	Weed spp. Y/N	

NOTES:

Appendix L

Condition of Certification BIO-18

**Special Status Plants Natural Gas
Line Monitoring Report**

Year-2 (2015) Special-status Plants Post-Construction Natural Gas Line Monitoring Report

Ivanpah Solar Electric Generating System (ISEGS)

Prepared for
Solar Partners II, LLC; Solar Partners I, LLC;
and Solar Partners VIII, LLC

January 2016

CH2MHILL®

2485 Natomas Park Drive
Suite 600
Sacramento, California 95833

Contents

Section	Page
Acronyms and Abbreviations	iii
1 Introduction	1-1
1.1 Project Description	1-1
1.2 Report Objective	1-1
1.3 Special-status Plant Compliance Documents.....	1-2
1.4 Document Contents.....	1-2
2 BIO-18 Compliance Measures	2-1
2.1 Summary	2-1
2.2 Compliance with BIO-18, Measure 8	2-1
3 Special-status Plant Descriptions	3-1
3.1 Mojave Milkweed (<i>Asclepias nyctaginifolia</i>)	3-1
3.2 Desert Pincushion (<i>Coryphantha chlorantha</i>)	3-1
3.3 Parish’s Club-cholla (<i>Grusonia parishii</i>)	3-1
3.4 Nine-awned Pappus Grass (<i>Enneapogon desvauxii</i>).....	3-1
3.5 Rusby’s Desert Mallow (<i>Sphaeralcea rusbyi</i> var. <i>eremicola</i>)	3-2
4 Restoration and Monitoring Methods	4-1
4.1 Special-status Plant Revegetation Areas	4-1
4.1.1 Personnel and Dates of Field Work	4-1
4.1.2 Soil Preparation	4-1
4.1.3 Hand Broadcast Seeding.....	4-1
4.1.4 Planting	4-2
4.1.5 Data Collection.....	4-2
4.2 Monitoring Methods.....	4-2
4.2.1 Special-status Plant Revegetation Success Criterion.....	4-3
4.2.2 Monitoring Schedule	4-5
5 Monitoring Results	5-1
5.1 Special-status Plant Revegetation	5-1
5.1.1 Number of Special-status Plants Transplanted.....	5-1
5.1.2 Number of Seed Beds Established	5-1
5.1.3 Year-2 (2015) Post-Construction Monitoring	5-1
5.2 Additional Special-status Plant Compliance Monitoring	5-3
5.2.1 Year-3 (2016) Post-construction Monitoring.....	5-3
6 References	6-1
Appendixes	
A Condition of Certification BIO-18	
B 2015 Representative Photographs	
C Monitoring Datasheets	
D Density Calculations	

Tables

- 4-1 Target Number of Special-Status Plants to Reestablish Along the Gas Line Corridor
- 5-1 Number of Special-status Plant Seeding and Planting Locations in the Gas Line Corridor Compared to Target Goals

Figures

- 1-1 Vicinity Map
- 1-2 Site Layout
- 4-1 Location of Gas Line Special-status Plant Revegetation
- 5-1 Location of Northern Gas Line Special Status Plant Seeding and Transplanting

Acronyms and Abbreviations

BIO-18	Condition of Certification Biology (BIO)-18
BLM	Bureau of Land Management
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CLA	Construction Logistics Area
COC	Condition of Certification
CRPR	California Rare Plant Rank
ESA	Environmentally Sensitive Area
GANDA	Garcia and Associates
gen-tie	generation tie
GIS	geographic information system
GPS	global positioning system
ISEGS	Ivanpah Solar Electric Generating System
NGL	Natural Gas Line
NRPMA	Northern Rare Plant Mitigation Area
Remedial Action Plan	<i>Ivanpah SEGS Special-status Plant Remedial Action Plan</i>
Revegetation Plan	<i>Closure, Revegetation, and Rehabilitation Plan</i> COCs BIO-14, BIO-18 & COMP-11. Revision 4. Includes the Gas Pipeline Revegetation and Monitoring Plan (BIO-18).
Revised Protection Plan	<i>Ivanpah SEGS Special-status Plant Protection and Monitoring Plan, Revision 1</i>
RPTA	Rare Plant Transplantation Area
SCE	Southern California Edison
SPT	solar power tower
SSPPA	Special-status Plant Protection Area

Introduction

1.1 Project Description

Solar Partners I, LLC; Solar Partners II, LLC; and Solar Partners VIII, LLC (Solar Partners), are the owners of the Ivanpah Solar Electric Generating System (ISEGS), a nominal 370 megawatt (MW) solar energy project in southern California's Mojave Desert, near the Nevada border. The project was developed by BrightSource Energy, Inc. and is operated for Solar Partners by NRG Energy Services, LLC. The project is located on a 3,471-acre site west of the Ivanpah Dry Lake, on land managed by the Bureau of Land Management (BLM) (Figure 1-1).

Ivanpah 1 (the southern unit) covers approximately 913.5 acres (1.4 square miles); Ivanpah 2 (the middle unit) covers approximately 1,077 acres (1.7 square miles); and Ivanpah 3 (the northern unit) is larger and will cover approximately 1,235 acres (1.9 square miles). The remaining disturbance areas include common access roads, gas lines, generation tie-lines, and construction and operations facilities. All three phases share an administration building, an operation and maintenance building, a substation located between Ivanpah 1 and 2, and paved roads to access each site. The project ties into the existing Kern River Gas Transmission Line about 0.5 mile north of the Northern Rare Plant Mitigation Area (NRPMA) and into the Southern California Edison 230/115-kilovolt (kV) line that crosses between the Ivanpah 1 and 2 sites (Figure 1-2).

Each unit consists of solar arrays of heliostats (or mirrors) that focus solar energy on central solar power tower receivers near the center of each of the heliostat arrays. Ivanpah 1 (nominal 120 MW) has a heliostat array consisting of approximately 53,500 heliostats. Ivanpah 2 and 3 (nominal 125 MW each) have heliostat arrays consisting of approximately 60,000 heliostats. The heliostat array of each unit is arranged around a single centralized solar power tower (SPT) that is 140 meters (459 feet) in height, including a boiler/superheater panel with an upper steam drum and protective ceramic insulation panels (20 meters/65.5 feet) on top. Each solar power plant has a power block in the approximate center of the heliostat array. The power block includes a solar power tower (SPT), a receiver boiler, a steam turbine generator (STG) set, an air-cooled condenser, and other auxiliary systems. The solar field and power generation equipment are started each morning after sunrise and shut down in the evening when insolation drops below the level required to keep the turbine online.

1.2 Report Objective

The objective of this report is to present the results of the Year-2 (2015) post-construction special-status plant revegetation monitoring of the natural gas line corridor. This report complies with the annual reporting requirement of BIO-18 Measure 8, Gas Pipeline Revegetation and Monitoring. This report also complies with measures included in Section 8 of the ISEGS Special-status Plant Protection and Monitoring Plan, Revision 1 (Revised Protection Plan) (Solar Partners, 2010a), and sections that pertain to special-status plants in the *Closure, Revegetation, and Rehabilitation Plan for the Ivanpah Solar Electric Generating System*. COCs BIO-14, BIO-18 & COMP-11. Revision 4 (CH2M HILL, 2010).

As outlined in the California Energy Commission (CEC) Ivanpah SEGS Commission Decision (CEC, 2010), project construction resulted in impacts to five special-status plants.

These species are:

- Rusby's desert mallow (*Sphaeralcea rusbyi* var. *eremicola*)
- Mojave milkweed (*Asclepias nyctaginifolia*)
- Desert pincushion (*Coryphantha chlorantha*)

- Nine-awned pappus grass (*Enneapogon desvauxii*)
- Parish's club-cholla (*Grusonia [Opuntia] parishii*)

The CEC included special-status plant avoidance, minimization, and protection goals in Condition of Certification BIO-18 (CEC, 2010). The text of BIO-18 is included in Appendix A of this report. The objectives of BIO-18 are to avoid and minimize disturbance to all special-status plants onsite to the extent feasible. BIO-18, Measure 8, Gas Pipeline Corridor Revegetation and Monitoring, includes a requirement to reestablish special-status plants within the gas line corridor.

1.3 Special-status Plant Compliance Documents

Plans prepared for ISEGS to comply with BIO-18 include the following:

- *Ivanpah SEGS Special-status Plant Protection and Monitoring Plan*, Revision 1 (Solar Partners, 2010a)
- *Ivanpah SEGS Special-status Plant Remedial Action Plan* (Solar Partners, 2010b)
- *Closure, Revegetation, and Rehabilitation Plan for the Ivanpah Solar Electric Generating System*. COCs BIO-14, BIO-18 & COMP-11. Revision 4. Includes the Gas Pipeline Revegetation and Monitoring Plan (BIO-18) (CH2M HILL, 2010)
- Seed Collection and Revegetation Proposed Plan, Revision 1 (Solar Partners, 2010c)

Special-status plant protection measures, plant salvage, and transplantation procedures are described in the Revised Protection Plan and the Closure, Revegetation, and Rehabilitation Plan. The Revised Revegetation Plan includes the Gas Pipeline Revegetation and Monitoring Plan. The Seed Collection Plan describes seed collection procedures for special-status plants and common species. The Remedial Action Plan describes the special-status plant seed (and other propagules [that is, live plants]) that have been collected and transplanted in the onsite nursery for use as a source of plant material should protection measures fail and special-status plants need to be re-established. The implementation of the above-mentioned plans is described in detail in the BIO-18 Year 1 (2014) post-construction special-status plant monitoring and as-built reports (CH2M HILL, 2015a; 2015b). Results of the first year of natural gas line monitoring are included in the Year-1 (2014) Post-construction Natural Gas Line Monitoring Report (CH2M HILL, 2015c).

1.4 Document Contents

Section 2 includes a summary of the compliance measures required, undertaken, and in progress to comply with BIO-18 Measure 8. **Section 3** contains a summary description of the special-status plants that are the subject of this plan. A description of the restoration process and monitoring methods are described in **Section 4**. Monitoring results are provided in **Section 5**. References used in developing this report are included in **Section 6**. The BIO-18 Condition of Certification (COC) is included as **Appendix A**. Photographs from the 2014 compliance monitoring are included in **Appendix B**. Datasheets used to collect field data are provided in **Appendix C**. Plant density calculations used to develop the revegetation success criterion and target numbers of plants are provided in **Appendix D**.



LEGEND
 PROJECT SITE

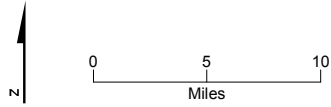
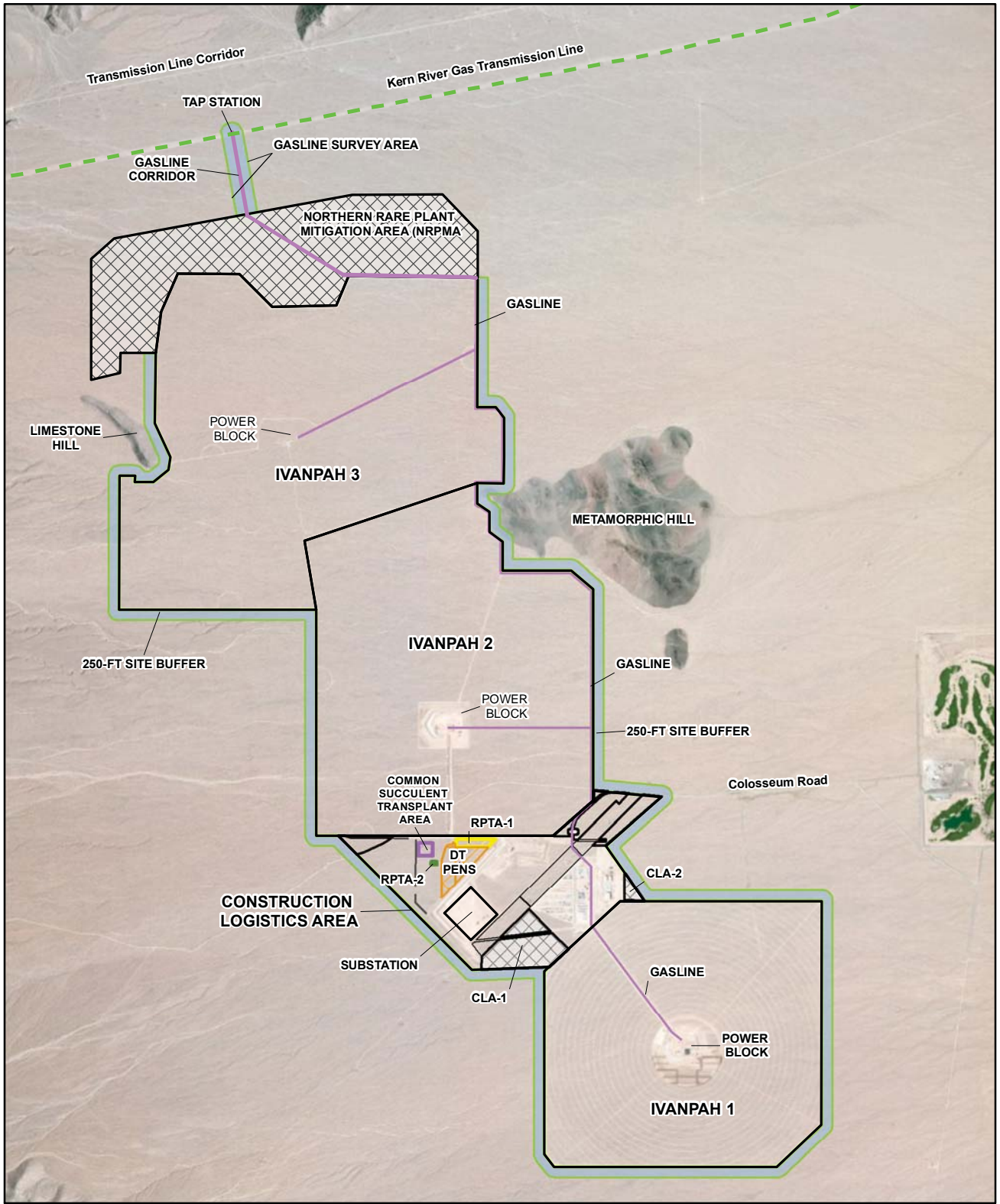







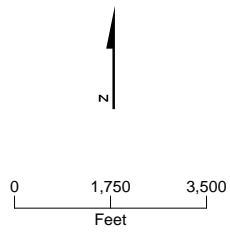


FIGURE 1-1
VICINITY MAP
 IVANPAH SOLAR ELECTRIC GENERATING SYSTEM



LEGEND

-  Gasline (50-foot Corridor)
-  Common Succulent Transplant Area
-  Rare Plant Transplantation Area (RPTA-1)
-  Rare Plant Transplantation Area (RPTA-2)
-  Desert Tortoise Pen Area
-  250-ft Site Buffer
-  Project Site



**Figure 1-2
Site Layout**

Ivanpah Solar Electric Generating System

BIO-18 Compliance Measures

This section includes a summary of the compliance measures required or undertaken or that are in progress to comply with BIO-18 Measure 8, Gas Pipeline Revegetation and Monitoring. The text of BIO-18 is included in Appendix A of this report.

2.1 Summary

The California Energy Commission (CEC) included special-status plant avoidance, minimization, and protection goals in COC BIO-18 (Measures 1 through 11) (CEC, 2010). The text of BIO-18 is included in Appendix A of this report. Measure 8 of BIO-18, Gas Pipeline Revegetation and Monitoring, includes the requirements regarding special-status plant reestablishment along the natural gas line corridor. The steps and procedures completed or planned to reestablish special-status plants along the gas line corridor include the following:

- Development of a Seed Collection Plan for special-status plants. Appendix B of the Remedial Action Plan describes seed collection procedures for common species as well as special-status plants.
- Preparation of the *Closure, Revegetation, and Rehabilitation Plan for the Ivanpah Solar Electric Generating System* (Revision 4) (CH2M HILL, 2010). This plan includes the Gas Pipeline Revegetation and Monitoring Plan required by BIO-18.
- Preparation of the *Ivanpah SEGS Special-status Plant Monitoring and Protection Plan* (Revision 1) (Revised Protection Plan) (Solar Partners, 2010a).
- Preparation of the *Ivanpah SEGS Special-status Plant Remedial Action Plan* (Remedial Action Plan) (Solar Partners, 2010b).
- Implementation of special-status plant protection goals of 75 percent as described in Section 5.2.1.4 of the Revised Protection Plan.
- Salvage and relocation of the special-status plant localities listed in Table 5-1 in the Revised Protection Plan.
- Maintenance, including irrigation, of salvaged special-status plants within the Rare Plant Transplantation Area (RPTA-1).

2.2 Compliance with BIO-18, Measure 8

This report provides results of 2015 (Year-2) monitoring, the second year of post-construction monitoring as described in the Revised Revegetation Plan (CH2M HILL, 2010) and Revised Protection Plan (Solar Partners, 2010a). The project complies with Measure 8 of BIO-18, Gas Pipeline Revegetation and Monitoring; however, Measure 8 is not complete because it has a long-term monitoring component. Longer-term elements of BIO-18, such as evaluating the success of special-status plant reestablishment along the gas line is to be performed and evaluated over a 10-year post-construction timeframe, as described in the Revised Revegetation Plan (CH2M HILL, 2010) and Revised Protection Plan (Solar Partners, 2010a). Section 7.9 of the Revised Revegetation Plan contains information on success criteria that will be used to gauge the success of the site revegetation effort. Monitoring methods and elements of the success criteria in Section 7.9 of the Revised Revegetation Plan that will also be applied to the special-status plant revegetation effort are described in Section 4. Monitoring results are described in Section 5. Results of the first year of natural gas line monitoring are included in the Year-1 (2014) Post-construction Natural Gas Line Monitoring Report (CH2M HILL, 2015c).

Special-status Plant Descriptions

This section provides a brief description of the five special-status plants included in BIO-18 and the Revised Protection Plan (Solar Partners, 2010a). More detailed information on the basic distributional and ecological information known for each of these special-status plants can be found in the Special-status Plant Survey Report (GANDA, 2008), the Revised Protection Plan (Solar Partners, 2010a), and the Remedial Action Plan (Solar Partners, 2010b). Photographs of the special-status plant revegetation are included in Appendix B. Photographs of nine-awned pappus grass obtained during the focused 2011 surveys for this species were included in the 2011 BIO-18 Annual Compliance Report (CH2M HILL, 2012a). Additional photographs of the special-status plants are provided in the annual compliance reports (CH2M HILL, 2012a; 2013; 2014; 2015a) and BIO-18, Special-status Plant As-Built Report (CH2M HILL, 2015b).

3.1 Mojave Milkweed (*Asclepias nyctaginifolia*)

Mojave milkweed is a perennial herb with stems and leaves that die back completely at the end of the growing season. In California, it produces showy, cream-colored flowers from May to June and again in fall, if summer rainfall is adequate.

The habitat of this species in California includes washes and dry slopes in Mojave desert scrub and pinyon-juniper woodland, from about 3,000 to 5,100 feet in elevation (Solar Partners, 2010a). The distribution of Mojave milkweed in California is limited to a few locations in the eastern Mojave Desert. Mojave milkweed is not federally or state-listed, nor considered a BLM-sensitive species, but it has a California Rare Plant Rank (CRPR) of 2B.1 and a Heritage Program Rank of G4G5/S2 (CDFW, 2015).

3.2 Desert Pincushion (*Coryphantha chlorantha*)

Desert pincushion is a small leafless stem succulent that produces yellow-green flowers (Appendix B). At the ISEGS site, this species was observed in flower between April and May (GANDA, 2008). The habitat of desert pincushion in California is described as Mojave desert scrub, Joshua tree woodland and pinyon-juniper woodland, on gravelly or rocky carbonate (limestone) substrates, from about 3,000 to 7,000 feet in elevation (GANDA 2008). The distribution of desert pincushion in California is restricted to the eastern Mojave Desert in Inyo and San Bernardino counties. Desert pincushion is not federally or state-listed, nor is it a BLM-sensitive species. Desert pincushion is a CRPR List 2B.1 species and has a Heritage Program Rank of G2G3/S2 (CDFW, 2015).

3.3 Parish's Club-cholla (*Grusonia parishii*)

Parish's club-cholla is a clonal stem succulent that forms large, spreading mats of prostrate stems (Appendix B). The flowers are yellow to red, which appears from May to July in California. The habitat of this species in California is described as Sonoran desert scrub, Mojave desert scrub, and Joshua tree woodland, in sandy flats, from about 2,950 to 5,000 feet in elevation (Solar Partners, 2010a). The distribution of Parish's club-cholla in California includes the Mojave and Colorado deserts in San Bernardino, Riverside, and Imperial counties. Parish's club-cholla is not federally or state-listed, nor is it a BLM-sensitive species. Parish's club-cholla has a CRPR of 2B.2 and a Heritage Program Rank of G3G4 (?)/S2 (CDFW, 2015).

3.4 Nine-awned Pappus Grass (*Enneapogon desvauxii*)

Nine-awned pappus grass is a summer annual in California, meaning that it germinates and grows after summer rain. It flowers in California from August to September. The habitat of nine-awned pappus grass in California is described as rocky calcareous (limestone) soils in pinyon-juniper woodland from 3,825 to 5,475 feet in elevation (Solar Partners, 2010a). The ISEGS surveys and recent collections show that this species also occurs in Mojave desert scrub down to elevations of 2,900 feet (GANDA 2008). The distribution

of nine-awned pappus grass in California is limited to the eastern Mojave Desert in San Bernardino County. Photographs of nine-awned pappus grass obtained during the focused 2011 surveys for this species were included in the 2011-BIO-18 Annual Compliance Report (CH2M HILL, 2012a).

Nine-awned pappus grass has a CRPR of 2B.2 and a Heritage Program Rank of G5/S2 (CDFW, 2015). It is not federally or state-listed, nor is it a BLM-sensitive species. As described in the Plant Protection and Remedial Action Plans (Solar Partners, 2010a; 2010b), this species germinates and grows from an existing seed bank whenever summer rainfall is adequate. No special avoidance or salvage procedures were therefore proposed other than seed collection from onsite localities in case species-specific remedial measures are needed. Several localities of nine-awned pappus grass were identified during focused surveys in 2011 (CH2M HILL, 2012a).

3.5 Rusby's Desert Mallow (*Sphaeralcea rusbyi* var. *eremicola*)

Rusby's desert mallow is a small (to 18 inches), soft-woody subshrub with showy, dark apricot-colored flowers and drought deciduous leaves (Appendix B). Information on how to identify Rusby's desert mallow and additional photographs of this species are provided in the 2011 BIO-18 Annual Compliance Report (CH2M HILL, 2012a). The palmately compound leaves distinguish this species from the much more common species, desert mallow (*Sphaeralcea ambigua*). The habitat of Rusby's desert mallow includes Mojave desert scrub and Joshua tree woodland at elevations of 2,925 to 4,500 feet (Solar Partners, 2010a).

Rusby's desert mallow is endemic to California, where it is restricted to the eastern Mojave Desert. Rusby's desert mallow is not federally or state-listed. It has a CRPR of 1B.2 and a Heritage Program Rank of G4T2/S2 (CDFW, 2015). Species with a CRPR of 1B are considered a sensitive species by BLM (BLM, 2009).

Restoration and Monitoring Methods

This section describes the methods used to hand-broadcast special-status plant seed and to salvage and transplant special-status plants into the disturbed portions of the natural gas line corridor. Seed collection, seeding, and planting was performed in 2012 through 2014. The substantial completion of construction milestone was reached at the end of December 2013, and the ISEGS project commenced commercial operation in January 2014. Year-1 of post-construction monitoring was performed in fall 2014 (CH2M HILL, 2015c). Year-2 (2015) monitoring is the subject of this report. Post-construction monitoring methods are also described in this section.

4.1 Special-status Plant Revegetation Areas

Special-status plant revegetation areas were established in suitable habitat within and along both sides of the gas line corridor. Figure 4-1 shows the general location of the gas line corridor included in special-status revegetation.

4.1.1 Personnel and Dates of Field Work

Two botanists with several years of Mojave Desert botanical survey experience and familiarity with the special-status plants of the site performed the special-status plant seeding and planting within the gas line disturbance area. Task oversight and direction was provided by Amy Hiss/CH2M HILL with field assistance from Morgan King/CH2M HILL. During construction, seeding, planting, and monitoring were conducted on the following dates: November 8 and 11, 2012; June 4-6, 2013; September 30, 2013; and December 1, 3, 5, and 7, 2013. Post-construction monitoring, and additional seeding and planting, was performed on September 9, 15, and 16, and November 4, 5, 6, 7, 11, 12, and 14, 2014. Year-2 of post-construction monitoring and minor supplemental planting was performed on April 24-27, 2015.

4.1.2 Soil Preparation

The soil within the gas line disturbance area was prepared to specifications contained in the Revegetation Plan (CH2M HILL, 2010). Prior to revegetation, the soil along the natural gas line corridor was roughened up with a grader equipped with a ripping claw. The top 2 inches of the soil was decompacted and roughened up to create pits and microswales in the soil surface that may function as micro-catchments to capture and hold moisture, seeds, organic debris, and to enhance plant reestablishment. The ripping stage also unearthed many small and medium-sized rocks that contribute to surface heterogeneity and which in turn may also aid in seedling and plant establishment.

4.1.3 Hand Broadcast Seeding

Special-status plant seeding and planting activities were performed by hand and on-foot using small landscaping equipment such as trowels and shovels. Special-status seed used was collected onsite between 2010 and 2013. Seed had been cleaned, dried, and placed in cold storage. Special-status plant seed was removed from the cold storage and acclimatized. Rusby's desert mallow seed was scarified ("roughened up") to help break dormancy and increase germination. Scarification was performed by placing individual seed lots in small plastic bottles along with small pebbles and sand and then shaken by hand.

The gas line corridor was divided into three broad elevation categories (higher, medium, and lower). Seed lots originally collected from higher elevations were sown in the upper part (northerly end) of the gas line corridor at higher elevations (Figure 4-1). Seed originally collected onsite from more southern portions of the site fell into the middle and lower elevation category, and was sown into the middle and lower parts of the gas line.

Seed was broadcast onto the soil surface by hand into small seed "beds" (ranging in size from 0.5-meter square to rectangular-shaped seed beds approximately 2 meters by 0.5-meter in width). Seed was covered

by a thin layer of dirt (less than a few cm) and lightly compacted by hand or foot to firmly place the seeds in the seed bed.

4.1.4 Planting

In addition to seeding, live plants were salvaged from the solar fields (outside of special-status plant protection areas [SSPPAs] or from the Rare Plant Transplantation Nursery [RPTA-1]) using shovels and other hand-tools and then transplanted the same day. To increase the potential for plant survivorship, transplanting was generally performed during the fall, when temperatures tended to be relatively cooler. Prior to salvaging and transplanting activities, areas along the corridor that contained suitable microhabitat elements were identified for each special-status species (e.g., Mojave milkweed was placed at the edge of smaller washes). These locations were flagged and mapped in the field. Transplanting to areas containing similar micro-habitats and other variables is important because it could increase plant survivorship. For example, Mojave milkweed was transplanted at the bottom or toe of drainages because that is the habitat in which this species typically is found onsite. Additionally, the shrub-configuration near the salvaged special-status plant was also replicated in the planting location. If a special-status plant (e.g., desert pincushion) was originally located under a yucca or another shrub that functioned as a “nurse plant,” a site with a similar shrub-configuration was selected for the transplanting location. For desert pincushion, the north-facing side of the plant was marked with a small dot of paint to make sure it was replanted facing the same direction.

Like the seeding effort, the gas line corridor was divided into three broad elevation categories (higher, medium, and lower). Plants were transplanted within the gas line corridor into their respective elevation category. Plants from higher elevations were installed into the more northerly portions of the gas line. Plants originally salvaged from lower elevations (within Units 1, 2, or the CLA) were placed at middle to lower elevations in the southern part of the gas line. All live plants were thoroughly watered immediately after transplanting. Plants were also irrigated twice more during December 2013, January 2014, September 2014, November 2014, and April 2015. The onsite biological monitors also watered the plants occasionally if work was performed in that part of the project site.

4.1.5 Data Collection

The locations where individual plants were transplanted and seed was hand-broadcasted were assigned a unique identification number to track these areas over time. Stakes and tags were labelled with the unique identification number and installed next to each plant and nearby the seed bed. Photographs of each seed bed and transplanted plant were taken to document field conditions. Representative photographs from Year-2 (2015) monitoring are provided in Appendix B. The location of each seed bed and plant was mapped using a Global Positioning System (GPS) unit with sub-meter accuracy. A project-specific data sheet was created to record data on plant location, habitat, substrate, elevation, and GPS coordinates. A copy of the datasheet used during the field work is included in Appendix C. Data on survivorship and germination were collected in 2015 during Year-2 (2015) post-construction monitoring. Photographs of each seed bed and transplanted plant were taken to document field conditions.

4.2 Monitoring Methods

The Revised Revegetation Plan (Section 7.8.2, Field Monitoring), lists the following monitoring parameters that will be used to monitor the success of the site-wide revegetation program (including the gas line):

- Germination and survivorship
- Cover and density
- Species richness and diversity

Special-status plants will be reestablished within a relatively small area (8.4 acres) in comparison to the overall site revegetation effort. The monitoring methods described in Section 7.8.2, Field Monitoring, are designed to collect data on a subset (or sample) of the revegetated areas throughout the total site because

the entire area is so large. Measures of percent cover using belt transects and counts of species richness and diversity are not the most efficient methods for collecting data on a few special-status plants that can easily be counted (censused) instead of sampled (which would include only a portion of the area).

Therefore, percent survivorship of a target number of plants will be used to evaluate revegetation success. Percent cover data will be collected assuming each entire seed bed is one plot for the nine-awned pappus grass seed beds only. Percent cover will be collected only to assess trends of the seeded areas to increase in cover over time. Field datasheets that will be used during the monitoring are included in Appendix C.

4.2.1 Special-status Plant Revegetation Success Criterion

The objective of the special-status plant revegetation effort is to reestablish special-status plants within the gas line corridor and comply with BIO-18, Measure 8, Gas Pipeline Revegetation and Monitoring. Section 7.9 of the Revised Revegetation Plan includes success criteria targets for revegetation of the entire site, including the natural gas line (CH2M HILL, 2010). However, they are focused primarily on general vegetative cover and species richness. The Revised Revegetation Plan success criteria were developed based on ecological data collected prior to construction onsite and in areas nearby the site with known disturbance regimes. The baseline data collected are described in Appendix D of the Revised Revegetation Plan (and are summarized in Section 3.4.4, Baseline Surveys) (CH2M HILL, 2010).

4.2.1.1 Special-status Plant Density

Special-status plant abundance data were reviewed and analyzed to obtain baseline data (without plots) similar in some respects to the procedures completed for the Revised Revegetation Plan described above. The number of plants identified during the 2007 and 2008 botanical surveys, as presented in the Revised Protection Plan (Solar Partners, 2012a), were combined with the results of the 2011 Fall Botanical Surveys (CH2M HILL 2012a) to form a complete dataset that encompassed both spring and fall seasons. This dataset was used to calculate the density of the special-status plants on a per-acre basis for each project element. Results of this analysis were used to calculate a target density (number of plants), goals, and a success criterion based on target plant numbers, for the special-status plants.

4.2.1.2 Target Number of Special-status Plants

Table 4-1 summarizes the findings of the baseline data analysis and lists the number of target special-status plants (i.e., the goal) that the project is trying to reestablish along the gas line corridor. Tables D-1 through D-5 in Appendix D provide more detailed special-status plant density calculations for each species and project element. The numbers in Table 4-1 (last two columns) match or exceed the pre-construction condition. The pre-construction condition is the average number of these special-status plants per-acre, times the 8.4 acres for the natural gas line corridor area, that occurred in either the NRPMA or the natural gas line corridor prior to the start of construction. In other words, a large numbers of plants that may have occurred in one project feature (e.g., CLA-1) during pre-construction surveys may not be expected to become established in the same abundance in the natural gas line corridor, when their pre-construction presence in that area was substantially less (see, for example, Table D-1, in Appendix D).

The number of target plants (the goal) is an average based upon the highest end point in the range of plant densities throughout the project site (i.e., all seven project features). However, the minimum success criterion (Table 4-1, last column) is all that is required to reestablish these special-status plants. No more than two attempts will be made to meet the goals. However, continued attempts will be made until the success criterion is met, or the CPM determines that additional attempts are not warranted.

TABLE 4-1

Target Number of Special-Status Plants to Reestablish Along the Gas Line Corridor Based on Pre-Construction Densities

Species	Range of Plant Density Values/per acre	Range of Plant Density Values/per 8.4 acres	Target Number of Plants (Goal)	Minimum Acceptable Success Criterion
Mojave milkweed	0 to 0.64	0 to 5.4 plants	5	1
Desert pincushion	0 to 0.24	0 to 2 plants	2	2
Rusby's desert mallow	0 to 0.002	0 to 0.2 plants	1	0
Parish's club-cholla	0 to 0.35	0 to 2.9 plants	3	0
Nine-awned pappus grass	0 to 11.72	0 to 98 plants	98	17
Total			109	20

Notes:

Target numbers are based on the density of special-status plants prior to construction on a per acre basis. See Tables D-1 through D-5 in Appendix D.

The natural gas line corridor and tap station total approximately 8.4 acres

Plant census data source: 2007-2008 Rare Plant Surveys (GANDA, 2008)

Nine-awned pappus grass data source: 2011 Fall Botanical Survey Report (CH2M HILL, 2012a).

Rusby's desert mallow occurs in very low numbers in the project area and it may not be practicable to reestablish this species

Parish's club-cholla is primarily distributed in the southern part of the project site (in the CLA and Unit 1). It may be difficult to reestablish this species at higher elevations of the northern gas line

The density of nine-awned pappus grass may only reach the target or minimum densities during years with above-average summer rainfall. For this reason, baseline density in the NRPMA alone was used to calculate the minimum acceptable target number of plants for nine-awned pappus grass rather than the higher gas line density (see Density Table D-5, in Appendix D).

The number of target plants (the goal) is an average based upon the highest end point in the range of plant densities throughout the project site (i.e., all seven project features). However, based on calculations of pre-construction densities, the minimum success criterion (Tables 4-1 and 5-1, last column) is all that is required to reestablish these special-status plants. No more than two attempts will be made to meet the goals. However, continued attempts will be made until the success criterion is met, or the CPM determines that additional attempts are not warranted.

4.2.1.3 Success Criterion

Percent survivorship of a target number of plants will be used to evaluate the success of the revegetation. For the nine-awned pappus grass seed beds, percent cover data will be collected assuming each entire seed bed is one plot. Percent cover will be collected only to assess trends of the seeded areas to increase in cover over time. Datasheets that will be used during the field monitoring are included in Appendix C. If the target numbers of special-status plants are attained in any two consecutive monitoring years the reestablishment will be considered successful, and monitoring will cease. Monitoring may not occur in low rainfall years, and lack of monitoring in low rainfall years will not be considered non-performance.

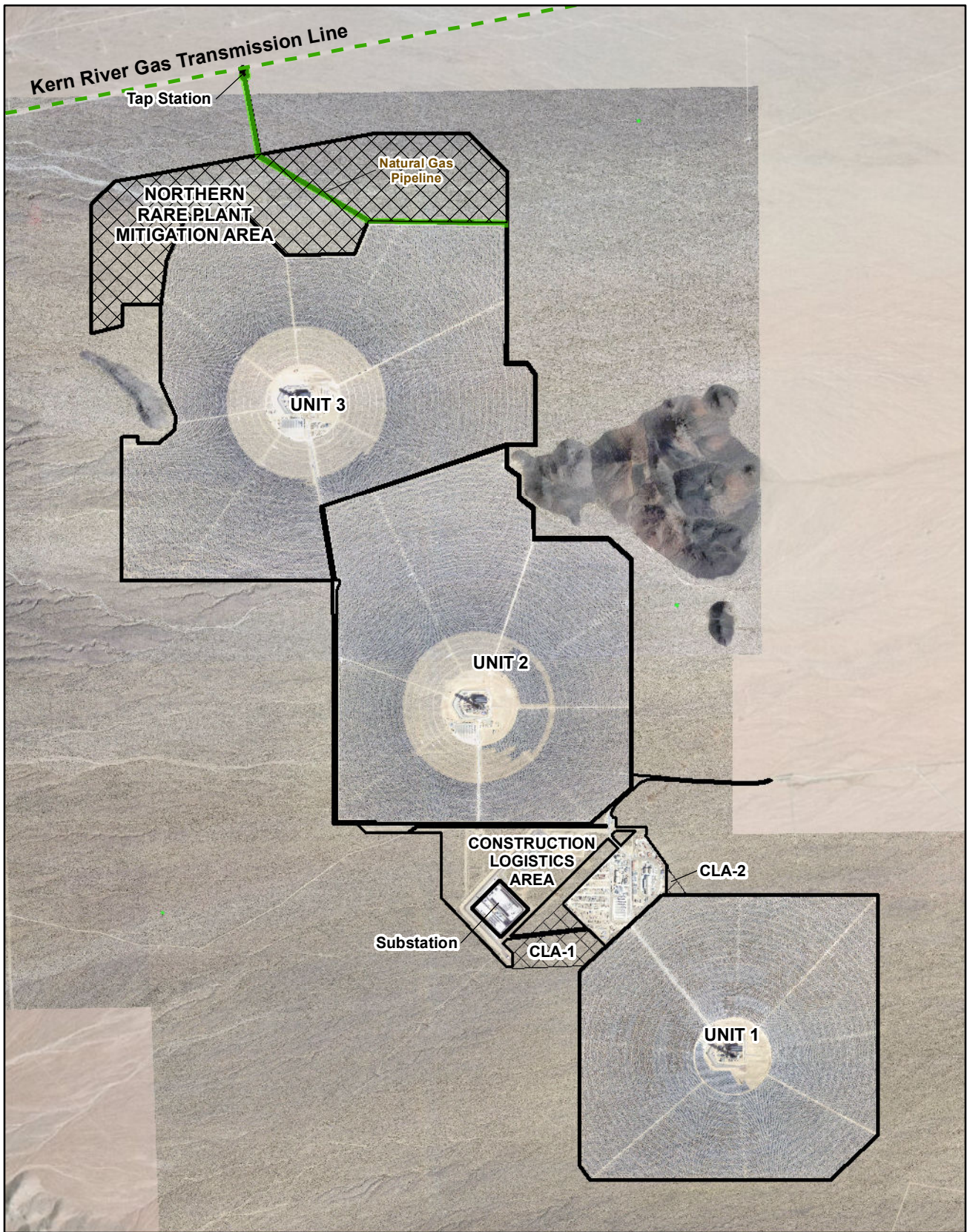
4.2.1.4 Supplemental Seeding or Other Remedial Measures

BIO-18 requires supplemental seeding or other remedial measures only if *no* Rusby's desert-mallow, desert pincushion, or Mojave milkweed are found after the first year of monitoring. Both desert pincushion and Mojave milkweed were identified during the first and second years of monitoring; therefore, supplemental seeding or other remedial measures are not necessary. Results of post-construction monitoring are described in Section 5.




4.2.2 Monitoring Schedule

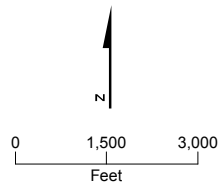
Monitoring will be performed for no less than 10 years, or until the minimum acceptable target plant number success criterion is achieved. The first year of post-construction monitoring commenced in fall 2014 (CH2M HILL, 2015c). The second year of monitoring was performed in 2015. In low rainfall years, monitoring may not be conducted. Postponement of monitoring due to low rainfall will not be considered non-performance.

If the minimum acceptable number of special-status plants presented in Tables 4-1 and 5-1 are attained in any two consecutive monitoring years (excluding lower than average rainfall years during which monitoring may not be performed due to lack of plant emergence and/or growth), the reestablishment will be considered successful, and monitoring of special-status plants will cease. As required by BIO-18, Verification, record summaries of the gas line revegetation will continue to be submitted in the Annual Compliance Report for a period of not less than 10 years, regardless of the success criterion being met earlier in the 10-year monitoring period.



LEGEND

-  Project Boundary
-  Revegetation Area
-  Mitigation Area



Aerial Imagery courtesy of Google Earth (© 2013 Google). Imagery Date: 03/22/2013

Figure 4-1
Location of Gas Line
Special-status Plant Revegetation
Ivanpah Solar Electric Generating System

Monitoring Results

This section presents results of Year-2 (2015) post-construction special-status plant revegetation monitoring of the natural gas line. Results of the first year of natural gas line monitoring are included in the Year-1 (2014) Post-construction Natural Gas Line Monitoring Report (CH2M HILL, 2015c). Table 5-1 presents the number of successful special-status plant seeding and planting locations observed in 2015, by species, compared to the target goals presented in Table 4-1. Figure 5-1 shows the location of special-status plant revegetation seeding and planting.

5.1 Special-status Plant Revegetation

5.1.1 Number of Special-status Plants Transplanted

A total of 47 special-status plants were salvaged from unprotected areas in the solar field and CLA and transplanted into the gas line revegetation corridor between 2012 and 2015 (Figure 5-1). In fall 2012, 41 special-status plants (20 desert pincushion, 20 Mojave milkweed, and 1 Parish's club-cholla) were transplanted into the gas line corridor. In 2013, one Mojave milkweed and one Rusby's desert mallow were salvaged from the solar field and transplanted into the upper part of the gas line. In 2014, one Rusby's desert mallow plant located outside of a special status plant protection area (SSPPA) in Ivanpah 2 was carefully salvaged and transplanted to the gas line. The Rusby's desert mallow plants that were transplanted in 2013 and 2014 did not exhibit new growth in 2015. In 2015, three additional Rusby's desert mallow individuals were salvaged from Unit 3 and transplanted into the southeastern portion of the gas line corridor. Protective wire mesh was placed over the transplanted Rusby's desert mallow to protect them from being damaged by browsing animals.

5.1.2 Number of Seed Beds Established

In 2012, 2013, and 2014, special-status plant seed was hand-broadcasted into 69 suitable habitat locations (referred to as "seed beds") within the gas line corridor (Figure 5-1; CH2M HILL, 2015c). The number of seeding and planting locations for each special-status plant species is summarized in Table 5-1. Mojave milkweed was broadcast seeded in 15 locations, desert pincushion seed was placed into 9 areas, nine-awned pappus grass was seeded in 13 locations, and Rusby's desert mallow seed was sown into 32 locations (15 locations were seeded in 2013 and an additional 17 seed beds were established in 2014). In fall 2014, 17 additional Rusby's desert mallow seed beds were established to increase the chance of successfully reestablishing this species. A total of 100 seeds were placed at each Rusby's desert mallow seed bed. Prior to placing seed, the seed was lightly scarified.

5.1.3 Year-2 (2015) Post-Construction Monitoring

5.1.3.1 Seed Beds

In spring 2015, all previously established seed beds and planting locations were reviewed in the field; however, late-summer or fall is the optimum time of year to observe this species. Representative photographs showing the seed beds are provided in Appendix B. Several of the seed beds had been scoured or were buried with new deposits and were likely no longer present, particularly those that had been situated lower on the drainage slopes.

None of the Rusby's desert mallow or desert pincushion seed beds supported recent or older plant material suggesting germination or growth (Table 5-1). Seven of the 15 Mojave milkweed seed beds (or 3 more than observed in 2014) contained small sprouts. Sprouts that occurred within a few feet of each other were considered to be one plant. New growth on 1 Mojave milkweed plant was recorded in 2015 (Table 5-1).

TABLE 5-1

Number of Special-status Plant Seeding and Planting Locations in the Gas Line Corridor Compared to Target Goals

Special-status Plant Species	Number of Seed Beds Installed 2012-2014	Number of Plants Salvaged and Transplanted 2012-2015	Number of Plants Counted in Seed Beds in 2015	Number of Plants Alive in 2015	Total Number of Plants Identified in 2015 Surveys	Target Number of Plants (Goal)	Minimum Acceptable Number of Plants (Success Criterion)	Goals Met?	Success Criterion Met?
Mojave milkweed	15	21	7	1	8	5	1	Yes	Yes
Desert pincushion	9	20	0	17	17	2	2	Yes	Yes
Rusby's desert mallow	32	5	0	3 (planted in 2015)	3 (planted in 2015)	1	0	Uncertain – assess in spring 2016	Yes
Parish's club-cholla	0	1	0	1	1	3	0	No	Yes
Nine-awned pappus grass	13	0	0	0	0	98	17	No	No
Total	69	47	0	22	29	109	20	No	No

Notes:

The number of target plants (the goal) is an average based upon the highest end point in the range of plant densities throughout the project site (i.e., all seven project features). However, based on calculations of preconstruction densities, the minimum success criterion (Tables 4-1 and 5-1, last column) is all that is required to reestablish these special-status plants. No more than two attempts will be made to meet the goals. However, continued attempts will be made until the success criterion is met, or the CPM determines that additional attempts are not warranted.

Figure 5-1 shows the location of seed beds and transplanted special-status plants

Nine-awned pappus grass tuft (discrete grouping) are counted as a single plant; plants present prior to seeding do not count towards reestablishment goal (N1-N4) but new recruits outside of seed beds will be counted towards the target number. In spring 2015, outside of the season in which nine-awned pappus grass is detectable, five of the nine-awned pappus grass seed beds contained remnants of dried culms from the previous fall; however, these remnant stalks were not counted towards the 2015 success criterion since this was prior-year growth.

More Mojave milkweed sprouts were counted than tabulated here. If they were within a few feet of each other, they were considered a single plant. It is uncertain how many of these will mature and reproduce. One naturally occurring Mojave milkweed (ASNY-2096-13-001) was identified outside of a seed bed along the gas line. This plant has been counted towards the reestablishment target

A total of 32 Rusby's desert mallow seed beds were placed in the gas line corridor, 15 were established in 2013 and an additional 17 were placed in 2014

One Rusby's desert mallow plant was salvaged and transplanted in 2013, a second individual was salvaged and transplanted in 2014, and three additional plants were salvaged and transplanted in 2015

Nine-awned pappus grass is a summer annual in California, meaning that it germinates and grows after summer rain. Nine-awned pappus grass does not occur every year. Based on a field reconnaissance, conditions within the gas line corridor for nine-awned pappus grass growth in fall 2015 were determined to be poor. Therefore, a separate survey for nine-awned pappus grass was not performed in fall, 2015. The minimum acceptable target number of nine-awned pappus grass is 17 (Table 5-1). It is presumed that this species will germinate from the existing seed bank within the gas line in years with favorable rainfall as it has done elsewhere onsite.

5.1.3.2 Transplants

Predation and browse damage were observed on most of the transplanted special-status plants. Two Rusby's desert mallow were salvaged and transplanted into the gas line between 2013 and 2014 (Table 5-1). In 2015, these Rusby's desert mallow plants had dead stems but it is unknown if this is old plant material or if it is more recent growth, meaning that the plants could still be alive. Three additional Rusby's desert mallow plants were salvaged from unprotected areas in Unit 3 and transplanted in 2015. The survivorship status of the plants will be assessed in spring 2016. None of the transplanted Mojave milkweed survived. It is possible that these plants were planted when temperatures were still too hot and suffered root shock. The Parish's club-cholla that was transplanted in 2012 was still alive in 2015 (Table 5-1). Seventeen out of 20 desert pincushion were counted as alive in 2015; the same as noted in 2014. However, several have been grazed or damaged and some mortality is expected to occur.

5.2 Additional Special-status Plant Compliance Monitoring

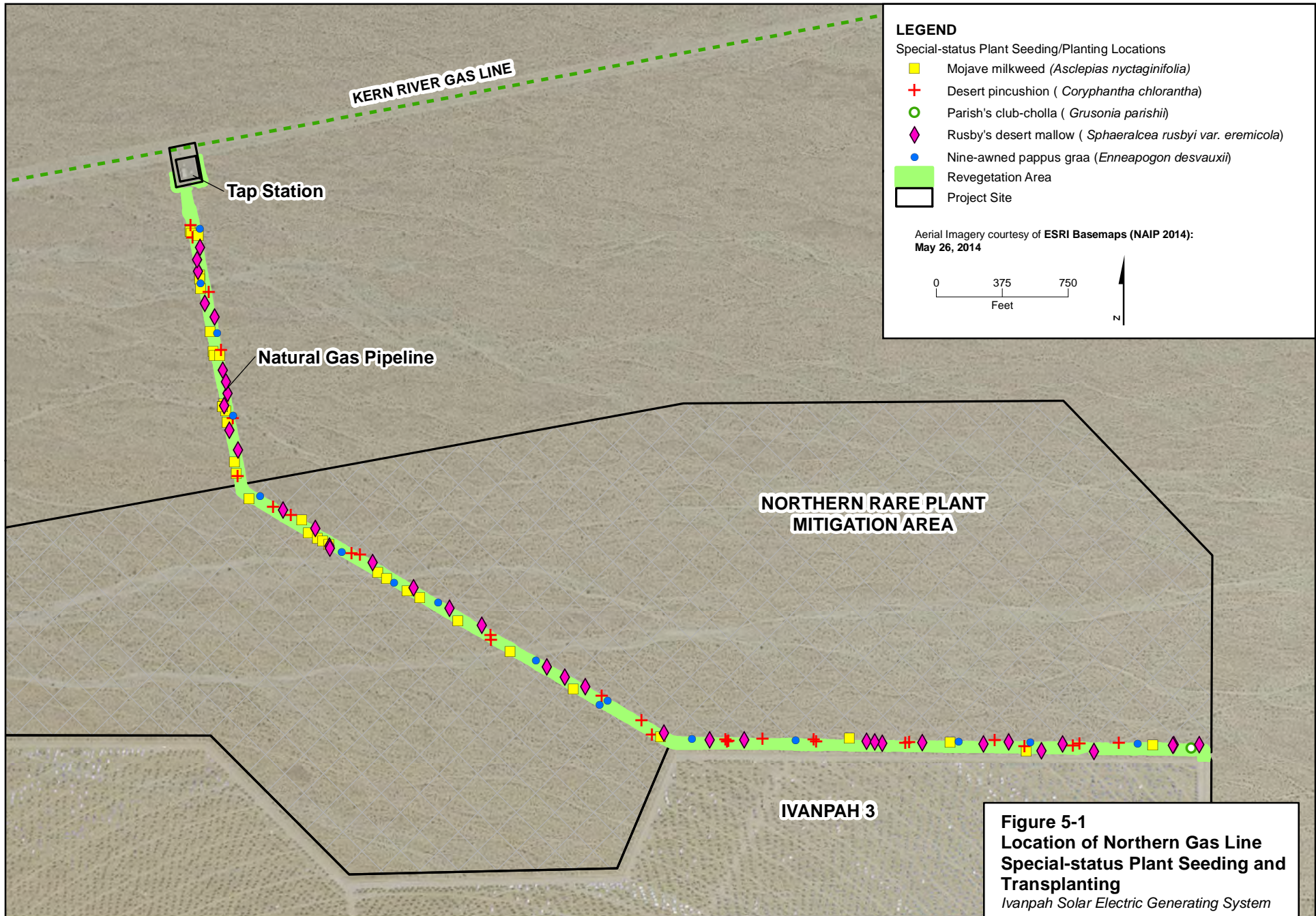
5.2.1 Year-3 (2016) Post-construction Monitoring

Monitoring is required to be performed for no less than 10 years or until the minimum acceptable target plant number success criterion is achieved. When performed, monitoring data will be evaluated to determine if the target numbers of special-status plants included in Table 4-1 has been obtained.

The number of target plants in Table 4-1 (the goal) is an average based upon the highest end point in the range of plant densities throughout the project site (i.e., all seven project features). However, the minimum success criterion (Table 4-1, last column) is all that is required to reestablish these special-status plants. No more than two attempts will be made to meet the goals. However, continued attempts need to be made until the success criterion is met, or the CPM determines that additional attempts are not warranted. If the success criterion is not met, remedial measures will need to be performed. These could include additional seed collection, broadcast seeding, or installation of additional plants.

In 2015, the minimum acceptable target plant numbers (Tables 4-1 and 5-1) were achieved for all of the special-status plants except nine-awned pappus grass. Monitoring of the gas line for nine-awned pappus grass will be performed in 2016, if conditions are appropriate, to evaluate if this special-status plant species is in present in minimum acceptable target numbers.

Annual monitoring summaries will continue to be provided by January 31 of each calendar year within the 10-year monitoring timeframe. The Year-3 (2016) report will be submitted by January 31, 2017.



SECTION 6

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Appendix A
Condition of Certification BIO-18

sections 2069 and 2099 or any other applicable in-lieu fee provision, the Project owner shall notify the Commission that it would like a determination that the Project's in-lieu fee proposal meets CEQA and CESA requirements.

SPECIAL-STATUS PLANT IMPACT AVOIDANCE AND MINIMIZATION

BIO-18 The project owner shall implement the following measures to avoid and minimize impacts to special-status plant species. Items 2, 3, 5, 6, 7, 10, and 11 are recommended exclusively by Energy Commission staff.

1. On-Site Plant Avoidance/Minimization Areas: To the extent feasible the project owner shall avoid and minimize disturbance to all special-status plant species within the project site. Impact avoidance (i.e., protection from project-related impacts of any kind through removal of acreage from the project footprint) and impact minimization efforts shall occur in all feasible locations. Impact avoidance shall focus on areas that support the highest density and diversity of special-status plant species and shall remove, at a minimum, the three areas totaling 476 acres and labeled "Rare Plant Mitigation Area" in Project Description Figure 13 from the Staff's FSA Addendum dated March 16, 2010 (Exhibit 315). The natural gas pipeline shall be aligned and narrowed to avoid special-status plant occurrences north of Ivanpah 3 as depicted in Project Description Figure 13. Impact minimization shall be conducted throughout the site. Impact minimization within the solar field shall consist of protecting small perimeters ("halos") around Mojave milkweed, desert pincushion, and Rusby's desert-mallow plants as indicated in the applicant's January 2010 draft Special-Status Plant Avoidance and Protection Plan (Exhibit 81, Appendix B).
2. Protection Goals : The project owner shall implement all feasible measures to protect 75 percent of the individuals of Mojave milkweed, Rusby's desert-mallow, desert pincushion, nine-awned pappus grass, and Parish's club-cholla within the project area (as mapped in Figure 5-3 of the applicant's final botanical survey report [CH2M Hill 2008x]). Each year during construction the measurement of percent protection achieved shall be calculated based on a comparison of numbers of individuals of each of these five species present in this area identified before construction compared to numbers remaining post -construction. These pre- and post-construction plant numbers shall be based on floristic surveys conducted by a qualified botanist.
3. Identify and Establish Special-Status Plant Protection Areas: The project owner shall identify Special-Status Plant Protection Areas for exclusion from the project footprint and avoidance of project-related impacts of any kind to facilitate achieving the 75 percent

protection goal. To accurately identify the boundaries of these areas, pre-construction floristic surveys shall be conducted by a qualified botanist at the appropriate time of year for special-status plant identification, including both spring and summer/fall blooming periods. Summer/fall surveys will be conducted after rains that are likely to cause plant germination and may be suspended in years where no such rains occur. The surveys shall encompass at a minimum the three areas totaling 476 acres and labeled “Rare Plant Mitigation Area” in Project Description Figure 13 and shall extend 150 feet on both sides of the proposed gas pipeline alignment and 250 feet out from the project fenceline. The locations of the Special-Status Plant Protection Areas shall be clearly depicted on all final maps and project drawings and descriptions for exclusion of all project activities.

4. Protection of Adjacent Occurrences: The project owner shall identify special-status plants occurrences within 250 feet of the project fenceline during the pre-construction plant surveys described above. A qualified botanist shall delineate the boundaries of these special status plant occurrences prior to the initiation of ground disturbing activities. These flagged special status plant occurrences shall be designated as Environmentally Sensitive Areas on plans and specifications, and shall be protected from accidental impacts during construction (e.g. vehicle traffic, temporary placement of soils or vegetation) and from the indirect impacts of project operation (e.g., herbicide spraying, changes in upstream hydrology, etc).

5. Develop and Implement a Special-Status Plant Protection and Monitoring Plan: The project owner shall develop and implement a Special-Status Plant Protection and Monitoring Plan for special-status plants occurring within the Special-Status Plant Protection Areas and on-site areas designated for impact minimization. The goal of the Special-Status Plant Protection and Monitoring Plan shall be to maintain the special-status plant species as healthy, reproductive populations that can be sustained in perpetuity. At a minimum, the Special-Status Plant Protection and Monitoring Plan shall:
 - establish baseline conditions and numbers of the plant occurrences in all protected areas (i.e., those to be excluded from the footprint and on-site areas to be protected) and success standards for protection of special-status plant occurrences;

 - provide information about microhabitat preferences and fecundity, essential pollinators, reproductive biology, and

propagation and culture requirements for each special-status species;

- describe measures (e.g., fencing, signage) to avoid direct construction and operation impacts to special-status plants within all protected areas;
- describe measures to avoid or minimize indirect construction and operations impacts to special-status plants within protected areas (e.g., runoff from mirror-washing, use of soil stabilizers/tackifiers, alterations of hydrology from drainage diversions, erosion/sedimentation from disturbed soils upslope, herbicide drift, the spread of non-native plants, etc);
- provide a monitoring schedule and plan for assessing the numbers and condition of special-status plants; and
- identify specific triggers for remedial action (e.g., numbers of plants dropping below a threshold).

6. Develop Special-Status Plant Remedial Action Plan: The project owner shall develop a detailed Special-Status Plant Remedial Action Plan to be implemented if special-status plants within the 476 acres of protected area and on-site minimization “halos” fail to meet success standards described in the Special-Status Plant Protection and Monitoring Plan. The Plant Remedial Action Plan shall include specifications for ex-situ/offsite conservation of seed and other propagules, and the seed bank and other symbionts contained in the topsoil where these plants occur. The remedial measures described in the Plant Remedial Action Plan shall not substitute for plant protection or other mitigation measures. The Special-Status Plant Remedial Action Plan shall include, at a minimum:

- guidelines for pre-construction seed collection (and/or other propagules) for each species;
- specifications for collecting, storing, and preserving the upper layer of soil containing seed and important soil organisms;
- detailed replacement planting program with biologically meaningful quantitative and qualitative success criteria (see Pavlik 1996), monitoring specifications, and triggers for remedial action; and
- ecological specifications for suitable planting sites.

7. Seed Collection: Implementation of the Special-Status Plant Remedial Action Plan would require a source of local source of seeds/propagules. In addition, seed collection would serve to

preserve germplasm in the event that all mitigation fails. The project owner shall develop and implement a Seed Collection Plan to collect and store seed for Mojave milkweed, Rusby's desert-mallow, desert pincushion, nine-awned pappus grass, and Parish's club-cholla. The source of these seeds shall be from plants proposed for removal within the project footprint. The project owner shall engage the services of a qualified contractor approved by the CPM to undertake seed collection and storage.

8. Gas Pipeline Revegetation and Monitoring: In the natural gas pipeline construction corridor where disturbed soils will be revegetated, the topsoil excavated shall be segregated, kept intact, and protected, under conditions shown to sustain seed bank viability. At a minimum, the top 2 cm of the soil shall be separately stored and preserved. Topsoil salvage, storing, and replacement shall be replaced in its original vertical orientation following pipeline installation ensuring the integrity of the top 2 cm in particular. The project owner shall prepare a Gas Pipeline Revegetation and Monitoring Plan targeted at re-establishment of Rusby's desertmallow, desert pincushion, Mojave milkweed, and potentially other special-status plant species. The Gas Pipeline Revegetation and Monitoring Plan shall identify success criteria for re-establishment and shall continue for a period of no less than 10 years until the defined success criteria are achieved. The Gas Pipeline Revegetation and Monitoring Plan shall include measures for seeding or other remedial actions. If no individuals of Rusby's desert-mallow, desert pincushion, or Mojave milkweed, are located during the first year of monitoring, the project owner shall conduct supplemental seeding or other remedial measures in the area disturbed by natural gas pipeline installation.
9. Surveys on Acquired and Public Lands: The project owner shall conduct floristic surveys for Rusby's desert-mallow and Mojave milkweed on all lands that will be acquired as part of the desert tortoise compensatory mitigation requirements (see Condition of Certification BIO-17). The goal of the surveys shall be to identify at least the same number of occurrences on off-site compensation or public lands as the number of occurrences in the project area excluding the occurrences in the Special-Status Plant Protection Areas in Project Description Figure 13. If this goal is not met by surveys on proposed acquisition lands, additional surveys shall be conducted within suitable habitat on public lands. To be counted toward fulfillment of the goal the occurrences must reflect new data not previously documented in other survey efforts. The survey requirements shall include the following:

- All surveys shall be conducted by a qualified botanist in accordance with BLM, CDFG, and CNPS plant survey guidelines;
 - Surveys shall occur the first spring after construction begins and continue each year for a maximum of ten years until the same number of Mohave milkweed and Rusby's desert-mallow occurrences are identified on acquisition lands and/or public lands as located outside Special-Status Plant Protection Areas;
 - For each year surveys are conducted yearly survey results shall be provided to the CPM, BLM's Authorized Officer and CDFG, and shall include CNDDDB field survey forms for all special-status plant species encountered during the surveys; and
 - All field survey forms shall be submitted to the CNDDDB at the time of submittal to the CPM, BLM and CDFG.
 - The project owner's qualified botanist shall submit a completion report documenting fulfillment of the target goals and which describe the number of new, previously undiscovered occurrences identified and mapped. Locations shall be reported with GPS coordinates compatible with inclusion in a GIS database.
10. Security for Implementation of Plans: The project owner shall provide security adequate to fund implementation of the Special-Status Plant Protection and Monitoring Plan, the Special-Status Plant Remedial Action Plan for the life of the project, as well as the Seed Collection Plan, and the Gas Pipeline Revegetation Monitoring Plan.
11. Acquire Off- Site Occurrence of Mojave Milkweed or Adjacent Land: The project owner shall acquire, in fee or in easement, a parcel or parcels of land that includes at least 30 acres supporting a viable occurrence of Mojave milkweed (or suitable habitat adjacent to a known occurrence). The terms and conditions of this acquisition or easement shall be as described in Condition of Certification BIO-17 with the additional criteria that the Mojave milkweed mitigation lands: 1) provide habitat for the special-status plant species that is of similar or better quality (e.g., in terms of native plant composition) than that impacted; 2) contain OR about a known occurrence of Mojave milkweed, ideally with populations that are stable, recovering, or likely to recover, that shares the same watershed as the land; and 3) be adequately sized and buffered to support self-sustaining special-status plant populations. These mitigation lands may be included with the desert tortoise mitigation lands ONLY if the above criteria are met. Estimated security for acquisition of compensation lands for Mojave milkweed is

\$107,265. If the project owner elects to construct the project in two phases in accordance with Condition of Certification BIO-22, the project owner shall provide Security in the amount of \$47,755 prior to initiating any ground-disturbing activities associated with Phase 1, and shall provide Security in the amount of \$77,510 prior to initiating any ground-disturbing activities associated with Phase 2. If sufficient new Mojave milkweed occurrences are discovered on desert tortoise compensation lands (not public lands) in accordance with item 9 above prior to acquiring this land, the associated security shall be refunded to the project owner.

Verification: No less than 30 days following the publication of the Energy Commission Decision the project owner shall submit final maps and design drawings depicting the location of Special-Status Plant Protection Areas within and adjacent to the project site, and shall identify the species and numbers of plants within each of the Special-Status Plant Protection Areas.

No less than 30 days following the publication of the Energy Commission Decision the project owner shall submit draft versions of the Special-Status Plant Protection and Monitoring Plan, the Special-Status Plant Remedial Action Plan, the Seed Collection Plan, and the Gas Pipeline Revegetation Monitoring Plan for review by the CPM, BLM's Authorized Agent, and CDFG. The project owner shall also provide a cost estimate for implementation of these plans which is subject to approval by the CPM, BLM's authorized agent, and the CDFG. The final plans shall be submitted for approval by the CPM, in consultation with BLM's Authorized Agent, CDFG, and CNPS within 90 days of the publication of the Commission Decision. The final plans shall be incorporated into the BRMIMP. At this time, the project owner shall also provide security sufficient to fund the implementation of the plans.

Within 30 days of the start of construction, the project owner shall submit copies of the contract with the CPM-approved seed contractor and the check for seed collection and curation fees to the CPM.

The project owner shall identify special-status plants occurrences within 250 feet of the project fence line during the pre-construction plant surveys described above. A qualified botanist shall delineate the boundaries of these special status plant occurrences at least 30 days prior to the initiation of ground disturbing activities.

On January 31st of each year following construction the project owner's qualified botanist shall submit a report, including CNDDDB field survey forms, describing the results of off-site plant surveys for Mojave milkweed and Rusby's desert-mallow to the BLM's authorized officer, the CPM, CDFG, and CNDDDB. Submittal of survey reports shall continue for a maximum of 10 years until the same number of occurrences in the project area excluding the occurrences in the

Special-Status Plant Protection Areas. The project owner's qualified botanist shall submit a completion report documenting fulfillment of the target goals and which describe the number of new, previously undiscovered occurrences identified and mapped using GIS techniques for each species. Mapping results shall include GPS coordinates of the plants found.

The Designated Biologist shall maintain written and photographic records of the tasks described above, and summaries of these records shall be submitted along with the Monthly Compliance Reports to the CPM, BLM Authorized Agent, and CDFG. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report for a period not less than 10 years for the Gas Pipeline Revegetation Plan, and for the life of the project for the Special-Status Plant Protection and Monitoring Plan, and the Special-Status Plant Remedial Action Plan, including funding for the seed storage.

No less than 90 days prior to acquisition of the parcel(s) containing or adjacent to a known Mojave milkweed occurrence, 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.

Draft agreements to delegate land 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 land acquisition. Such agreements shall be mutually approved and executed at least 60 days prior to start of any project-related ground disturbance activities. The project owner shall provide written verification to the CPM that the compensation lands have been acquired and recorded in favor of the approved recipients(s). Alternatively, before beginning project ground-disturbing activities, the project owner shall provide Security in accordance with this condition. Within 90 days after the 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.

Nelson's Bighorn Sheep Mitigation

BIO-19 To compensate for project impacts to Nelson's bighorn sheep the project owner shall finance, construct and manage an artificial water source in the eastern part of the Clark Mountain range or in the State Line Hills outside of designated Wilderness. The project owner shall monitor and control noxious and invasive weeds within 100 feet of the artificial water source. Control of weeds shall be coordinated with the CPM and BLM staff and shall consist of removal by mechanical methods, rather than herbicides. To minimize potential impacts to Nelson bighorn sheep, the project owner shall not use barbed wire fence on the northern perimeter of the Ivanpah 3 site, unless the project

Appendix B
2015 Representative Photographs



PHOTOGRAPH B-1
Desert pincushion COCH-2.



PHOTOGRAPH B-2
Close view of flowering desert pincushion COCH-2.



PHOTOGRAPH B-3
Desert pincushion COCH-2 (desert pincushion is by the orange stake). Tap station at back.



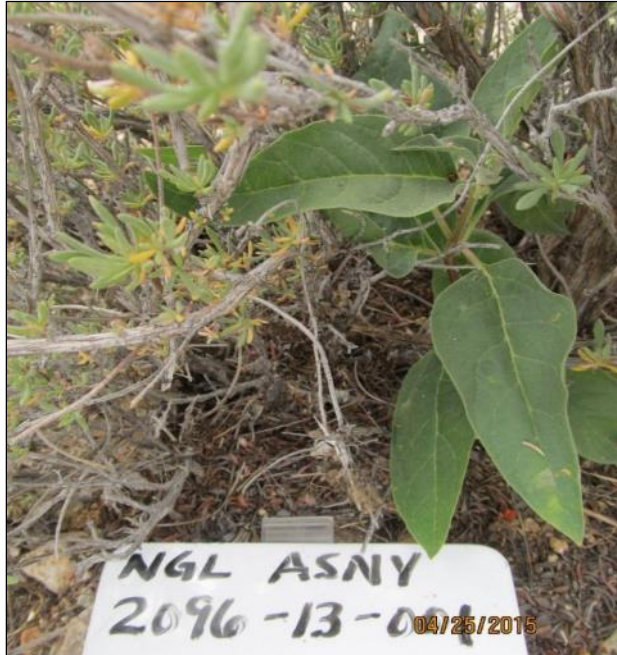
PHOTOGRAPH B-4
Desert pincushion COCH-3.



PHOTOGRAPH B-5
Desert pincushion COCH-3 in flower.



PHOTOGRAPH B-6
Mojave milkweed ASNY-2096-13-001.



PHOTOGRAPH B-7
Mojave milkweed ASNY-2096-13-001.



PHOTOGRAPH B-9
Desert pincushion COCH-4 (desert pincushion is by the orange stake).



PHOTOGRAPH B-8
Desert pincushion COCH-4.



PHOTOGRAPH B-10
Desert pincushion COCH-4.



PHOTOGRAPH B-11
Mojave milkweed 11.



PHOTOGRAPH B-12
Desert pincushion COCH-5 (by orange stake).



PHOTOGRAPH B-13
Desert pincushion COCH-5 in flower.



PHOTOGRAPH B-14
Mojave milkweed ASNY Seed 7.



PHOTOGRAPH B-15
Mojave milkweed ASNY Seed 7.



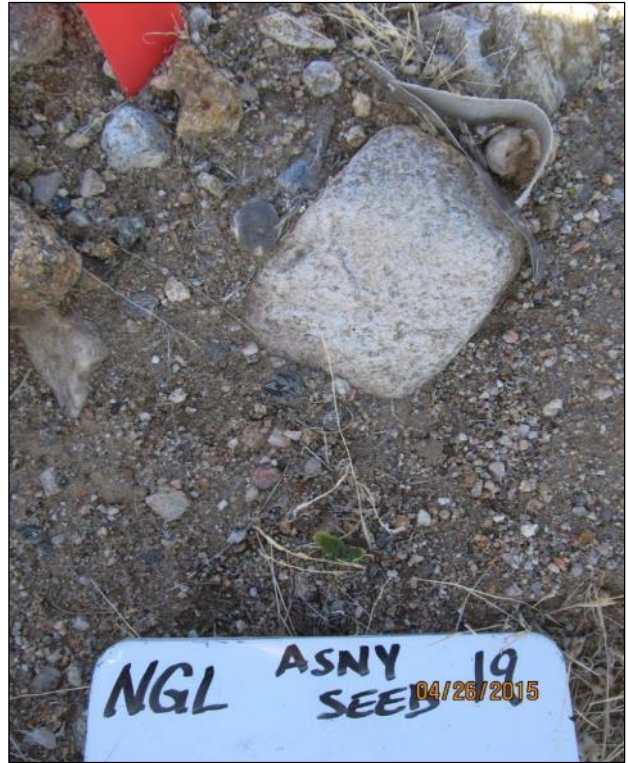
PHOTOGRAPH B-16
Mojave milkweed ASNY Seed 7.



PHOTOGRAPH B-17
Mojave milkweed ASNY Seed 20.



PHOTOGRAPH B-18
Mojave milkweed ASNY-20.



PHOTOGRAPH B-19
Mojave milkweed ASNY-19.



PHOTOGRAPH B-20
Mojave milkweed ASNY-19 (by orange stake).



PHOTOGRAPH B-21
Mojave milkweed ASNY-1.



PHOTOGRAPH B-22
Mojave milkweed ASNY-1.



PHOTOGRAPH B-23
Mojave milkweed ASNY-18.



PHOTOGRAPH B-24
Nine-awned pappus grass ENDE Seed 19. Dead culms present from previous fall.



PHOTOGRAPH B-25
Nine-awned pappus grass ENDE Seed 9. Dead culms present from previous fall.



PHOTOGRAPH B-26
Desert pincushion COCH-15 and 16.



PHOTOGRAPH B-27
Desert pincushion COCH-15.



PHOTOGRAPH B-28
Mojave milkweed ASNY Seed 15.



PHOTOGRAPH B-29
Mojave milkweed ASNY Seed 15.



PHOTOGRAPH B-30
Parish's club-cholla 0043-10-001.



PHOTOGRAPH B-31
Parish's club-cholla 0043-10-001.



PHOTOGRAPH B-32
Rusby's desert mallow SPRUER-0015-15-001.



PHOTOGRAPH B-33
Rusby's desert mallow SPRUER-0015-15-001.

Appendix C
Monitoring Datasheets

**IVANPAH SEGS PROJECT
NORTHERN GAS LINE**

PLANT RESTORATION SUCCESS

DATE:

BIOLOGISTS:

CH MAP FIG.1 Moving NW to SE, descending in elevation.

NO	RARE ELEMENT	PLANT		IDENTIFICATION		PHOTOGRAPHS AND NOTES	SEE FORM
		ABSENT	PRESENT	STAKE	TAG		
KERN RIVER TAP VALVE							
1	COCH 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
2	ASNY 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
3	ASNY 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
4	ASNY SEED 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
5	COCH 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
6	ENDE N1 location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
7	SPRUER SEED 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
8	ASNY 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
9	ASNY 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
10	ASNY 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
11	COCH 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
12	ENDE SEED 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
13	ASNY 6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
14	ENDE N2 location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
15	COCH SEED 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
16	ASNY 7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
17	ASNY 8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
18	ASNY SEED 6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
19	ASNY 9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
20	SPRUER SEED 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
21	ASNY SEED 14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
22	ASNY 2096-13-001	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
23	ASNY 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
24	ENDE SEED 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
25	COCH 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
26	ASNY 11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>

ASNY

COCH

ENDE

SPRUER

**IVANPAH SEGS PROJECT
NORTHERN GAS LINE**

PLANT RESTORATION SUCCESS

DATE:

BIOLOGISTS:

CH MAP FIG.2 Moving NW to SE, descending in elevation.

NO	RARE ELEMENT	PLANT		IDENTIFICATION		PHOTOGRAPHS AND NOTES	SEE FORM
		ABSENT	PRESENT	STAKE	TAG		
27	ASNY 12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
28	ASNY 13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
29	COCH 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
P.I. ANGLE							
30	ASNY SEED 7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
31	ENDE SEED 22	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
32	COCH 6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
33	SPRUER SEED 16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
34	COCH SEED 12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
35	ASNY SEED 20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
36	ASNY 14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
37	SPRUER SEED 15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
38	ASNY 15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
39	ASNY 16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
40	ASNY 17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
41	SPRUER 0011-13-001	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
42	SPRUER SEED 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
43	ENDE SEED 21	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
44	COCH 7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
45	COCH SEED 11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
46	SPRUER SEED 14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
47	ASNY 18	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
48	ASNY SEED 8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
49	ASNY 19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
50	ENDE SEED 20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
51	ASNY SEED 20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
52	SPRUER SEED 13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
53	ASNY SEED 19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
54	ENDE SEED 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
55	SPRUER SEED 12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
56	ASNY SEED 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
57	SPRUER SEED 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
58	COCH 8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
59	COCH 9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
60	ASNY SEED 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
NOTE:							
61	ENDE SEED 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

**IVANPAH SEGS PROJECT
NORTHERN GAS LINE**

PLANT RESTORATION SUCCESS

DATE:

BIOLOGISTS:

CH MAP FIG.3 Moving NW to SE to E, descending in elevation.

NO	RARE ELEMENT	PLANT		IDENTIFICATION		PHOTOGRAPHS AND NOTES	SEE FORM
		ABSENT	PRESENT	STAKE	TAG		
62	ASNY SEED 18	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
63	COCH SEED 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
64	ENDE SEED 19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
65	ENDE N3 location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
66	COCH SEED 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
67	COCH 11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
68	COCH 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
69	ASNY SEED 9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
70	SPRUER SEED 11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
P.I. ANGLE							
71	ENDE SEED 11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
72	COCH 14 (new location)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
73	COCH 12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
74	COCH 13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
75	SPRUER SEED 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
76	COCH SEED 9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
77	ENDE SEED 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
78	COCH 16 (new location)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
79	COCH 15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
80	ENDE N4 location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
81	ASNY SEED 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

ASNY

COCH

ENDE

SPRUER

**IVANPAH SEGS PROJECT
NORTHERN GAS LINE**

PLANT RESTORATION SUCCESS

DATE:

BIOLOGISTS:

CH MAP FIG.4 Moving W to E, descending in elevation gradually.

NO	RARE ELEMENT	PLANT		IDENTIFICATION		PHOTOGRAPHS AND NOTES	SEE FORM
		ABSENT	PRESENT	STAKE	TAG		
82	COCH 17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
83	COCH 18	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
84	SPRUER SEED 9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
85	ASNY SEED 17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
86	ENDE SEED 9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
87	SPRUER SEED 8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
88	COCH SEED 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
89	COCH SEED 8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
90	ASNY SEED 16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
91	ENDE SEED 8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
92	COCH 19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
93	COCH 20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
ACCESS ROAD INTERSECTION							
94	SPRUER SEED 7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
95	COCH SEED 7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
96	ENDE SEED 7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
97	ASNY SEED 15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
98	GRPA 0043-10-001	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
99	SPRUER SEED 6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

ASNY

COCH

ENDE

SPRUER

ISEGS BIO-18 COMPLIANCE MONITORING

NORTHERN GAS LINE SPECIAL-STATUS PLANT PLANTING/SEEDING DATA SHEET

CREW:					DATE:							
SCIENTIFIC NAME:												
SEEDING PLANTING (UNIQUE ID): <small>example: COCH-1 (seeded)</small>					Elev (MSL) __ , __ __ __ ft							
GPS Data: UTM, NAD 83 Conus, Z11			N __ - - - - - . - - -		E __ - - - - - . - - -							
LOCATION DESCRIPTION (examples: north of Unit 3, in middle of NRPMA, on west side of NGL, etc.)												
Species Found?		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Species Dead?		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	
SEEDLING DATA												
Germination Observed? <small>(seeding sites)</small>		Yes	<input type="checkbox"/>	No	If no germination observed, explain: <small>(insufficient rain, incorrect season for this species, etc.)</small>							
% Cover Estimates <small>(within seeded area) (circle one)</small>		>75%		50-75%		25-50%		5-25%		<5%		<1% (trace)
TRANSPLANTED SPECIES DATA												
# Individuals =		vegetative:			in bud/flowering:			in fruit:		Total:		
Note the Microhabitat Data in seeded/planted area:												
Herbivory Present?		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	What species?						
Stake/tag need to be refreshed?												
Remedial actions needed? If so, explain?												
List other species observed:												
Other Comments:												

Appendix D
Density Calculations

TABLE D-1

Density of Mojave Milkweed by Project Element

Project Element	Project Feature (acres)	# of Plants Found (by Project Feature)	Plant Density (number of plants per acre)	Range of Plant Density Values in 8.4 acres	Target Number of Mojave Milkweed Plants to Reestablish (Goal)
CLA-1	37.3	24	0.64	5.40	
CLA-2	3.8	0	0.00	0.00	
NRPMA	433.4	14	0.03	0.27	
Unit 1	913.5	32	0.04	0.29	
Unit 2	1,096.7	5	0.00	0.04	
Unit 3	1,227.0	36	0.03	0.25	
NGL	8.4	0	0.00	0.00	
Average Density			0.11	0.89	
Number of Plants Expected in 8.4 acres (gas line corridor)				Range: 0 to 5.4 plants	
Target Number of Plants to Reestablish					5 plants

Notes:

Natural gas line corridor and tap station total 8.4 acres

Plant Census Data: 2007-2008 Rare Plant Surveys (GANDA, 2008)

TABLE D-2

Density of Desert Pincushion by Project Element

Project Element	Project Feature (acres)	# of Plants Found (by Project Feature)	Plant Density (number of plants per acre)	Range of Plant Density Values in 8.4 acres	Target Number of Desert Pincushion Plants to Reestablish (Goal)
CLA-1	37.3	7	0.19	1.58	
CLA-2	3.8	0	0.00	0.00	
NRPMA	433.4	70	0.16	1.36	
Unit 1	913.5	33	0.04	0.30	
Unit 2	1096.7	31	0.03	0.24	
Unit 3	1227.0	31	0.03	0.21	
NGL	8.4	2	0.24	2.00	
Average Density			0.10	0.81	
Number of Plants Expected in 8.4 acres (gas line corridor)				Range: 0 to 2 plants	
Target Number of Plants to Reestablish					2 plants

Notes:

Natural gas line corridor and tap station total 8.4 acres

Plant Census Data: 2007-2008 Rare Plant Surveys (GANDA, 2008)

TABLE D-3

Density of Rusby's Desert Mallow by Project Element

Project Element	Project Feature (acres)	# of Plants Found (by Project Feature)	Plant Density (number of plants per acre)	Range of Plant Density Values in 8.4 acres	Target Number of Rusby's Desert Mallow Plants to Reestablish (Goal)
CLA-1	37.3	0	0.000	0.00	
CLA-2	3.8	0	0.000	0.00	
NRPMA	433.4	1	0.002	0.02	
Unit 1	913.5	1	0.001	0.01	
Unit 2	1096.7	1	0.001	0.01	
Unit 3	1227.0	1	0.001	0.01	
NGL	8.4	0	0.000	0.00	
Average Density			0.001	0.01	
Number of Plants Expected in 8.4 acres (gas line corridor)				Range: 0 to 0.2 plant	
Target Number of Plants to Reestablish					1 plant

Notes:

Natural gas line corridor and tap station total 8.4 acres

Plant Census Data: 2007-2008 Rare Plant Surveys (GANDA, 2008)

TABLE D-4

Density of Parish's Club-cholla by Project Element

Project Element	Project Feature (acres)	# of Plants Found (by Project Feature)	Plant Density (number of plants per acre)	Range of Plant Density Values in 8.4 acres	Target Number of Parish's Club-cholla Plants to Reestablish (Goal)
CLA-1	37.3	13	0.35	2.93	
CLA-2	3.8	1	0.27	2.24	
NRPMA	433.4	0	0.00	0.00	
Unit 1	913.5	65	0.07	0.60	
Unit 2	1096.7	0	0.00	0.00	
Unit 3	1227.0	0	0.00	0.00	
NGL	8.4	0	0.00	0.00	
Average Density			0.10	0.82	
Number of Plants Expected in 8.4 acres (gas line corridor)				Range: 0 to 2.9 plants	
Target Number of Plants to Reestablish					3 plants

Notes:

Natural gas line corridor and tap station total 8.4 acres

Plant Census Data: 2007-2008 Rare Plant Surveys (GANDA, 2008)

TABLE D-5

Density of Nine-awned Pappus Grass by Project Element

Project Element	Project Feature (acres)	# of Plants Found (by Project Feature)	Plant Density (number of plants per acre)	Range of Plant Density Values in 8.4 acres	Target Number of Nine-awned Pappus Grass Plants to Reestablish (Goal)
CLA-1	37.3	431	11.55	97.06	
CLA-2	3.8	13	3.46	29.08	
NRPMA	433.4	877	2.02	17.00	
Unit 1	913.5	140	0.15	1.29	
Unit 2	1096.7	0	0.00	0.00	
Unit 3	1227.0	124	0.10	0.85	
NGL	8.4	98	11.72	98.45	
Average Density			4.14	34.82	
Number of Plants Expected in 8.4 acres (gas line corridor)				Range: 0 to 98 plants	
Target Number of Plants to Reestablish					98 plants

Notes:

Natural gas line corridor and tap station total 8.4 acres

Plant Census Data: 2007-2008 Rare Plant Surveys (GANDA, 2008)

Appendix L-1

Condition of Certification BIO-18

**Mojave Milkweed Land Acquisition
(Hudgen's Parcel) Annual Report**

ISEGS BIO-18 Mojave Milkweed Land Acquisition Annual Report for 2015

PREPARED FOR: Doug Davis/NRG
 COPY TO: CH2M Project File
 PREPARED BY: Morgan King/CH2M
 DATE: December 16, 2015
 PROJECT NUMBER: 660711

Introduction

As required by the Ivanpah Solar Electric Generating System (ISEGS) Commission Decision, Solar Partners' acquired the Hudgens parcel to mitigate the loss of Mojave milkweed (*Asclepias nyctaginifolia*) habitat. Condition BIO-18, measure 11 requires that the project owner acquire, "in fee or in easement, a parcel or parcels of land that includes at least 30 acres supporting a viable occurrence of Mojave milkweed . . ." The parcel also meets the BIO-17, measure 2 selection criteria by being an in-holding within the National Park Service's (NPS) managed Mojave National Preserve and it is near, approximately 21 miles southeast of, ISEGS (Figure 1, inset).

Solar Partners provided security for the acquisition but NPS has not yet taken ownership or management of the parcel. Upon transfer of the Hudgens parcel to NPS, the Solar Partners will have met all Mojave milkweed land acquisition compliance requirements in BIO-17 and BIO-18.

This report documents the results of the 2015 Hudgens parcel inspection.

Results

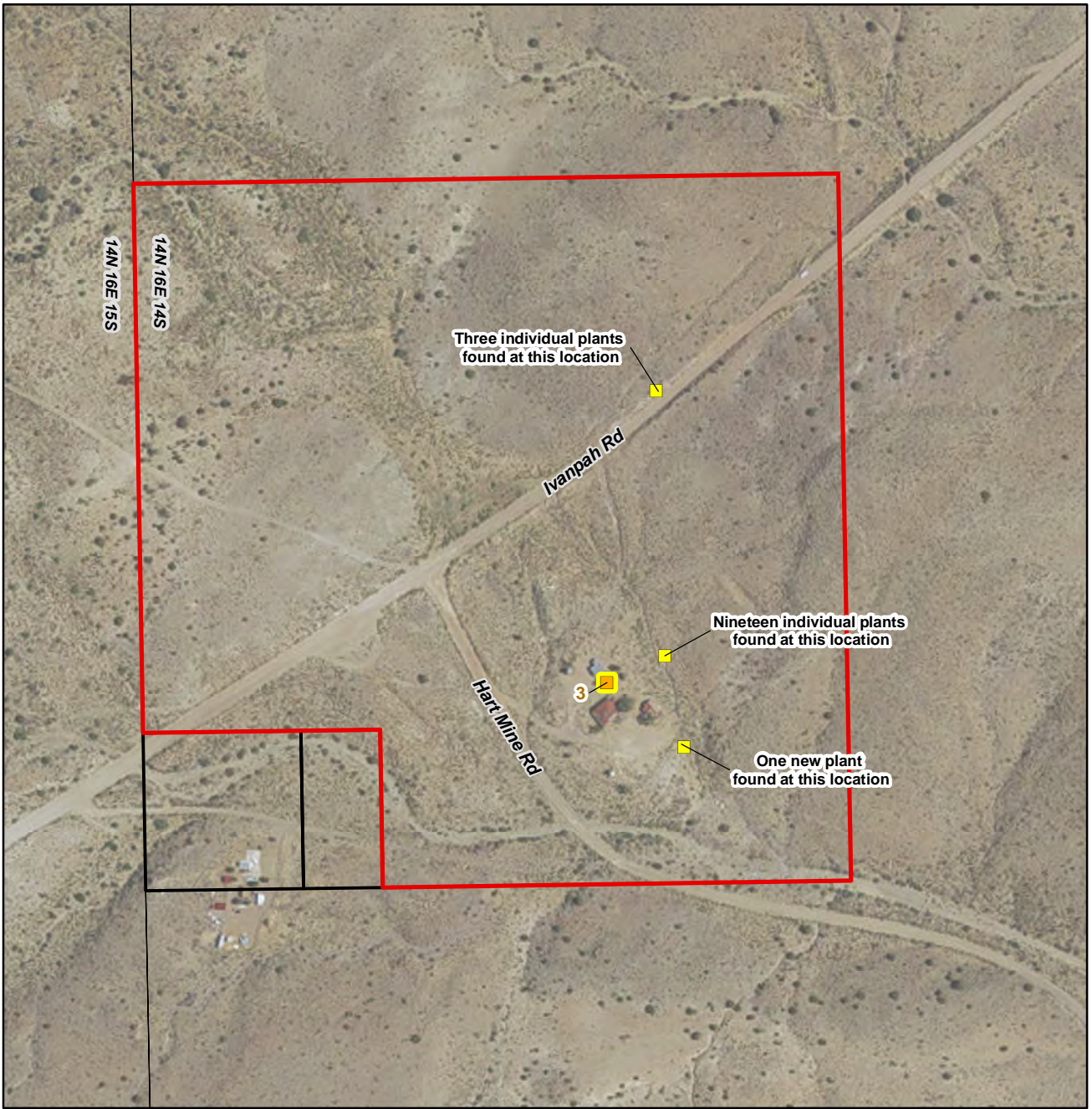
On August 8, 2015, a CH2M qualified botanist visited the Hudgens parcel to document status of Mojave milkweed and identify any unauthorized disturbance. In 2012, CH2M botanists had located five Mojave milkweed individuals at two localities (California Natural Diversity Database, Element Occurrence 3). In 2015, CH2M HILL botanists located 23 Mojave milkweed individuals at three localities (Figure 1). In 2015, 18 additional plants were observed including one individual at a new locality (Table 1; Photos 1 through 6). No unauthorized disturbance was observed in 2015.

TABLE 1. Mojave Milkweed Observed at Hudgens Parcel

Location	Number located in 2012	Number located in 2015
North of Ivanpah Road	1	3
East of buildings in ephemeral drainage	4	19
Southeast of buildings in ephemeral drainage	0	1
TOTALS	5	23

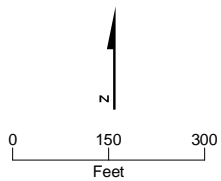
Summary

The Hudgens parcel Mojave milkweed population is thriving, as seen by increase in total individuals and a new locality. No unauthorized disturbance was observed.



LEGEND

- Mojave Milkweed 2015 Survey Location
- Database or Other Information Sources
- CNDDDB Element Occurrence (EO)
- Mojave milkweed
- Hudgens Property
- Private Land Parcel



VICINITY MAP

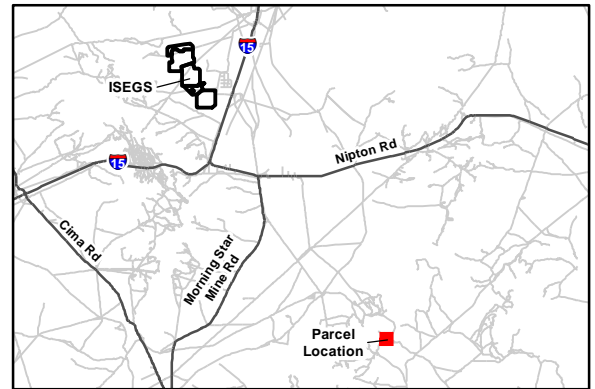


FIGURE 1
Mojave Milkweed Locations at Hudgens Parcel
 2015 Annual Report
Ivanpah Solar Electric Generating System



Photos 1 and 2. Close-up and overview of three Mojave Milkweed north of Ivanpah Road.



Photos 3 and 4. Close-up and overview of nineteen Mojave Milkweed located east of buildings in ephemeral drainage.



Photos 5 and 6. Close-up and overview of a new locality of Mojave Milkweed (one individual) located southeast of buildings downstream in same ephemeral drainage from the other population.

Appendix M

Condition of Certification BIO-19

**SCBS Nelson's Bighorn Sheep
Annual Report**



NRG Ivanpah Solar Thermal Power Plant
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

January 25, 2016

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C)
Big Horn Sheep Mitigation Plan Society For Conservation for the Conservation of Bighorn Sheep (SCBS) Annual Report, to fulfill California Energy Commission Conditions of Certification, BIO-19


Dear Mr. Douglas and Mr. Ahrens,

In accordance with the requirements of Section 3.3 of the Big Horn Sheep Mitigation Plan, of the Conditions of Certification BIO-19 of the Commission's approval of the Ivanpah Solar Electric Generating System, the SCBS will provide to the project owner an annual report no later than January 15th of each year, and the project owner will provide to the CEC and BLM the annual report no later than January 31st of each year.

We are unable to provide the annual report from the Society for the Conservation of Bighorn Sheep (SCBS) as required by the above-stated Condition in this report, because we have not had a response from SCBS, in spite of our repeated requests. However, we are continuing to reach out to SCBS for this information and will fulfill this Condition by providing a separate submittal as soon as this information is made available to us.

Please feel free to contact me with any questions.

Thank you.


William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364



NRG Ivanpah Solar Thermal Power Plant
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

CC: Doug Davis, NRG, Ivanpah
Mitch Samuelian, NRG, Ivanpah
Tim Sisk, NRG
Document Control Specialist – NRG.

Appendix N

Condition of Certification BIO-20

**Streambed Impact Minimization Measure
Change of Condition Report**



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

December 31, 2015

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C)
Streambed Impact Minimization and Compensation Measures – Notifying Change of Conditions Report
to fulfill California Energy Commission Conditions of Certification, BIO-20

Dear Mr. Douglas and Mr. Ahrens,

In accordance with the requirements of Conditions of Certification BIO-20 of the Commission's approval of the Ivanpah Solar Electric Generating System, a copy of the notifying change of conditions report shall be included in the annual reports.

The notifying change of conditions report was included in the Annual Biological Report, Appendix D.

Thank you.


William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364

CC: Doug Davis, NRG
Tim Sisk, NRG
Mitch Samuelian, NRG
Document Control Specialist – NRG.

Exhibit 5

Hazardous Materials Conditions of Certifications

Appendix O

Condition of Certification HAZ-01

List of Hazardous Materials Contained in ISEGS Facility

LIST OF HAZARDOUS MATERIALS CONTAINED AT ISEGS FACILITY

In accordance with the requirements of the Conditions of Certification HAZ-01 of the Commission's approval of the Ivanpah Solar Electric Generating System (07-AFC-5C), the project owner shall provide to BLM's Authorized Officer and the CPM in the Annual Compliance Report a list of hazardous material contained at the facility.

Table 1 indicates the list of Hazardous Materials contained and currently in use at the ISEGS facility based on Table 5 Hazardous Materials for Use at ISEGS from the Ivanpah Solar Electric Generating System Environmental Procedures Operations Management Plan.

Table 1 - List of Chemicals Contained at ISEGS Facility (2015)

Common Name	Chemical Name	Chemical Location	CAS Number	Largest Container	Maximum Quantity	Units	Application
Ammonium Hydroxide	Ammonium Hydroxide	Power Block 1, 2, & 3 Injection Skids and West side parking lots (spares)	1336-21-6	300	1,800	gallons	Used for pH control on the condensate and feed water systems.
Mineral Oil	Mineral Oil	Power Block Transformers/Switchyards, Solar Field Transformers, Admin Building and HAB Transformers	8012-95-1	9,900	57,445	gallons	Insulating oil used for transformers
Lubricating oil	Turbinas EP 32 (Turbine Oil)	Power Block STG Lube Oil System, Boiler Feed Pump Turbine, Startup Boiler Feed Pump, Emergency Generators, Diesel fire pumps and Chemical Storage Areas	64742-54-7	5,800	29,083	gallons	Lubricate rotating equipment (e.g., steam turbine bearings)
Lead Acid Batteries	Lead	Power Block PSB/Battery Rooms, SRS - UPS EEM Battery Rooms, Admin. Bldg Battery Room, Emergency Generator Enclosures, Diesel Fire Pump Enclosures	7439-92-1	727	311,348	pounds	Back-up power / electrical
Lead Acid Batteries	Sulfuric Acid	Power Block PSB/Battery Rooms, SRS - UPS EEM Battery Rooms, Admin. Bldg Battery Room, Emergency Generator Enclosures, Diesel Fire Pump Enclosures	7664-93-9	145	52,849	pounds	Back-up power / electrical
Sodium Hypochlorite	Sodium Hypochlorite	Units 1, 2 & 3 and Administration Building WSAC Chemical Skid	7681-52-9	275	1,100	gallons	Potable water treatment and WSAC oxidizer
Polypropylene glycol	Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-	Contained as a mixture in the WSAC reservoir tank in Units 1, 2 & 3	25322-69-4	800	2,400	gallons	Propylene glycol is in mixture with water in the WSAC system.
Polypropylene glycol	Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-	Satellite Accumulation Storage Areas Units 1,2,3; Hazardous Waste Storage Areas - HAB	25322-69-4	55	385	gallons	Waste propylene glycol for disposal
Sodium carbonate in Solution	Carbonic acid sodium salt (1:2)	Units 1, 2 & 3 WSAC Chemical Skid	497-19-8	300	900	gallons	Soda Ash solution is used in the WSAC chemistry
Nalco 73801WR (Corrosion Inhibitor)	Sodium Tolytriazole	Units 1, 2 & 3 WSAC Chemical Skid	64665-57-2	275	825	gallons	Corrosion inhibitor used in the WSAC system
Diesel Fuel No. 2	Diesel Fuel No. 2	Units 1, Unit 2, Unit 3 and Admin. Building Emergency and Fire Pump Generators	68476-34-6	840	3,565	gallons	Fuel for Emergency Generators and Fire Pump engines
Sulfur Hexafluoride	Sulfur Hexafluoride	Units 1, 2, & 3 Power Block Switchgear assemblies	2551-62-4	73	403	pounds	Used in switchyard/switchgear devices
Heptafluoropropane - HFC 227	1,1,1,2,3,3,3-Heptafluoropropane	Power Block PSB & Administration Building	431-89-0	475	8,485	pounds	Fire/explosion extinguishing, suppression and prevention agent
Acetylene	Acetylene	HelioStat Assembly Building	74-86-2	130	910	cu. feet	Used for welding/cutting metals
Air Compressed	Air	HelioStat Assembly Building	132259-10-0	218	436	cu. feet	used for remote tools
Argon Compressed	Argon Compressed	HelioStat Assembly Building	7440-37-1	336	6,048	cu. feet	Used for welding
Carbon Dioxide	Carbon Dioxide	Units 1, 2 & 3 Power Block Emergency Generator Enclosure	124-38-9	180	1,620	cu. feet	Fire suppression
Helium	Helium	HelioStat Assembly Building	7440-59-7	218	1,744	cu. feet	For leak detection
Liquefied Petroleum Gas (lpg)	Propane	HelioStat Assembly Building & Administration Building	74-98-6	22	528	pounds	Used as fuel for equipment
Nitrogen	Nitrogen	HelioStat Assembly Building	7727-37-9	304	12,160	cu. feet	Used for purging gas systems
Oxygen	Oxygen	HelioStat Assembly Building	7782-44-7	251	5,020	cu. feet	Used for welding/cutting metals
Oily Debris - Hazardous Waste	Oily Debris	Satellite Accumulation Storage Areas Units 1,2,3; Hazardous Waste Storage Areas - HAB	70514-12-4	55	440	gallons	Waste - for disposal
Lubricating oils, used	Used lubricating oils	Satellite Accumulation Storage Areas Units 1,2,3; Hazardous Waste Storage Area - HAB	70514-12-4	55	440	gallons	Waste - for disposal

Appendix P

Condition of Certification HAZ-05

**Operations Security Plan
Background Investigations for All
Employees and Contractors**

Affidavit of Compliance for Contractors by Project Owners

I, William Dusenbury, General Manager

(Name of Person signing Affidavit and Title)

do hereby certify that all Contractors who are approved to work at Ivanpah Solar Electric Generating Facility have gone through NRG energy internal approval process "Adopt-one"

for contract work at

Ivanpah Solar Electric Generating Facility

(Project Name and location)

have been conducted as required by the U.S. Bureau of Land Management Right-of-Way and California Energy Commission Decision for the above-named project.

Will R. Dusenbury

(Signature of Officer or Agent)

Dated this 2 day of DECEMBER, 2015.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY BLM'S AUTHORIZED OFFICER AND THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

Affidavit of Compliance for Project Owners

I, William Dusenbury, General Manager

(Name of Person signing Affidavit and Title)

do hereby certify that background investigations to ascertain accuracy of the identity and employment history of all employees of

NRG Energy Services

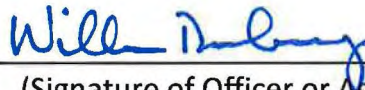
(Company Name)

for employment at

Ivanpah Solar Electric Generating Facility

(Project Name and location)

have been conducted as required by the U.S. Bureau of Land Management Right-of-Way and California Energy Commission Decision for the above-named project.



(Signature of Officer or Agent)

Dated this 2 day of DECEMBER, 2015.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY BLM'S AUTHORIZED OFFICER AND THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.



an NRG service

ESH Department
NRG Ivanpah Solar Thermal Power Plant
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2012 Fax: 702-815-2030

December 1, 2015

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 9236

RE: Ivanpah Solar Electric Generating System (07-AFC-5C) Operation Security Plan Project Owner Statement Pertaining to All Current Employee and Contractor Background Investigation to fulfill California Energy Commission Conditions of Certification, HAZ-5

Dear Mr. Douglas and Mr. Ahrens,

In accordance with the requirements of Conditions of Certification HAZ-5 of the Commission's approval of the Ivanpah Solar Electric Generating System, we are providing the following statement as a requirement in the Annual Compliance Report:

All current NRG employees undergo full background investigations as required in NRG hiring process. All contractors (vendors) who provide services to the project/facility go through pre-qualification process and NRG internal approval process, "Adopt-one". The certification statements are appended in the Operations Security Plan.

William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road,
Nipton, CA – 92364



an NRG service

ESH Department

NRG Ivanpah Solar Thermal Power Plant
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2012 Fax: 702-815-2030

CC: Doug Davis, NRG
Tim Sisk, NRG
Mitch Samuelian, NRG
Document Control Specialist – NRG.



an NRG service

NRG Ivanpah Solar Thermal Power Plant
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2012 Fax: 702-815-2030

December 1, 2015

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 9236

RE: Ivanpah Solar Electric Generating System (07-AFC-5C) Project Owner Statement Pertaining to Operations Security Plan Includes Hazardous Materials Transport Vendor Certifications for Security Plans and Employee Background Certifications to fulfill California Energy Commission Conditions of Certification, HAZ-5

Dear Mr. Douglas and Mr. Ahrens,

In accordance with the requirements of Conditions of Certification HAZ-5 of the Commission's approval of the Ivanpah Solar Electric Generating System, we are providing the following statement as a requirement in the Annual Compliance Report:

ISEGS Operations do not transport hazardous materials. Hazardous wastes generated on site are transported to the TDSF (Treatment Storage and Disposal Facility) by the approved vendor. The vendor certification and employee background certifications are appended in the Operations Security Plan.

William Dusenbury

A handwritten signature in blue ink that reads "Will Dusenbury". The signature is written in a cursive, flowing style.

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road,
Nipton, CA – 92364



an NRG service

NRG Ivanpah Solar Thermal Power Plant

100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364

Ph: 702-815-2012 Fax: 702-815-2030

CC: Doug Davis, NRG
Tim Sisk, NRG
Mitch Samuelian, NRG
Document Control Specialist – NRG.

Exhibit 6

Land Use and Recreation Conditions of Certification

Appendix Q

**Conditions of Certification
LAND-03 & REC-01**

**Solar/Ecological Interpretive
Center Annual Report**



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

December 31, 2015

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C) / Bureau of Land Management (CACA-055108)
Summary of Estimated Public Use of Solar/Ecological Interpretive Center and Issues Associated with
Operating and Maintenance Activities, to fulfill California Energy Commission Conditions of
Certification, LAND-03 and RECREATION-01

Dear Mr. Douglas and Mr. Ahrens,

Pursuant to the requirements of Conditions of Certification LAND-03 and RECREATION-01 of the
Commission's approval of the Ivanpah Solar Electric Generating System, we are providing the following
information as a requirement in the Annual Compliance Report:

*As a mitigation measure of the ISEGS project, Solar Partners I, II, and VIII LLCs, constructed the
Solar/Ecological Interpretive Center (SEIC) in the vicinity of the ISEGS project for users of the Ivanpah Dry
Lake Recreational Area with picnic facilities, restrooms, and information kiosks describing the nearby
solar facilities and the surrounding ecology, thereby increasing public understanding and awareness of
these resources. The SEIC facility comprised of two separate sites covering a total of 4.59 acres and
located approximately 3.95 miles and 4.7 miles, respectively, from the eastern border of the ISEGS
project. The first site; the Cooperative Kiosks, located on a 1.3 acre site on the California side of Stateline
Road, includes a small parking area and information kiosks. The second site; the Interpretive Center, a
3.29 acre site located on the eastern edge of the Ivanpah Dry Lakebed, includes a slightly larger parking
area, a paved picnic area with roofed shade structure, and an ADA-compliant contained restroom facility
including interpretive kiosks and paved walkways.*

*The construction of the Solar/Ecological Interpretive Center commenced on January 19, 2015 and was
completed on April 17, 2015. BLM representative inspected and accepted the constructed facility on May
13, 2015. The California Energy Commission has confirmed that the requirements of COC LAND-03 and
REC-01 have been completed on May 19, 2015.*



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

Moreover, as part of COC LAND-03 and REC-01 Verification, the project owner shall provide a summary of estimated public use of the Solar / Ecological Interpretive Center and summarize any issues associated with operating and maintenance activities in each Annual Compliance Report. Since BLM's acceptance of the constructed SEIC facility on May 13, 2015, ISEGS has transferred ownership of the facility to BLM including operations and maintenance activities. ISEGS has no longer have jurisdiction of the facility; therefore, we are unable to provide information on annual estimated public use or issues related to operations and maintenance activities on this report and on future reports.

Although the facility has been accepted by BLM, ISEGS is coordinating with BLM to finalize the information that will be posted into the kiosks. We anticipate that this work will be completed during the first quarter of 2016. Once completed, ISEGS responsibility to the facility has been fulfilled.

Please feel free to contact me with any questions.

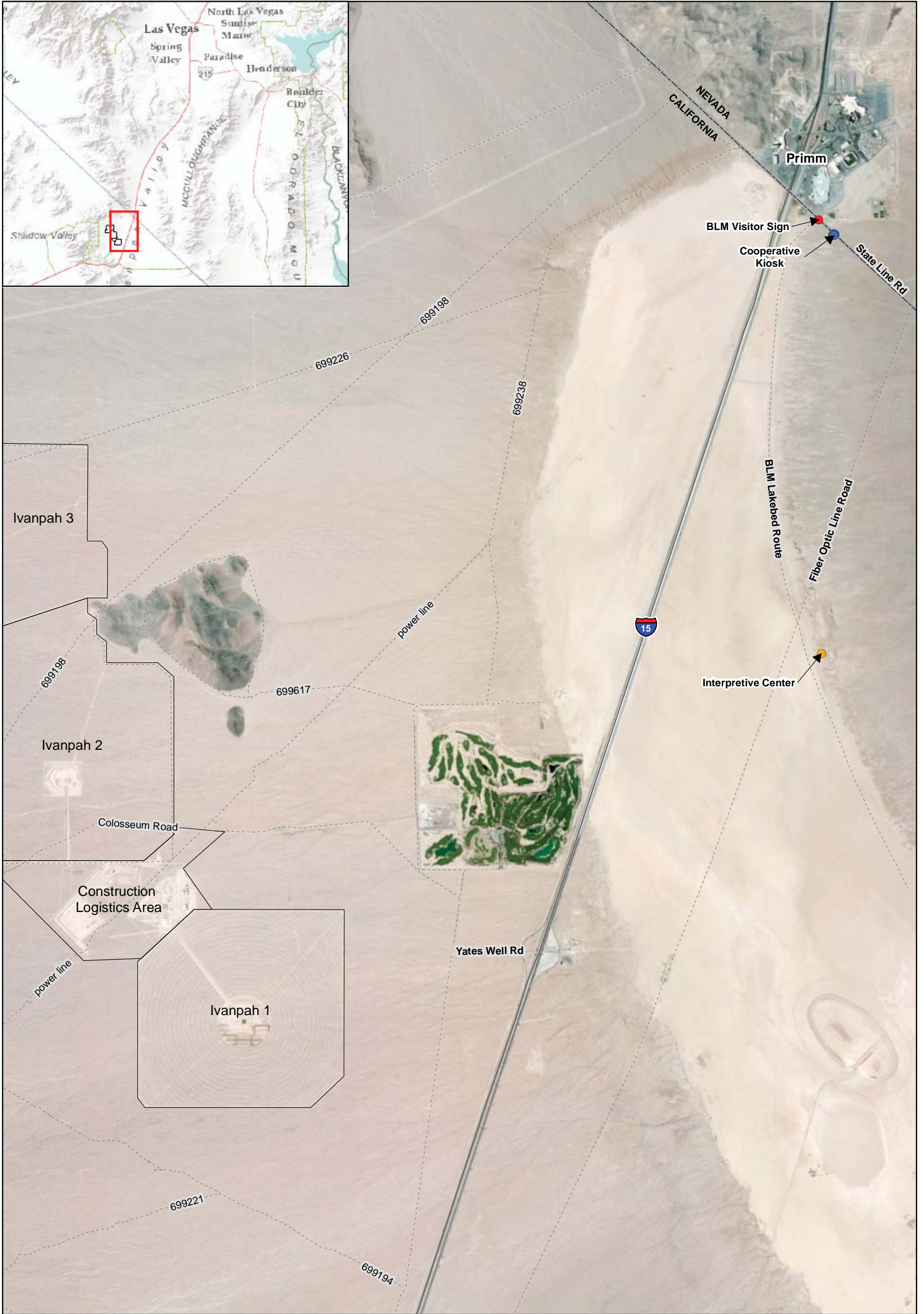
Thank you.

A handwritten signature in black ink that reads "William Dusenbury". The signature is written in a cursive style with a large, stylized "W" and "D".

William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364

CC: Doug Davis, NRG, Ivanpah
Mitch Samuelian, NRG, Ivanpah
Tim Sisk, NRG
Document Control Specialist – NRG.



- LEGEND**
- BLM Visitor Sign
 - Cooperative Kiosk
 - Interpretive Center
 - Local Roads and Trails
 - ▭ ISEGS Boundary
 - ▭ State Boundary

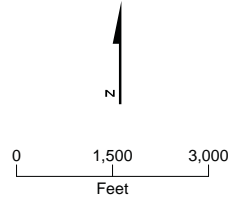
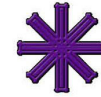


FIGURE 1
Overview Map
 Solar/Ecological Interpretive Center Project
 Ivanpah Solar Electric Generating System
CH2MHILL



LEGEND

Total Acreage: 1.3 Acres

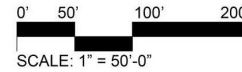


5 Information Kiosks

- 1- BLM
- 2- San Bernardino
- 3- Solar Partners
- Space for 2 additional spaces



Railroad Tie - Post and Cable Fence



KEY MAP: NTS

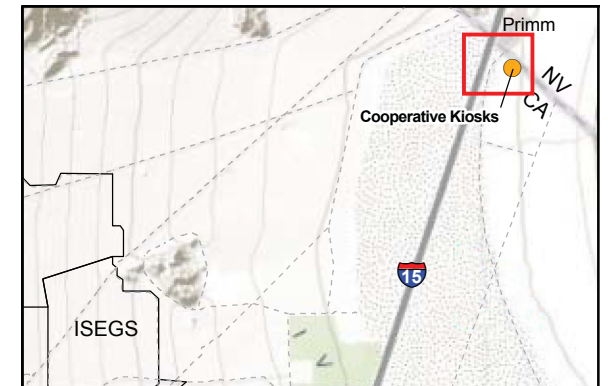
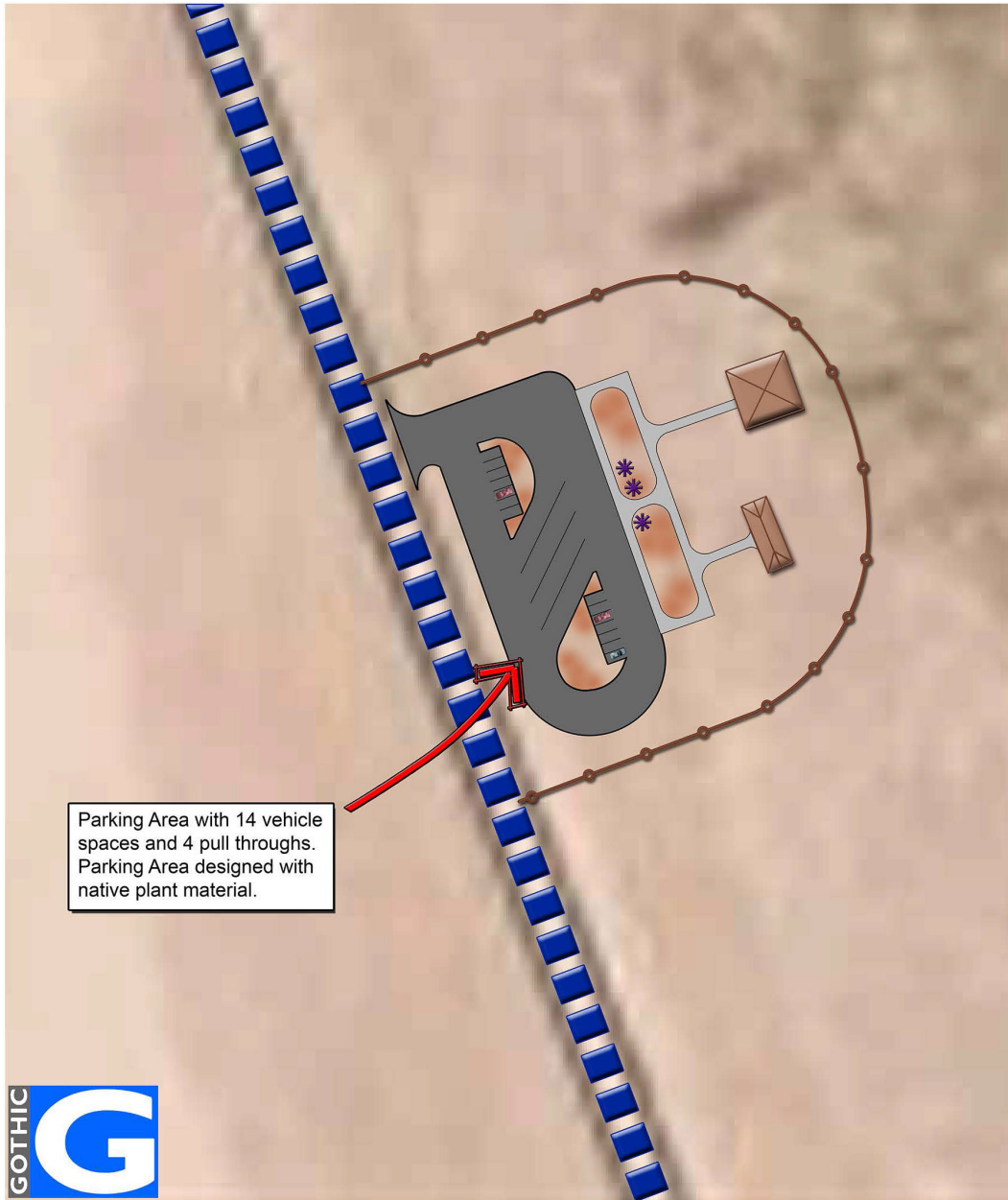


FIGURE 2





Cooperative Kiosks

Solar/Ecological Interpretive Center Project

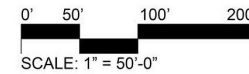
Ivanpah Solar Electric Generating System



LEGEND

-  Railroad Tie - Post and Cable Fence
-  Restroom Facility
-  Group Picnic Area- with 8 rectangular picnic tables
-  3 Information Kiosks
 - 1- BLM
 - 2- San Bernardino
 - 3- Solar Partners

Total Acreage: 3.29 Acres



KEY MAP: NTS

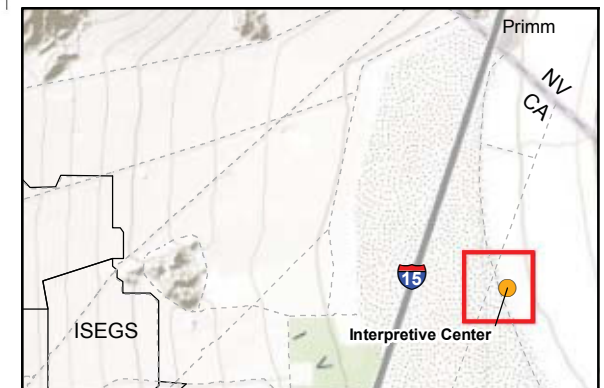


FIGURE 4
Interpretive Center
Solar/Ecological Interpretive Center Project
 Ivanpah Solar Electric Generating System

Exhibit 7

Soil & Water Conditions of Certification

Appendix R

Condition of Certification S&W-01

**Storm Water BMP Monitoring and
Maintenance Activities Report**

**Ivanpah Solar Electric Generating System
California Energy Commission (07-AFC-5C)
Bureau of Land Management
(CACA-48668, 49502, 49503, and 49504)
Conditions of Certification Soil & Water-01**

**January 1, 2015 – December 31, 2015
Reporting Period
Submitted
January 31, 2016**

**Prepared by: Designated Biologist on behalf of Solar Partners I, II, VIII LLC
100302 Yates Well Road
Nipton, CA 92364**

In accordance with the requirements of the Conditions of Certification SOIL & WATER-01 of the Commission’s approval of the Ivanpah Solar Electric Generating System (07-AFC-5C), the project owner shall provide in the annual compliance report, information on the results of storm water best management practices (BMP) monitoring and maintenance activities.

Table 1 outlines the repairs performed during 2015 to SWPPP BMP at ISEGS.

Table 1: Storm Water Pollution Prevention Plan BMP Repairs

Date	Description
5/6/2015	Remove debris and perform repairs
5/7/2015	Remove debris and perform repairs
5/8/2015	Remove debris and perform repairs
5/11/2015	Remove debris and perform repairs
5/12/2015	Remove debris and perform repairs
7/7/2015	Remove debris and perform repairs
7/8/2015	Remove debris and perform repairs
7/9/2015	Remove debris and perform repairs
8/17/2015	Remove debris and perform repairs
8/18/2015	Remove debris and perform repairs
8/19/2015	Remove hay bales, straw wattles, sand bags and debris. Install new sand bags along Colosseum Road
8/20/2015	Remove hay bales, straw wattles, sand bags and debris. Install new sand bags along Colosseum Road
8/21/2015	Remove hay bales, straw wattles, sand bags and debris. Install new sand bags along Colosseum Road
8/22/2015	Remove hay bales, straw wattles, sand bags and debris. Install new sand bags along Colosseum Road
8/23/2015	Remove hay bales, straw wattles, sand bags and debris. Install new sand bags along Colosseum Road
8/24/2015	Remove hay bales, straw wattles, sand bags and debris. Install new sand bags along Colosseum Road
8/25/2015	Remove hay bales, straw wattles, sand bags and debris. Install new sand bags along Colosseum Road
8/31/2015	Remove debris and perform repairs
9/1/2015	Remove debris and perform repairs

Appendix S

Condition of Certification S&W-02

**Storm Water Pollution Prevention Plan
Annual Report**

State of California
STATE WATER RESOURCES CONTROL BOARD

2014

2015

ANNUAL REPORT
FOR
STORM WATER DISCHARGES ASSOCIATED
WITH INDUSTRIAL ACTIVITIES

Reporting Period July 1, 2014 through June 30, 2015

An annual report is required to be submitted to your local Regional Water Quality Control Board (Regional Board) by July 1 of each year. This document must be certified and signed, under penalty of perjury, by the appropriate official of your company. Many of the Annual Report questions require an explanation. Please provide explanations on a separate sheet as an attachment. **Retain a copy of the completed Annual Report for your records.**

Please circle or highlight any information contained in Items A, B, and C below that is new or revised so we can update our records. Please remember that a Notice of Termination and new Notice of Intent are required whenever a facility operation is relocated or changes ownership.

If you have any questions, please contact your Regional Board Industrial Storm Water Permit Contact. The names, telephone numbers and e-mail addresses of the Regional Board contacts, as well as the Regional Board office addresses can be found at <http://www.swrcb.ca.gov/stormwtr/contact.html>. To find your Regional Board information, match the first digit of your WDID number with the corresponding number that appears in parenthesis on the first line of each Regional Board office.

GENERAL INFORMATION:

A. Facility Information:

Facility Business Name: ISEGS
Physical Address: 100302 Yates Well Road
City: Nipton
SIC Code(s): 4911-Electric Services

Facility WDID No: 6B36I024279

Contact Person: Shankara Babu
e-mail: _____
CA Zip: 92364 Phone: 702-815-2016

B. Facility Operator Information:

Operator Name: NRG EnergyServices LLC
Mailing Address: 100302 Yates Well Road
City: Nipton

Contact Person: Shankara Babu
e-mail: _____
State: CA Zip: 92364 Phone: 702-815-2016

C. Facility Billing Information:

Operator Name: _____
Mailing Address: _____
City: _____

Contact Person: _____
e-mail: _____
State: ____ Zip: _____ Phone: _____

ANNUAL REPORT

SPECIFIC INFORMATION

MONITORING AND REPORTING PROGRAM

D. SAMPLING AND ANALYSIS EXEMPTIONS AND REDUCTIONS

1. For the reporting period, was your facility exempt from collecting and analyzing samples from **two** storm events in accordance with sections B.12 or 15 of the General Permit?

YES Go to Item D.2

NO Go to Section E

2. Indicate the reason your facility is exempt from collecting and analyzing samples from **two** storm events. Attach a copy of the first page of the appropriate certification if you check boxes ii, iii, iv, or v.

i. Participating in an Approved Group Monitoring Plan **Group Name:** _____

ii. Submitted **No Exposure Certification (NEC)** **Date Submitted:** _____
Re-evaluation Date: _____

Does facility continue to satisfy NEC conditions? **YES** **NO**

iii. Submitted **Sampling Reduction Certification (SRC)** **Date Submitted:** _____
Re-evaluation Date: _____

Does facility continue to satisfy SRC conditions? **YES** **NO**

iv. Received Regional Board Certification **Certification Date:** _____

v. Received Local Agency Certification **Certification Date:** _____

3. If you checked boxes i or iii above, were you scheduled to sample **one** storm event during the reporting year?

YES Go to Section E

NO Go to Section F

4. If you checked boxes ii, iv, or v, go to Section F.

E. SAMPLING AND ANALYSIS RESULTS

1. How many storm events did you sample? 0 If less than 2, **attach explanation** (if you checked item D.2.i or iii. above, only attach explanation if you answer "0").

2. Did you collect storm water samples from the first storm of the wet season that produced a discharge during scheduled facility operating hours? (Section B.5 of the General Permit)

YES

NO, attach explanation (Please note that if you do not sample the first storm event, you are still required to sample 2 storm events)

3. How many storm water discharge locations are at your facility? 4

4. For each storm event sampled, did you collect and analyze a sample from each of the facility's storm water discharge locations? YES, go to Item E.6 NO
5. Was sample collection or analysis reduced in accordance with Section B.7.d of the General Permit? NO YES, **attach explanation**
- If "YES", **attach documentation** supporting your determination that two or more drainage areas are substantially identical.
- Date facility's drainage areas were last evaluated 06/09/2015
6. Were all samples collected during the first hour of discharge? YES NO, **attach explanation**
7. Was all storm water sampling preceded by three (3) working days without a storm water discharge? YES NO, **attach explanation**
8. Were there any discharges of stormwater that had been temporarily stored or contained? (such as from a pond) YES NO, go to Item E.10
9. Did you collect and analyze samples of temporarily stored or contained storm water discharges from two storm events? (or one storm event if you checked item D.2.i or iii. above) YES NO, **attach explanation**
10. Section B.5. of the General Permit requires you to analyze storm water samples for pH, Total Suspended Solids (TSS), Specific Conductance (SC), Total Organic Carbon (TOC) or Oil and Grease (O&G), other pollutants likely to be present in storm water discharges in significant quantities, and analytical parameters listed in Table D of the General Permit.
- a. Does Table D contain any additional parameters related to your facility's SIC code(s)? YES NO, Go to Item E.11
- b. Did you analyze all storm water samples for the applicable parameters listed in Table D? YES NO
- c. If you did not analyze all storm water samples for the applicable Table D parameters, check one of the following reasons:
- _____ In prior sampling years, the parameter(s) have not been detected in significant quantities from two consecutive sampling events. **Attach explanation**
- _____ The parameter(s) is not likely to be present in storm water discharges and authorized non-storm water discharges in significant quantities based upon the facility operator's evaluation. **Attach explanation**
- _____ Other. **Attach explanation**
11. For each storm event sampled, attach a copy of the laboratory analytical reports and report the sampling and analysis results using **Form 1** or its equivalent. The following must be provided for each sample collected:
- Date and time of sample collection
 - Name and title of sampler.
 - Parameters tested.
 - Name of analytical testing laboratory.
 - Discharge location identification.
 - Testing results.
 - Test methods used.
 - Test detection limits.
 - Date of testing.
 - Copies of the laboratory analytical results.

F. QUARTERLY VISUAL OBSERVATIONS

1. **Authorized Non-Storm Water Discharges**

Section B.3.b of the General Permit requires quarterly visual observations of all authorized non-storm water discharges and their sources.

a. Do authorized non-storm water discharges occur at your facility?

YES **NO** Go to Item F.2

b. Indicate whether you visually observed all authorized non-storm water discharges and their sources during the quarters when they were discharged. **Attach an explanation for any "NO" answers.** Indicate "N/A" for quarters without any authorized non-storm water discharges.

July -September **YES** **NO** **N/A** October-December **YES** **NO** **N/A**
 January-March **YES** **NO** **N/A** April-June **YES** **NO** **N/A**

c. Use **Form 2** to report quarterly visual observations of authorized non-storm water discharges or provide the following information.

- i. name of each authorized non-storm water discharge
- ii. date and time of observation
- iii. source and location of each authorized non-storm water discharge
- iv. characteristics of the discharge at its source and impacted drainage area/discharge location
- v. name, title, and signature of observer
- vi. **any** new or revised BMPs necessary to reduce or prevent pollutants in authorized non-storm water discharges. Provide new or revised BMP implementation date.

2. **Unauthorized Non-Storm Water Discharges**

Section B.3.a of the General Permit requires quarterly visual observations of all drainage areas to detect the presence of unauthorized non-storm water discharges and their sources.

a. Indicate whether you visually observed all drainage areas to detect the presence of unauthorized non-storm water discharges and their sources. **Attach an explanation for any "NO" answers.**

July -September **YES** **NO** **N/A** October-December **YES** **NO** **N/A**
 January-March **YES** **NO** **N/A** April-June **YES** **NO** **N/A**

b. Based upon the quarterly visual observations, were any unauthorized non-storm water discharges detected?

YES **NO** Go to item F.2.d

c. Have each of the unauthorized non-storm water discharges been eliminated or permitted?

YES **NO** **Attach explanation**

d. Use **Form 3** to report quarterly unauthorized non-storm water discharge visual observations or provide the following information.

- i. name of each unauthorized non-storm water discharge.
- ii. date and time of observation.
- iii. source and location of each unauthorized non-storm water discharge.
- iv. characteristics of the discharge at its source and impacted drainage area/discharge location.
- v. name, title, and signature of observer.
- vi. **any** corrective actions necessary to eliminate the source of each unauthorized non-storm water discharge and to clean impacted drainage areas. Provide date unauthorized non-storm water discharge(s) was eliminated or scheduled to be eliminated.

G. MONTHLY WET SEASON VISUAL OBSERVATIONS

Section B.4.a of the General Permit requires you to conduct monthly visual observations of storm water discharges at all storm water discharge locations during the wet season. These observations shall occur during the first hour of discharge or, in the case of temporarily stored or contained storm water, at the time of discharge.

1. Indicate below whether monthly visual observations of storm water discharges occurred at all discharge locations. **Attach an explanation for any "NO" answers.** Include in this explanation whether any eligible storm events occurred during scheduled facility operating hours that did not result in a storm water discharge, and provide the date, time, name and title of the person who observed that there was no storm water discharge.

	YES	NO		YES	NO
October	<input type="checkbox"/>	<input checked="" type="checkbox"/>	February	<input type="checkbox"/>	<input checked="" type="checkbox"/>
November	<input type="checkbox"/>	<input checked="" type="checkbox"/>	March	<input type="checkbox"/>	<input checked="" type="checkbox"/>
December	<input type="checkbox"/>	<input checked="" type="checkbox"/>	April	<input type="checkbox"/>	<input checked="" type="checkbox"/>
January	<input type="checkbox"/>	<input checked="" type="checkbox"/>	May	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2. Report monthly wet season visual observations using **Form 4** or provide the following information.
 - a. date, time, and location of observation
 - b. name and title of observer
 - c. characteristics of the discharge (i.e., odor, color, etc.) and source of any pollutants observed.
 - d. **any** new or revised BMPs necessary to reduce or prevent pollutants in storm water discharges. Provide new or revised BMP implementation date.

ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION (ACSCE)

H. ACSCE CHECKLIST

Section A.9 of the General Permit requires the facility operator to conduct one ACSCE in each reporting period (July 1-June 30). Evaluations must be conducted within 8-16 months of each other. The SWPPP and monitoring program shall be revised and implemented, as necessary, within 90 days of the evaluation. The checklist below includes the minimum steps necessary to complete a ACSCE. Indicate whether you have performed each step below. **Attach an explanation for any "NO" answers.**

1. Have you inspected all potential pollutant sources and industrial activities areas? YES NO
The following areas should be inspected:

- | | |
|---|--|
| <ul style="list-style-type: none"> • areas where spills and leaks have occurred during the last year. • outdoor wash and rinse areas. • process/manufacturing areas. • loading, unloading, and transfer areas. • waste storage/disposal areas. • dust/particulate generating areas. • erosion areas. | <ul style="list-style-type: none"> • building repair, remodeling, and construction • material storage areas • vehicle/equipment storage areas • truck parking and access areas • rooftop equipment areas • vehicle fueling/maintenance areas • non-storm water discharge generating areas |
|---|--|

2. Have you reviewed your SWPPP to assure that its BMPs address existing potential pollutant sources and industrial activities areas? YES NO

3. Have you inspected the entire facility to verify that the SWPPP's site map, is up-to-date? The following site map items should be verified: YES NO

- | | |
|--|--|
| <ul style="list-style-type: none"> • facility boundaries • outline of all storm water drainage areas • areas impacted by run-on | <ul style="list-style-type: none"> • storm water discharges locations • storm water collection and conveyance system • structural control measures such as catch basins, berms, containment areas, oil/water separators, etc. |
|--|--|

4. Have you reviewed all General Permit compliance records generated since the last annual evaluation? YES NO

The following records should be reviewed:

- quarterly authorized non-storm water discharge visual observations
- monthly storm water discharge visual observation
- records of spills/leaks and associated clean-up/response activities
- quarterly unauthorized non-storm water discharge visual observations
- Sampling and Analysis records
- preventative maintenance inspection and maintenance records

5. Have you reviewed the major elements of the SWPPP to assure compliance with the General Permit? YES NO

The following SWPPP items should be reviewed:

- pollution prevention team
- list of significant materials
- description of potential pollutant sources
- assessment of potential pollutant sources
- identification and description of the BMPs to be implemented for each potential pollutant source

6. Have you reviewed your SWPPP to assure that a) the BMPs are adequate in reducing or preventing pollutants in storm water discharges and authorized non-storm water discharges, and b) the BMPs are being implemented? YES NO

The following BMP categories should be reviewed:

- good housekeeping practices
- spill response
- employee training
- erosion control
- quality assurance
- preventative maintenance
- material handling and storage practices
- waste handling/storage
- structural BMPs

7. Has all material handling equipment and equipment needed to implement the SWPPP been inspected? YES NO

I. ACSCE EVALUATION REPORT

The facility operator is required to provide an evaluation report that includes:

- identification of personnel performing the evaluation
- the date(s) of the evaluation
- necessary SWPPP revisions
- schedule for implementing SWPPP revisions
- any incidents of non-compliance and the corrective actions taken.

Use **Form 5** to report the results of your evaluation or develop an equivalent form.

J. ACSCE CERTIFICATION

The facility operator is required to certify compliance with the Industrial Activities Storm Water General Permit. To certify compliance, both the SWPPP and Monitoring Program must be up to date and be fully implemented.

Based upon your ACSCE, do you certify compliance with the Industrial Activities Storm Water General Permit? YES NO

If you answered "NO" **attach an explanation** to the ACSCE Evaluation Report why you are not in compliance with the Industrial Activities Storm Water General Permit.

ANNUAL REPORT CERTIFICATION

I am duly authorized to sign reports required by the INDUSTRIAL ACTIVITIES STORM WATER GENERAL PERMIT (see Standard Provision C.9) and I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name: Mitchell Samuelian

Signature: _____ Date: 06/30/2015

Title: General Manager

<i>Water Boards Storm Water Multiple Application & Report Tracking System</i>		Help	Logout
You are logged-in as: Timothy Higdon - NRG Energy. If this account does not belong to you, please log out.		Navigate To: <input style="width: 150px;" type="text"/>	
Storm Water Annual Report Monitoring (SWARM)			
Facility Name: ISEGS	Agency: NRG EnergyServices LLC		
WDID ID: 6B36I024279	SIC Code(s): 4911-Electric Services		
Reporting Period: 2014-15	Report Status: Submitted		
General Info Sampling Mon Locs Raw Data Data Summary Quarterly Monthly Evaluation Attachments Certify Status History			
Back To Report Main Back To NOI Summary			
Your electronic Annual Report has been succesfully received by the State Water Resources Control Board's database and is hereby certified. Your confirmation information for this certification is as follows:			
WDID	6B36I024279		
Reporting Period	2014-15		
Certifier Name	Mitchell Samuelian		
Certifier Title	General Manager		
Date Certified	06/30/2015		
Certification ID	796290		
All records must be retained for 5 years from the date of the report or monitoring activity.			
<input type="button" value="Download Copy of Record"/>			
<input type="button" value="Print Annual Report"/>			
© 2015 State of California. Conditions of Use Privacy Policy			

ANNUAL REPORT

DESCRIPTION OF BASIC ANALYTICAL PARAMETERS

The Industrial Activities Storm Water General Permit (General Permit) requires you to analyze storm water samples for at least four parameters. These are pH, Total Suspended Solids (TSS), Specific Conductance (SC), and Total Organic Carbon (TOC). Oil and Grease (O&G) may be substituted for TOC. In addition, you must monitor for any other pollutants which you believe to be present in your storm water discharge as a result of industrial activity and analytical parameters listed in Table D of the General Permit. There are no numeric limitations for the parameters you test for.

The four parameters which the General Permit requires to be tested are considered *indicator* parameters. In other words, regardless of what type of facility you operate, these parameters are nonspecific and general enough to usually provide some indication whether pollutants are present in your storm water discharge. The following briefly explains what each of these parameters mean:

pH is a numeric measure of the hydrogen-ion concentration. The neutral, or acceptable, range is within 6.5 to 8.5. At values less than 6.5, the water is considered acidic; above 8.5 it is considered alkaline or basic. An example of an acidic substance is vinegar, and a alkaline or basic substance is liquid antacid. Pure rainfall tends to have a pH of a little less than 7. There may be sources of materials or industrial activities which could increase or decrease the pH of your storm water discharge. If the pH levels of your storm water discharge are high or low, you should conduct a thorough evaluation of all potential pollutant sources at your site.

Total Suspended Solids (TSS) is a measure of the undissolved solids that are present in your storm water discharge. Sources of TSS include sediment from erosion of exposed land, and dirt from impervious (i.e. paved) areas. Sediment by itself can be very toxic to aquatic life because it covers feeding and breeding grounds, and can smother organisms living on the bottom of a water body. Toxic chemicals and other pollutants also adhere to sediment particles. This provides a medium by which toxic or other pollutants end up in our water ways and ultimately in human and aquatic life. TSS levels vary in runoff from undisturbed land. It has been shown that TSS levels increase significantly due to land development.

Specific Conductance (SC) is a numerical expression of the ability of the water to carry an electric current. SC can be used to assess the degree of mineralization, salinity, or estimate the total dissolved solids concentration of a water sample. Because of air pollution, most rain water has a SC a little above zero. A high SC could affect the usability of waters for drinking, irrigation, and other commercial or industrial use.

Total Organic Carbon (TOC) is a measure of the total organic matter present in water. (All organic matter contains carbon) This test is sensitive and able to detect small concentrations of organic matter. Organic matter is naturally occurring in animals, plants, and man. Organic matter may also be man made (so called synthetic organics). Synthetic organics include pesticides, fuels, solvents, and paints. Natural organic matter utilizes the oxygen in a receiving water to biodegrade. Too much organic matter could place a significant oxygen demand on the water, and possibly impact its quality. Synthetic organics either do not biodegrade or biodegrade very slowly. Synthetic organics are a source of toxic chemicals that can have adverse affects at very low concentrations. Some of these chemicals bioaccumulate in aquatic life. If your levels of TOC are high, you should evaluate all sources of natural or synthetic organics you may use at your site.

Oil and Grease (O&G) is a measure of the amount of oil and grease present in your storm water discharge. At very low concentrations, O&G can cause a sheen (that floating "rainbow") on the surface of water (1 qt. of oil can pollute 250,000 gallons of water). O&G can adversely affect aquatic life and create unsightly floating material and film on water, thus making it undrinkable. Sources of O&G include maintenance shops, vehicles, machines and roadways.

If you have any questions regarding whether or not your constituent concentrations are too high, please contact your local Regional Board office. The United States Environmental Protection Agency (USEPA) has published stormwater discharge benchmarks for a number of parameters. These benchmarks may be helpful when evaluating whether additional BMPs are appropriate. These benchmarks can be accessed at our website at <http://www.swrcb.ca.gov>. It is contained in the Sampling and Analysis Reduction Certification.

See Storm Water Contacts at

http://www.waterboards.ca.gov/water_issues/programs/stormwater/contact.shtml

2014-2015

ANNUAL REPORT

FORM 1 - SAMPLING & ANALYSIS RESULTS

Monitoring Location	Sample Date / Time	Discharge Time	Sample Collector Name, Title	Parameter	Result	Units	Analytical Method	Method Detection Limit	Analyzed By
---------------------	--------------------	----------------	------------------------------	-----------	--------	-------	-------------------	------------------------	-------------

2014-2015

ANNUAL REPORT

**FORM 2 - QUARTERLY VISUAL OBSERVATIONS OF AUTHORIZED
NON-STORM WATER DISCHARGES (NSWDs)**

Quarter	Date/Time(HH:MM)	Observer Name	Observer Title	Any Authorized NSWDS This Quarter?
July - Sept				

Source and Location of Authorized NSWD	Name of Authorized NSWD	Authorized NSWD Characteristics at Source	Authorized NSWD Characteristics at Drainage Area and Discharge Location	Revised or New BMPs Description and Implementation Date

Quarter	Date/Time(HH:MM)	Observer Name	Observer Title	Any Authorized NSWDS This Quarter?
Oct - Dec				

Source and Location of Authorized NSWD	Name of Authorized NSWD	Authorized NSWD Characteristics at Source	Authorized NSWD Characteristics at Drainage Area and Discharge Location	Revised or New BMPs Description and Implementation Date

Quarter	Date/Time(HH:MM)	Observer Name	Observer Title	Any Authorized NSWDS This Quarter?
Jan - Mar	02/04/2015	Timothy Higdon	Environmental Specialist	Yes

Source and Location of Authorized NSWD	Name of Authorized NSWD	Authorized NSWD Characteristics at Source	Authorized NSWD Characteristics at Drainage Area and Discharge Location	Revised or New BMPs Description and Implementation Date
Air conditioner at Unit 2 Boiler Circulation Pump UPS Battery Module	Air Conditioner condensate	Clear	Not enough volume	Not enough volume to require new BMPs

Quarter	Date/Time(HH:MM)	Observer Name	Observer Title	Any Authorized NSWDS This Quarter?
Apr - Jun				

Source and Location of Authorized NSWD	Name of Authorized NSWD	Authorized NSWD Characteristics at Source	Authorized NSWD Characteristics at Drainage Area and Discharge Location	Revised or New BMPs Description and Implementation Date

2014-2015

ANNUAL REPORT

**FORM 3 - QUARTERLY VISUAL OBSERVATIONS OF UNAUTHORIZED
NON-STORM WATER DISCHARGES (NSWDs)**

Quarter	Date/Time(HH:MM)	Observer Name	Observer Title	Unauthorized NSWDs Observed?	Indications of Prior Unauthorized NSWDs?
July - Sept					

Source and Location of Unauthorized NSWD	Name of Unauthorized NSWD	Unauthorized NSWD Characteristics at Source	Unauthorized NSWD Characteristics at Drainage Area and Discharge Location	Corrective Actions to Eliminate Unauthorized NSWD and Elimination Date
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Quarter	Date/Time(HH:MM)	Observer Name	Observer Title	Unauthorized NSWDs Observed?	Indications of Prior Unauthorized NSWDs?
Oct - Dec	10/09/2014 13:30	Timothy Higdon	Environmental Specialist	Yes	No

Source and Location of Unauthorized NSWD	Name of Unauthorized NSWD	Unauthorized NSWD Characteristics at Source	Unauthorized NSWD Characteristics at Drainage Area and Discharge Location	Corrective Actions to Eliminate Unauthorized NSWD and Elimination Date
Unit 1 Main Boiler Feed Pump	Boiler Feed Pump Condensate	Clear	Did not enter drainage areas. Percolated into rock.	Maintenance was performed and valve was replaced.

Quarter	Date/Time(HH:MM)	Observer Name	Observer Title	Unauthorized NSWDs Observed?	Indications of Prior Unauthorized NSWDs?
Jan - Mar					

Source and Location of Unauthorized NSWD	Name of Unauthorized NSWD	Unauthorized NSWD Characteristics at Source	Unauthorized NSWD Characteristics at Drainage Area and Discharge Location	Corrective Actions to Eliminate Unauthorized NSWD and Elimination Date
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Quarter	Date/Time(HH:MM)	Observer Name	Observer Title	Unauthorized NSWDs Observed?	Indications of Prior Unauthorized NSWDs?
Apr - Jun	05/27/2015 08:43	Timothy Higdon	Environmental Specialist	Yes	No

Source and Location of Unauthorized NSWD	Name of Unauthorized NSWD	Unauthorized NSWD Characteristics at Source	Unauthorized NSWD Characteristics at Drainage Area and Discharge Location	Corrective Actions to Eliminate Unauthorized NSWD and Elimination Date
Demineralized water and Unit 2 Demin Trailer	Demineralized water	Clear	Remained on asphalt by Demin Trailer and evaporated	Reminded vendor and technicians to check couplings and valves during transfer.

2014-2015

ANNUAL REPORT

**FORM 4 - MONTHLY VISUAL OBSERVATIONS OF
STORM WATER DISCHARGES**

Observation Date:			Observer Name:			Observer Title:		
Location Description	Observation Time	Time Discharge Began	Were Pollutants Observed?	Drainage Area Description	Describe Storm Water Discharge Characteristics	Identify and Describe Source(s) of Pollutants	Describe any Revised or New BMPs and Their Date of Implementation	
Observation Date:			Observer Name:			Observer Title:		
Location Description	Observation Time	Time Discharge Began	Were Pollutants Observed?	Drainage Area Description	Describe Storm Water Discharge Characteristics	Identify and Describe Source(s) of Pollutants	Describe any Revised or New BMPs and Their Date of Implementation	
Observation Date:			Observer Name:			Observer Title:		
Location Description	Observation Time	Time Discharge Began	Were Pollutants Observed?	Drainage Area Description	Describe Storm Water Discharge Characteristics	Identify and Describe Source(s) of Pollutants	Describe any Revised or New BMPs and Their Date of Implementation	
Observation Date:			Observer Name:			Observer Title:		
Location Description	Observation Time	Time Discharge Began	Were Pollutants Observed?	Drainage Area Description	Describe Storm Water Discharge Characteristics	Identify and Describe Source(s) of Pollutants	Describe any Revised or New BMPs and Their Date of Implementation	
Observation Date:			Observer Name:			Observer Title:		
Location Description	Observation Time	Time Discharge Began	Were Pollutants Observed?	Drainage Area Description	Describe Storm Water Discharge Characteristics	Identify and Describe Source(s) of Pollutants	Describe any Revised or New BMPs and Their Date of Implementation	
Observation Date:			Observer Name:			Observer Title:		
Location Description	Observation Time	Time Discharge Began	Were Pollutants Observed?	Drainage Area Description	Describe Storm Water Discharge Characteristics	Identify and Describe Source(s) of Pollutants	Describe any Revised or New BMPs and Their Date of Implementation	
Observation Date:			Observer Name:			Observer Title:		
Location Description	Observation Time	Time Discharge Began	Were Pollutants Observed?	Drainage Area Description	Describe Storm Water Discharge Characteristics	Identify and Describe Source(s) of Pollutants	Describe any Revised or New BMPs and Their Date of Implementation	
Observation Date:			Observer Name:			Observer Title:		
Location Description	Observation Time	Time Discharge Began	Were Pollutants Observed?	Drainage Area Description	Describe Storm Water Discharge Characteristics	Identify and Describe Source(s) of Pollutants	Describe any Revised or New BMPs and Their Date of Implementation	

2014-2015

ANNUAL REPORT

FORM 5 - ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY BMP STATUS

Evaluation Date:	Inspector Name:	Title:		
Potential Pollutant Source/Industrial Activity Area	Are any BMPs Not Fully Implemented?	Are Additional/Revised BMPs Necessary?	Deficiencies in BMPs or BMP implementation	Additional/Revised BMPs or Corrective Actions and their date(s) of Implementation

2014-2015

ANNUAL REPORT

EXPLANATIONS SPECIFIED FOR VARIOUS YES/NO QUESTIONS IN THE REPORT

Explanation Question	Explanation Text
E1	ISEGS did not experience any qualifying storm events resulting in measurable flow to sample.
E2	As stated above, ISEGS did not experience any qualifying storm events which met the criteria as described in the SWPPP.
E5	Sample collection and/or analysis were not reduced as no samples were taken for the reasons stated above.
E6	As ISEGS did not experience a qualifying event there were no samples to collect during the first hour of discharge.
E7	As ISEGS did not experience a qualifying event there were no samples.
E10	Table D requires that Steam Electric Generating Facilities also analyze storm water runoff for Fe (Iron). However, ISEGS did not experience a qualifying event so no samples were analyzed.
F1b.Jan - Mar	
G .October	As shown in the attached table, although the ISEGS experienced precipitation events, there was no discharge of storm water from either the power blocks or the administration area. All observations were made by Timothy Higdon, Environmental Specialist.
G .November	As shown in the attached table, although the ISEGS experienced precipitation events, there was no discharge of storm water from either the power blocks or the administration area. All observations were made by Timothy Higdon, Environmental Specialist.
G .December	As shown in the attached table, although the ISEGS experienced precipitation events, there was no discharge of storm water from either the power blocks or the administration area. All observations except for the observation of 12/12/14 were made by Timothy Higdon, Environmental Specialist. The observation on 12/12/14 was made by Shankara Babu, EHS Manager.
G .January	As shown in the attached table, although the ISEGS experienced precipitation events, there was no discharge of storm water from either the power blocks or the administration area. All observations were made by Timothy Higdon, Environmental Specialist.
G .February	As shown in the attached table, although the ISEGS experienced precipitation events, there was no discharge of storm water from either the power blocks or the administration area. All observations were made by Timothy Higdon, Environmental Specialist.
G .March	As shown in the attached table, although the ISEGS experienced precipitation events, there was no discharge of storm water from either the power blocks or the administration area. All observations were made by Timothy Higdon, Environmental Specialist.
G .April	As shown in the attached table, although the ISEGS experienced precipitation events, there was no discharge of storm water from either the power blocks or the administration area. All observations were made by Timothy Higdon, Environmental Specialist.
G .May	As shown in the attached table, although the ISEGS experienced precipitation events, there was no discharge of storm water from either the power blocks or the administration area. All observations were made by Timothy Higdon, Environmental Specialist.

Attachments:

Attachment Title	Description	Date Uploaded	Attachment Type	Attachment Hash	Doc Part No/Total Parts
Clarification and precipitation log	Explanation of No answers and log of precipitation	06/29/2015	Cover/Explanation Letter	72149cafbbf93bf2e2b124827de2f37b0c3e72074943538f073d6ebd52c6c67	1/1
Ivanpah SWPPP 2015-2016	SWPPP for Ivanpah	06/29/2015	SWPPP	ab69b1f6bca6e9a63d8283141b4d27b288d8fe3ea8b7e65667c7313eee7bd	1/1
Ivanpah Site Plan	Site map for Ivanpah	06/29/2015	Facility/Site Map	24dee1745a6ad7c654a487a6548872e1a9fe8752e1dc94999b695374e189531	1/1

Attachment A Explanation of No Answers

Per the **Storm Water Pollution Prevention Plan, Ivanpah Solar Electric Generating Station, Nipton, CA, Appendix B, 2014-2015 Annual Report Specific Information**, this attachment documents the explanations for the “No” answers to questions E1, E2, E5, E6, E7, E8, E10c and G1 of the Annual Report 2014 to 2015.

As discussed in the SWPPP, *the power block and the areas where the Administration Building and production wells are located are graded with moderate slopes to direct runoff to drainage outlet aprons to reduce erosion in these localized areas and to promote a natural sheet flow condition in the downstream area.* Further, the surface area of the power blocks have a layer of aggregate that absorbs storm water and reduces run off.

During the rainy season (October 2014 to May 2015), the ISEGS did not experience any qualifying storm event that met the criteria as described in the SWPPP.

As stated in the SWPPP (dated January 2015): *A qualifying storm water event is as follows:*

- *Produces a discharge;*
- *Occurs during daylight hours and scheduled Facility environmental compliance staff operating hours Monday through Thursday, 6 a.m. to 5:30 p.m.; or*
- *A storm water discharge which is preceded by at least 3 consecutive working days or 72 hours of dry weather without a storm water discharge.*

As shown in the attached table, although the ISEGS experienced precipitation events, there was no discharge of storm water from either the power blocks or the administration area. All observations except for the observation of 12/12/14 were made by Timothy Higdon, Environmental Specialist. The observation on 12/12/14 was made by Shankara Babu, EHS Manager.

E1) ISEGS did not experience any qualifying storm events resulting in measurable flow to sample.

E2) As stated above, ISEGS did not experience any qualifying storm events which met the criteria as described in the SWPPP.

E5) Sample collection and/or analysis were not reduced as no samples were taken for the reasons stated above.

E6) As ISEGS did not experience a qualifying event there were no samples to collect during the first hour of discharge.

E7) As ISEGS did not experience a qualifying event there were no samples.

E8) As ISEGS did not experience a qualifying event there were no samples.

E10b) Table D requires that Steam Electric Generating Facilities also analyze storm water runoff for Fe (Iron). However, ISEGS did not experience a qualifying event so no samples were analyzed.

E10c) As ISEGS did not experience a qualifying event; no storm water samples were analyzed.

G1) As ISEGS did not experience a qualifying event during scheduled facility operating hours that resulted in a discharge. All observations were made by Timothy Higdon, Environmental Specialist except for the observation on 12/12/14, which was made by Shankara Babu EHS Manager.

Precipitation Events for ISEGS 2014-2015 Reporting

Day	Date	Time	Precipitation ¹	Sample Points Observed ^{2,3}	1	2	3	4	Samples Taken	Explanation
Sat	10/25/2014	4:00 PM	0.03							
	Sum of Event		0.03	No					NA	Event outside of regular schedule
Tues	12/2/2014	2:00 PM	0.02							
	12/2/2014	3:00 PM	0.02		x	x	x	x		
	12/2/2014	4:00 PM	0.03							
	12/2/2014	5:00 PM	0.05							
	12/2/2014	6:00 PM	0.13							
	12/2/2014	7:00 PM	0.06							
	12/2/2014	8:00 PM	0.01							
	12/2/2014	9:00 PM	0							
	12/2/2014	10:00 PM	0.01							
	12/2/2014	11:00 PM	0.01							
	Sum of Event		0.34	Yes					No	No flow observed see monitoring form
Wed	12/3/2014	12:00 AM	0.01							
	12/3/2014	1:00 AM	0.01							
	12/3/2014	2:00 AM	0.01							
	12/3/2014	3:00 AM	0							
	12/3/2014	4:00 AM	0							
	12/3/2014	5:00 AM	0.02							
	12/3/2014	6:00 AM	0.01							
	Sum of Event		0.06	No					NA	Event outside of regular schedule
Thu	12/4/2014	3:00 AM	0.01							
	Sum of Event		0.01	No					NA	Event outside of regular schedule
Sun	12/7/2014	4:00 AM	0.01							
	Sum of Event		0.01	No					NA	Event outside of regular schedule
Fri	12/12/2014	12:00 PM	0.04							
	12/12/2014	1:00 PM	0.06		x	x	x	X		
	12/12/2014	2:00 PM	0.02							
	12/12/2014	3:00 PM	0							
	12/12/2014	4:00 PM	0.01							
	12/12/2014	5:00 PM	0							
	12/12/2014	6:00 PM	0							
	12/12/2014	7:00 PM	0							
	12/12/2014	8:00 PM	0							
	12/12/2014	9:00 PM	0							
	12/12/2014	10:00 PM	0.01							
12/12/2014	11:00 PM	0.02								
	Sum of Event		0.16	Yes					No	No flow observed see monitoring form
Sat	12/13/2014	12:00 AM	0.01							
	Sum of Event		0.01	No					NA	Event outside of regular schedule
	12/17/2014	4:00 AM	0.01							
	12/17/2014	5:00 AM	0							
	12/17/2014	6:00 AM	0							
	12/17/2014	7:00 AM	0							

Day	Date	Time	Precipitation ¹	Sample Points Observed ^{2,3}	1	2	3	4	Samples Taken	Explanation
Wed	12/17/2014	8:00 AM	0							
	12/17/2014	9:00 AM	0							
	12/17/2014	10:00 AM	0							
	12/17/2014	11:00 AM	0.01							
	Sum of Event		0.02	No					NA	Event to sporadic to produce discharge
Sun	1/11/2015	4:00 AM	0.02							
	1/11/2015	5:00 AM	0.06							
	1/11/2015	6:00 AM	0.18							
	1/11/2015	7:00 AM	0.06							
	1/11/2015	8:00 AM	0							
	1/11/2015	9:00 AM	0							
	1/11/2015	10:00 AM	0.01							
	1/11/2015	11:00 AM	0							
	1/11/2015	12:00 PM	0							
	1/11/2015	1:00 PM	0.02							
	1/11/2015	2:00 PM	0.06							
	1/11/2015	3:00 PM	0.05		X	X	X	X		
	1/11/2015	4:00 PM	0.01							
	Sum of Event		0.47	Yes					No	No flow observed see monitoring form
Mon	1/26/2015	4:00 PM	0.02							
	1/26/2015	5:00 PM	0.01							
	1/26/2015	6:00 PM	0							
	1/26/2015	7:00 PM	0							
	1/26/2015	8:00 PM	0.04							
	1/26/2015	9:00 PM	0.09							
	1/26/2015	10:00 PM	0.03		X	X	X	X		
	1/26/2015	11:00 PM	0.01							
	Sum of Event		0.2	Yes					No	No flow observed see monitoring form
Tues	1/27/2015	12:00 AM	0.01							
	1/27/2015	1:00 AM	0.01							
	1/27/2015	2:00 AM	0							
	1/27/2015	3:00 AM	0							
	1/27/2015	4:00 AM	0.01							
	Sum of Event		0.03	No					NA	Event outside of regular schedule
Fri	1/30/2015	5:00 AM	0.01							
	1/30/2015	6:00 AM	0.01							
	1/30/2015	7:00 AM	0.04							
	1/30/2015	8:00 AM	0.03							
	1/30/2015	9:00 AM	0.06							
	1/30/2015	10:00 AM	0.07		X	X				
	1/30/2015	11:00 AM	0.04				X	X		
	1/30/2015	12:00 PM	0.01							
	1/30/2015	1:00 PM	0.02							
	1/30/2015	2:00 PM	0							
	1/30/2015	3:00 PM	0							

Day	Date	Time	Precipitation ¹	Sample Points Observed ^{2,3}	1	2	3	4	Samples Taken	Explanation
	1/30/2015	4:00 PM	0.03							
	1/30/2015	5:00 PM	0.04							
	1/30/2015	6:00 PM	0.02							
	1/30/2015	7:00 PM	0.01							
	1/30/2015	8:00 PM	0							
	1/30/2015	9:00 PM	0.01							
	1/30/2015	10:00 PM	0							
	1/30/2015	11:00 PM	0.01							
			0.41	Yes					No	No flow observed see monitoring form
Sat	1/31/2015	5:00 AM	0.01							
			0.01	No					NA	Event outside of regular schedule
	2/22/2015	4:00 PM	0.01							
	2/22/2015	5:00 PM	0.05							
	2/22/2015	6:00 PM	0.01							
	2/22/2015	7:00 PM	0							
Sun	2/22/2015	8:00 PM	0							
	2/22/2015	9:00 PM	0.05							
	2/22/2015	10:00 PM	0.04							
	2/22/2015	11:00 PM	0.02							
			Sum of Event	0.18	No				NA	Event outside of regular schedule
	2/23/2015	12:00 AM	0.04							
	2/23/2015	1:00 AM	0.11							
	2/23/2015	2:00 AM	0.06							
	2/23/2015	3:00 AM	0.02							
	2/23/2015	4:00 AM	0.02							
	2/23/2015	5:00 AM	0.03							
Mon	2/23/2015	6:00 AM	0.02							
	2/23/2015	7:00 AM	0.03							
	2/23/2015	8:00 AM	0.04							
	2/23/2015	9:00 AM	0.06			X	X			
	2/23/2015	10:00 AM	0.06		X	X				
	2/23/2015	11:00 AM	0.05							
	2/23/2015	12:00 PM	0.01							
			Sum of Event	0.55	Yes				No	No flow observed see monitoring form
	3/1/2015	3:00 PM	0.01							
	3/1/2015	4:00 PM	0.05							
	3/1/2015	5:00 PM	0.01							
	3/1/2015	6:00 PM	0.04							
Sun	3/1/2015	7:00 PM	0.01							
	3/1/2015	8:00 PM	0.05							
	3/1/2015	9:00 PM	0.03							
	3/1/2015	10:00 PM	0.02							
	3/1/2015	11:00 PM	0.02							
			Sum of Event	0.24	No				NA	Event outside of regular schedule
	3/2/2015	12:00 AM	0							

Day	Date	Time	Precipitation ¹	Sample Points Observed ^{2,3}	1	2	3	4	Samples Taken	Explanation
Mon	3/2/2015	1:00 AM	0.03							
	3/2/2015	2:00 AM	0.03							
	3/2/2015	3:00 AM	0.01							
	3/2/2015	4:00 AM	0.01							
	3/2/2015	5:00 AM	0							
	3/2/2015	6:00 AM	0.01							
	3/2/2015	7:00 AM	0.02							
	3/2/2015	8:00 AM	0		x	x	x	x		
	3/2/2015	9:00 AM	0.01							
Sum of Event			0.12	Yes					No	No flow observed see monitoring form
Sat	4/25/2015	4:00 PM	0.01							
	4/25/2015	5:00 PM	0							
	4/25/2015	6:00 PM	0.09							
	4/25/2015	7:00 PM	0.03							
	4/25/2015	8:00 PM	0.01							
Sum of Event			0.14	No					NA	Event outside of regular schedule
Mon	5/4/2015	2:00 PM	0.08		x	x	x	x		
	5/4/2015	3:00 PM	0.04							
	5/4/2015	4:00 PM	0.02							
	5/4/2015	5:00 PM	0.01							
	5/4/2015	6:00 PM	0.01							
Sum of Event			0.16	Yes					No	No flow observed see monitoring form
Mon	5/18/2015	4:00 PM	0.04		x	x	x	x		
Sum of Event			0.04	Yes					No	No flow observed see monitoring form

1) Measurements are in inches totalized each hour from Ivanpah weather station

2) Sampling points 1-3 correspond to Blocks 1-3 sampling point 4 is at Admin Building

3) x indicates time of observation

ISEGS Stormwater Observation Form

INSTRUCTIONS

During rain events conduct visual observations for storm water discharge within the first hour of precipitation. Observations shall be conducted at each of the sampling points identified in Figure 2 of the Storm Water Pollution Prevention Plan, Ivanpah Solar Generating Station Nipton, CA. Indicate if storm water is present at each sampling point and if samples were taken.

Date	Initial	Indicate if storm water flow present / sample is taken											
		Unit 1		Time	Unit 2		Time	Unit 3		Time	Admin		Time
12/2	[Signature]	N	N	4:05	N	N	3:27	N	N	3:45	N	N	3:15
Dec 2	[Signature]	n	n	1:32	n	n	1:17	n	n	1:04	n	n	N/A
11/15	[Signature]	N	N	3:15	N	N	3:02	N	N	3:35	N	N	3:52
1/26	[Signature]	N	N	10:50	N	N	11:17	N	N	10:32	N	N	10:03
1/30/15	[Signature]	N	N	10:23	N	N	10:40	N	N	11:05	N	N	11:35
2/23	[Signature]	N	N	10:32	N	N	10:50	N	N	9:20	N	N	9:10
3/2/15	[Signature]	N	N	8:50	N	N	8:35	N	N	8:15	N	N	8:00
5/4	[Signature]	N	N	2:52	N	N	2:23	N	N	2:35	N	N	2:10
5/18	[Signature]	N	N	5:05	N	N	4:25	N	N	4:43	N	N	4:10

NO. Rain

Return to Tim's office

Appendix T

Condition of Certification S&W-04

Annual Groundwater Consumption Record

2015 IVAPAH SOLAR ELECTRIC GENERATING FACILITY WATER CONSUMPTION

(Compliance with SOIL&WATER-4)

MONTH	Well #1				Well #2				CONSUMPTION DISTRIBUTION								TOTAL BY MONTH
	Permit #2010110649 (WP 6877)				Permit #2010110649 (WP 6877)				Pump A Common				Pump B Common				(acre feet)
	FIT1010				FIT2010				UNIT 1		UNIT 2		UNIT 3		COMMON AREA		
	Start (Meter Reading)	Finish (Meter Reading)	(gallons)	(acre feet)	Start (Meter Reading)	Finish (Meter Reading)	(gallons)	(acre feet)	(gallons)	(acre feet)	(gallons)	(acre feet)	(gallons)	(acre feet)	(gallons)	(acre feet)	
Jan-2015	0	304,449	304,449	0.9343	0	274,918	274,918	0.8437	44,235	0.1358	94,708	0.2906	117,008	0.3591	323,416	0.9925	1.7780
Feb-2015	304,449	714,221	409,772	1.2575	274,918	806,399	531,481	1.6311	124,290	0.3814	108,096	0.3317	59,048	0.1812	649,820	1.9942	2.8886
Mar-2015	714,221	1,318,643	604,422	1.8549	806,399	1,541,168	734,769	2.2549	183,161	0.5621	254,391	0.7807	221,444	0.6796	680,195	2.0874	4.1098
Apr-2015	1,318,643	1,944,362	625,719	1.9203	1,541,168	2,239,529	698,361	2.1432	396,181	1.2158	421,544	1.2937	405,978	1.2459	100,377	0.3080	4.0635
May-2015	1,944,362	2,706,077	761,715	2.3376	2,239,529	2,836,216	596,687	1.8312	288,861	0.8865	501,078	1.5378	491,515	1.5084	76,948	0.2361	4.1688
Jun-2015	2,706,077	3,339,828	633,751	1.9449	2,836,216	4,844,316	2,008,100	6.1626	716,029	2.1974	956,612	2.9357	751,855	2.3074	217,355	0.6670	8.1075
Jul-2015	3,339,828	4,457,608	1,117,780	3.4303	4,844,316	6,112,686	1,268,370	3.8925	607,531	1.8644	841,286	2.5818	702,491	2.1559	234,842	0.7207	7.3228
Aug-2015	4,457,608	5,856,428	1,398,820	4.2928	6,112,686	7,538,106	1,425,420	4.3745	758,449	2.3276	1,054,349	3.2357	877,441	2.6928	134,000	0.4112	8.6673
Sep-2015	5,856,428	6,662,988	806,560	2.4752	7,538,106	9,102,166	1,564,060	4.7999	652,173	2.0014	1,051,308	3.2263	662,816	2.0341	4,323	0.0133	7.2752
Oct-2015	6,662,988	7,214,034	551,046	1.6911	9,102,166	9,723,551	621,385	1.9070	259,886	0.7976	476,405	1.4620	342,663	1.0516	93,476	0.2869	3.5981
Nov-2015	7,214,034	7,617,877	403,843	1.2393	9,723,551	10,192,009	468,458	1.4376	285,484	0.8761	317,334	0.9739	246,286	0.7558	23,197	0.0712	2.6770
Dec-2015	7,617,877	8,028,347	410,470	1.2597	10,192,009	10,977,203	785,194	2.4097	87,696	0.2691	113,098	0.3471	59,152	0.1815	935,719	2.8716	3.6694
TOTAL			8,028,347	24.6381			10,977,203	33.6878	4,403,977	13.5153	6,190,208	18.9971	4,937,697	15.1532	3,473,668	10.6603	58.3259
YTD (gallons)	19,005,550								19,005,550								
YTD (acre feet)	58.33								58.33								
ANNUAL LIMIT (acre feet)	100.00								100.00								
REMAINING CAPACITY (acre feet)	41.67								41.67								

Appendix U

Condition of Certification S&W-05

Annual Summary of Heliostats Failed, Cause of Failure, Cleanup and Mitigation Performed



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

January 11, 2016

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C) Annual Summary Heliostats Failed, Cause of the Failure, Cleanup and Mitigation Performed, to fulfill California Energy Commission Conditions of Certification, S&W-5

Dear Mr. Douglas and Mr. Ahrens,

In accordance with the requirements of Conditions of Certification SOIL&WATER-05 of the Commission's approval of the Ivanpah Solar Electric Generating System (ISEGS), the project owner shall prepare an annual summary of the number of heliostats failed, cause of the failure, and cleanup and mitigation performed for each failed heliostat.

Ivanpah Solar Electric Generating System has a total of 173,655 heliostats as designed through Ivanpah 1,2, and 3. High winds contributed to three types of heliostat failures.

- Broken mirrors – Either one of both of the mirrors are broken
- Off Pylon- The heliostat assembly has come off the pylon resulting in broken mirrors
- Stuck of failed azimuth drive – The wind has jammed the azimuth drive, most likely during transition.

The Table 1 below shows a representation of the wind speeds experienced at ISEGS taken from the DCS.

Table 1 – 2015 Recorded Wind Speed at ISEGS

Date	Wind Speed (mph)
1/20/2015	87
2/9/2015	73
2/11/2015	79
3/18/2015	70
3/21/2015	68
3/29/2015	51
6/23/2015	69
10/17/2015	87
11/3/2015	50
12/24/2015	61

The broken mirrors are cleaned up on a regular basis. A contractor has been in contract to perform the broken mirror clean up and take the broken glass/mirrors to a central broken mirror waste bin accumulation area located within the Heliostat Assembly Building area. The mirror waste bin area is covered with lock and signage. Once the bin is full or has reached the 90 day storage limit, the broken mirrors waste bin is hauled by a licensed waste hauler and will be disposed to an approved disposal site.

In 2014, a total of 165 broken heliostats were reported and about 1,087 heliostats were reportedly broken in 2015. At the end of the reporting period, no replacement of broken heliostat assemblies were performed. ISEGS is currently making arrangements to manufacture/assemble heliostat onsite. This work is anticipated to begin in 2016. Once a substantial amount of heliostats have been assembled, the replacement of failed heliostats will begin. A summary of the failed heliostats by location is shown on Table 2 below.

Table 2 - 2015 Heliostat Annual Summary Report

	Ivanpah 1	Ivanpah 2	Ivanpah 3	Total
No. of Heliostats (As Designed)	53,555	60,050	60,050	173,655
No. Broken Heliostats (Incl. 2014)	554	355	343	1,252
Broken Heliostat Percentage	1.03%	0.59%	0.57%	0.72%
No. of Azimuth Drive Failures	156	36	188	380

A summary of the above listed components is kept on file and is used to help predict why components fail and what can be done to further reduce the failure rates.


William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364

CC: Doug Davis, NRG
Tim Sisk, NRG
Mitch Samuelian, NRG
Document Control Specialist – NRG.

Exhibit 8

Traffic and Transportation Conditions of Certifications

Appendix V

Condition of Certification TRANS-03

Heliostat Positioning Plan Update



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2037 Fax: 702-815-2030

December 8, 2015

Joseph Douglas, Compliance Project Manager
California Energy Commission
Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mike Ahrens
Authorized Officer
BLM, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: 2015 Revisions to Ivanpah Solar Electric Generating System Heliostat Positioning Plan

Dear Mr. Douglas and Mr. Ahrens:

The Ivanpah Solar Electric Generation System (ISEGS) is providing this letter to the California Energy Commission (CEC) and the Bureau of Land Management (BLM) in compliance with Condition of Certification (CoC) TRANS-3 and the Monitoring Section of the approved Heliostat Positioning Plan (HPP) (HPP Section 6.0). The CEC approved the Final HPP on December 10, 2013. The BLM provided approval for the plan on June 13, 2013.

As required TRANS-3, the HPP Section 6.0 provides a monitoring plan that a) obtain field measurements in response to legitimate complaints; b) verify that the Heliostat Positioning Plan would avoid the potential for human health and safety hazards including temporary or permanent blindness at locations of observers; and c) provide requirements and procedures to document, investigate and resolve legitimate complaints regarding glare. Furthermore, TRANS-3 requires that the monitoring plan should be coordinated with the FAA, U.S. Department of the Navy, CalTrans, CHP, and Clark County Department of Aviation in relation to the proposed Southern Nevada Supplemental Airport and be updated on an annual basis for the first 5 years, and at 2-year intervals thereafter for the life of the project. This letter provides an annual update to the monitoring plan as required by TRANS-3.

Previously, Sandia obtained ground-based measurements of glare on April 24, 2014. The HPP established a threshold level for glare as the "potential after image" as described in Section 2.1.1 and 2.2 and Figure 2-1. Ground-based measurements did not show levels above this threshold. As a result, a report was submitted on December 8, 2014 that requested the modification of the HPP to remove the requirement for ground-based cameras to monitor for glare from the facility.



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2037 Fax: 702-815-2030

Aerial measurements obtained of glare from the facility during the April 24, 2015 monitoring did show two measurements in excess of the established threshold. The ISEGS facility implemented new flux/standby dispersal algorithms in response to these measurements on July 17, 2014. Subsequently, measurements were obtained of glare from the facility on July 22, 2014. None of the measurements obtained were above the threshold established in the HPP. However, as reported by Sandia, glare was bright enough where reports from aerial observers may still be generated.

Despite measurements below the threshold, the ISEGS facility continues to develop positioning algorithms with the intent to reduce the potential for reports from aerial observers. Revised algorithms for heliostat positioning were deployed in April of 2015. Following deployment of these measures, Dr. Clifford Ho of Sandia National Laboratories visited the site on March 23, 2015 to obtain aerial measurements of glare from the facility. These measurements showed that while the threshold for exposure was not exceeded, the additional measures had little effect on the glare emanating from the facility. However, ISEGS continues to work with Sandia National Laboratories to decrease the level of glare from the facility. Sandia, in cooperation and with the support of the ISEGS facility has recently been awarded a multi-year grant to develop revised positioning algorithms to decrease glare from the facility. These efforts are anticipated to commence in 2016.

Since no measurements obtained from the facility following the algorithm modification in July of 2014 have been above the threshold level as established in the HPP, no modifications to the HPP are considered necessary in 2015. Therefore, ISEGS is not requesting a modification to the plan at this time.

Please note that this report is specific to the annual HPP modification update as required by Section 6 of the monitoring plan per TRANS-3. ISEGS will provide a HPP annual compliance update in the Annual Compliance Report. ISEGS appreciates the continuing cooperation of the Commission staff. Please feel free to contact me directly should you have any questions.

Sincerely,

A handwritten signature in black ink that reads "William R. Dusenbury". The signature is written in a cursive style with a long, sweeping tail on the final letter.

William R. Dusenbury
General Manager, Ivanpah Solar
100302 Yates Well Road
Nipton, CA 92364
Office: (702)558-1134

CC:

Federal Aviation Administration
FAA Southwest Regional Office



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2037 Fax: 702-815-2030

Obstruction Evaluation Service, AJR-32
2601 Meacham Boulevard
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Caltrans
Darren Cook



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
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Public Information Officer
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California Highway Patrol
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California Highway Patrol, Research and Planning Section
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Clark County
Randall Walker, Clark County Aviation Director
Rosemary E. Vassiliadis, Deputy Director
Teresa M. Arnold, AICP, Airport Planning Manager
P.O. Box 11005
Las Vegas, NV 89111-1005



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J. Martin
Clark County Public Works
500 South Grand Central Parkway
2nd Floor
Las Vegas, NV 89155
(702) 455-6100
jmartin@co.clark.nv.us

Amansec, Manolito

From: Davis, Doug
Sent: Thursday, December 10, 2015 10:43 AM
To: Douglas, Joseph@Energy (Joseph.Douglas@energy.ca.gov); Michael Ahrens
Cc: karen.mcdonald@faa.gov; robert.p.alenander@faa.gov; brian.armstrong@faa.gov;
davis.kessler@faa.gov; terr.hansen@usmc.mil; darin_cooke@dot.ca.gov;
jamal.elsaleh@dot.ca.gov; moe.bhuyian@dot.ca.gov; imaher@chp.ca.gov;
tarnold@co.clark.nv.us; jmartin@co.clark.nv.us; Samuelian, Mitch; Piantka, George; Dusenbury,
William R.; Amansec, Manolito; Sisk, Tim; Higdon, Tim
Subject: ISEGS - TRANS-3 HPP 2015 Addendum
Attachments: ISEGS_HPP_AddendumRequest_12-10-2015.pdf

Mr. Douglas and Mr. Ahrens,
In compliance with 07-AFC-5 TRANS-3 Heliostat Positioning Plan (HPP), please find Ivanpah Solar Electric Generating System (ISEGS) 2015 addendum attached.



Doug Davis
Manager, Environmental
NRG Energy, West Region
100302 Yates Well Road
Nipton, CA 92364

Office: 702-815-2037
Mobile: 702-239-6118

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Exhibit 9

Transmission Line Safety & Nuisance Conditions of Certifications

Appendix W

Condition of Certification TLSN-03

**Summary of Inspection Results
and Fire Prevention Activities
along the Right-of-Way**

**Ivanpah Solar Electric Generating System
California Energy Commission (07-AFC-5C)
Bureau of Land Management
(CACA-48668, 49502, 49503, and 49504)
Conditions of Certification TLSN-3**

**Summary of Inspections
January 1, 2015 – December 31, 2015
Reporting Period
Submitted
January 31, 2016**

Prepared by: Designated Biologist on behalf of Solar Partners I, II, VIII LLC

**100302 Yates Well Road
Nipton, CA 92364**

Introduction

This report is submitted in accordance with condition of certification (COC) TLSN-3 of the California Energy Commission (CEC) Ivanpah Solar Electric Generating System (ISEGS) Commission Decision, which states “During the first 5 years of plant operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the rights-of-way and provide such summaries in the Annual Compliance Report provided to BLM’s Authorized Officer and the CPM.”

Summary

Weed Infestations is a known fuel source for fires. Biological monitors conducted bi-monthly weed surveys per COC BIO-13 from February 2015 through October 2015 along the perimeter fence lines, including the generation tie line. Whenever weeds become visible within the perimeter or circumference of the generation tie line poles, weeds are cleared in accordance with Section 4292 of the Public Resources Code and Section 1250 Of Title 14 of the California Code of Regulations to ensure that they don’t become fire hazards. Data were collected when noxious weeds were located and the plants were collected for reporting and disposal.

Exhibit 10

Visual Resources Conditions of Certifications

Appendix X

Condition of Certification VIS-01

Surface Treatment of Project Structures and Building Status Report



NRG Ivanpah Solar Thermal Power Plant
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

January 7, 2016

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C) Surface Treatment of Project Structures and Buildings Status Report to fulfill California Energy Commission Conditions of Certification, VIS-01

Dear Mr. Douglas and Mr. Ahrens,

In accordance with the requirements of Conditions of Certification VIS-01 of the Commission's approval of the Ivanpah Solar Electric Generating System, we are providing the following status report as a requirement in the Annual Compliance Report:

- a.) The permanent structures Administration Building, Units 1, 2, & 3 Plant Services Buildings (PSB'S) are in good condition with no structural repairs or modifications performed during the reporting period. The Heliostat Assembly Building (HAB) tent has sustained wind related damages to the material seams and has required repairs. Annual fire system inspections were also conducted in the HAB.***
- b.) Building maintenance for the permanent structures included monthly HVAC service, adjustments to the control system for the heating and cooling, annual fire system inspections and some minor door repairs. HAB repairs have consisted of patching of torn tent seams, insulation replacement due to wind/rain damage, strapping of tent panels to avoid flapping during wind events and troubleshooting of the HVAC system.***
- c.) The scheduled maintenance works for 2016 include monthly HVAC filter changes and annual fire system inspections in all areas. HAB maintenance will be determined on an "as needed" basis.***



NRG Ivanpah Solar Thermal Power Plant
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

A handwritten signature in black ink, appearing to read "William Dusenbury". The signature is fluid and cursive, with a long, sweeping tail on the final letter.

William Dusenbury

General Manager,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364

CC: Doug Davis, NRG
Tim Sisk, NRG
Mitch Samuelian, NRG
Document Control Specialist – NRG.

Appendix Y

Condition of Certification VIS-02

**Golf Course Landscape Screening
Maintenance Activities Report**

December 31, 2015

Mr. Joseph Douglas
Compliance Project Manager
California Energy Commission, Siting, Transportation and Environmental Protection Division
1516 9th Street
Sacramento, CA 95814

Mr. Michael Ahrens
Authorized Officer
Bureau of Land Management, Needles Field Office
1303 U.S. Hwy 95 S.
Needles, CA 92363

RE: Ivanpah Solar Electric Generating System (07-AFC-5C)
Golf Course Landscape Screening Maintenance Report, to fulfill California Energy Commission
Conditions of Certification, VIS-02

Dear Mr. Douglas and Mr. Ahrens,

In accordance with the requirements of the Conditions of Certification VIS-02 of the Commission's approval of the Ivanpah Solar Electric Generating System, the project owner shall report landscape maintenance activities, including replacement of dead or dying vegetation, for the previous year of operation in each annual compliance report.

On May 19, 2015, Primm Valley Golf Club (PVGC), through Par 3 Landscape & Maintenance, Inc., informed ISEGS and requested replacement of twelve (12) 36" Mondell Pine Trees and twelve (12) Mexican Fan Palm Trees citing extreme cold weather conditions that caused the plants to decline. Solar Partners granted the request and a check was issued to PGVC in September 2015 to cover the cost of replacing the trees. PGVC informed Solar Partners that they will permanently take over responsibilities for the well-being of the replaced trees and relieving Solar Partners of any future financial/reporting obligation for the maintenance of the Golf Course Landscape Screening under the requirement of this Condition of Certification.

A letter from PGVC dated September 16, 2015 is attached accepting the conditions stated above. In this regard, ISEGS responsibility under the requirement of Condition of Certification VIS-2 has been fully satisfied.

Please feel free to contact me with any questions.



NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, HCR1, Box 280 Nipton, CA 92364
Ph: 702-815-2021 Fax: 702-815-2030

Thank you.

A handwritten signature in black ink, appearing to read "William Dusenbury".

William Dusenbury

General Manger,
NRG Ivanpah Solar Electric Generating System
100302 Yates Well Road, Nipton, CA – 92364

CC: Doug Davis, NRG, Ivanpah
Mitch Samuelian, NRG, Ivanpah
Tim Sisk, NRG
Document Control Specialist – NRG.



ner in all

September 16, 2015

Solar Partners II, I & VIII, LLC
c/o Doug Davis
Ivanpah Solar Thermal Power Plant
100302 Yates Well Road, HCR1, Box 280
Nipton, CA 92364

Dear Solar Partners :

At our request, the Solar Partners Ivanpah Solar Thermal Power Plant project ("Ivanpah") prepared and implemented a perimeter landscape screening plan to reduce the visibility of the Ivanpah project as seen from our golf course. This plan and its purposes are described by the California Energy Commission ("CEC") in its Condition VIS-2 for Ivanpah. The purpose of the VIS-2 plan was to provide screening of the power project while retaining as much of the scenic portion of the overall views of Ivanpah Valley and Clark Mountains as feasible.

To implement CEC Condition VIS-2, Ivanpah entered into a Consulting Services Agreement with Par-3 Landscape and Maintenance, Inc., dated August 20, 2013 (the "CSA"). The CSA called for the installation of Modell Pines trees and hybrid Mexican Fan Palms. The trees were installed under the CSA, and the work completed in October of 2013.

As a result of our most recent meetings, Ivanpah has agreed to pay the replacement costs for twenty-two (22) trees: ten (10) Modell Pines trees and twelve (12) hybrid Mexican Fan Palms. The trees will be installed by PVGC, and Ivanpah will reimburse PVGC for the costs of installation.

As a result of these actions, PVGC believes that Ivanpah has fully satisfied the spirit and the letter of CEC Condition VIS-2, and we are satisfied with the result of Ivanpah's cooperative efforts. Accordingly, from this date forward, PVGC will assume responsibility for maintenance and irrigation of these new plantings as well as the other plantings made on our property pursuant to the CSA. No further action by ISEGS with respect to these plantings is required.

Sincerely,

A handwritten signature in black ink that reads "Kam Brian".

Kam Brian
Chief Operating Officer
Par 4 Golf Management, Inc.



Exhibit 11

Waste Management Conditions of Certifications

Appendix Z

Condition of Certification WASTE-06

**Operations Waste Management
Plan Annual Report**



**Ivanpah Solar Electric Generating
System (07-AFC-5C)**

**Operations Waste Management Plan
Annual Report
(WASTE-06)**

OPERATIONS WASTE MANAGEMENT PLAN ANNUAL REPORT

In accordance with the requirements of the Conditions of Certification WASTE-06 of the Commission's approval of the Ivanpah Solar Electric Generating System (07-AFC-5C), the project owner shall also document in each Annual Compliance Report the actual volume of wastes generated and the waste management methods used during the year; provide a comparison of the actual waste generation and management methods used to those proposed in the original Operation Waste Management Plan; and update the Operation Waste Management Plan as necessary to address current waste generation and management practices.

Wastes at ISEGS are managed according to the Ivanpah Solar Electric Generating System Environmental Procedures, and Operations Waste Management Plan. Wastes are classified according to California Code of Regulations (CCR) Title 22, Division 4.5, Chapter 11. As identified in the Plan, Veolia Environmental remains ISEGS waste transporter and destination facility. It should be noted that a new addition to the waste stream, Hazardous Waste Solid, n.o.s. (Broken Glass, Lead Paint), 9, III is picked up by Veolia, but is transported to a U.S. Ecology facility 12 miles south of Beatty, NV. Onsite records are maintained in the Environmental Specialists office and electronically on a centralized server. The Plan divides wastes into two streams, however for efficiency of disposal; both streams are mixed for transportation. *Tables 1 and 2* provide a comparison of the projected and actual waste streams from Operations and Maintenance respectively. *Table 3* lists the manifested wastes shipped from ISEGS during 2015.

Table 1 Waste Stream Summary - Operations Phase

Waste	Frequency	Projected Amount	Actual Amount	Notes
Oily water and oil-water separator sludge	Continuously	1,000 gal/year	0	Oily water is being passed through a separator. The oil is captured in the waste oil amounts below.
Waste oil	Continuously	750 gal/year	682 gal	Waste oil
Oily Debris	Continuously	2 tons/year	6,100 lb / 3.05 tons	Used rags and absorbents as well as minor amount of hydrocarbon impacted soil
Universal wastes (fluorescent light tubes, batteries, mercury-containing devices, electronic wastes, aerosol cans)	Continuously	500 lb/year	100 lb	Should remain well under 500 lb/yr. Primarily alkaline batteries with some lithium batteries, aerosols, and fluorescent tubes
Empty containers <55 gallons	Continuously	200 lb/year	100	Most likely a onetime shipment
Empty containers > 5 gallons	Continuously	200 lb/year	0	We do not ship these
Municipal refuse and garbage	Continuously	50 CY/year		Working on recycling program with vendor

Table 2 Waste Stream Summary – Maintenance Activities

Waste	Frequency	Projected Amount	Actual Amount	Notes
Uncontaminated scrap metal, including equipment, machinery, piping	Infrequently	20 CY/year	0	Minor amounts of scrap metal were shipped but the weight has not been reported.
Uncontaminated soil	Infrequently	10 CY/year	0	No uncontaminated soil was removed from the site.
Waste paint and paint-related debris	Infrequently	25 lb/year	310 lbs	Primarily left over from construction
Waste maintenance chemicals (oils, greases, paints, etc.)	Infrequently	500 lb/year	560 lbs	Primarily used oil or hydrocarbon impacted filters for recycling
Waste/spent corrosives	Infrequently	50 gal/year	164 lbs	All materials from this category were left over from construction
Water treatment resins	Infrequently	0 gal/year	0	Water treatment resins are recharged (recycled) and reused.
Lead-acid batteries	Infrequently	8 batteries/year	1,520 lbs	Approximately 12 batteries were shipped for recycle.
Decontamination wastewater (e.g., tank and sump emptying and cleaning)	Infrequently	2,000 gal/year	4,500 gal	Oily water from contaminated sump. Primarily consisted of water. Rainwater is pumped from sumps to the primary sump and into the wastewater tank.

As can be seen from comparing the tables, projected wastes and actual wastes differed somewhat in certain areas but are consistent in others. *Table 3* includes lab packs which represent a continuation of one time shipments related to disposing of left over construction supplies. After 2 years of operation, the following list is the projected most common waste stream from both Operations and Maintenance;

- Universal Waste Fluorescent Tubes, Used for Recycling
- Non-RCRA Hazardous Waste Solid, (Oil Absorbent and Rags)
- Non-RCRA Hazardous Waste Liquid, (Waste Oil) (to include oily water)
- Non-RCRA hazardous Waste Liquid (Propylene Glycol, Water)
- UN3090 Lithium Battery, 9 II
- Batteries, Dry sealed n.o.s. (Alkaline Batteries, Universal Waste)
- Batteries Wet filled with acid, Electric Storage 8. III
- Hazardous Waste Solid, n.o.s. (Broken Glass, Lead Paint), 9, III

As the first years of operation are not considered a typical year of operation, quantities are difficult to judge. This is due to continued refinement in procedures and reevaluation of maintenance activities and schedules, which affect the type and frequency of waste generation. For example, procedures are continuing to be modified to capture and reuse propylene glycol and water which is currently disposed of as a hazardous waste during maintenance activities. It should also be noted that broken glass with lead paint has been added to the list of commonly shipped wastes.

Municipal wastes are being shipped offsite by Republic Services. A contract to provide documented recycling services was anticipated in 2015, however as they continue to develop their sort facility in Las Vegas, it is currently anticipated for 2016.

Table 3 - List of Manifested Wastes Shipped in 2015

Material	Container		Total Quantity	Unit Wt. / Vol	Code	Profile #	Manifest #	Manifest Signed By	Date Shipped	Shipper / Receiving Facility
	Qty.	Type								
Non-Hazardous Material (Used Oil Filters for Recycling)	3	DM	450	Pounds	None	693022	ZZ00479084	Russ Jones	3/25/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Liquid, (Waste Oil)	2	DM	800	Pounds	221	540413	001033658 VES	Russ Jones	3/25/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Solid, (Absorbent Rags)	5	DM	800	Pounds	352	540405	001033658 VES	Russ Jones	3/25/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Solid, (Absorbent Rags)	8	DM	1,200	Pounds	352	540405	0013658 VES	Russ Jones	3/25/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Liquid, (Used Oil)	4	DM	1,800	Pounds	221	750292	001033658 VES	Russ Jones	3/25/2015	Veolia Environmental Solutions
Non RCRA Hazardous Waste, Liquid (Propylene Glycol Water)	15	DM	5,200	Pounds	343	685835	001033658 VES	Russ Jones	3/25/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Liquid(Oily Water)	1	TT	4,500	Gallons	223	9B_1	0011620613 JJK	Tim Higdon	6/12/2015	Demeno Kardoon
Batteries, Wet Filled with Acid, Electrical Storage, 8 (Lead Acid Batteries for Recycle)	1	CW	1,500	Pounds	None	720150	ZZ 00524004	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Waste Flammable Liquids, Toxic n.o.s., (Methyl Alcohol, Mercury Thiocyanate) 3 (6.1), II (Lab Pack)	1	DF	8	Pounds	F003 / D001 / D009 / 331	719101	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Waste Corrosive liquids Oxidizing n.o.s. (Nitric Acid) 8 (5.1) II (Lab Pack)	1	DF	8	Pounds	D001 / D001 / 135 / 141	719101	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Waste Corrosive Liquids Oxidizing n.o.s. (Perchloric Acid Ferrric Perchlorate Acid) 8 (5.1) II (Lab Pack)	1	DF	10	Pounds	D001 / D002 / 141	719101	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Waste Corrosive Liquid Acidic Inorganic n.o.s. (Hydrochloric Acid) 8, II (Lab Pack)	1	DF	8	Pounds	D001 / 141	719101	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions

Material	Container		Total Quantity	Unit Wt. / Vol	Code	Profile #	Manifest #	Manifest Signed By	Date Shipped	Shipper / Receiving Facility
	Qty.	Type								
Waste Corrosive Liquid Basic Inorganic n.o.s. (Ammonium Hydroxide Potassium Hydroxide) 8, II (Lab Pack)	1	DF	10	Pounds	D002 / 141	719101	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Corrosive Liquid Basic Organic n.o.s. (Tetramethylammonium Hydroxide), 8, II (Lab Pack)	1	DF	8	Pounds	331 / D002	719101	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Corrosive Solid Basic Organic n.o.s. (Alkylamineodiol), 8, III	2	DF	120	Pounds	181	719101	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Liquid, (Amino Acid Silica)	1	DF	45	Pounds	331	602452	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Liquid, (Amino Acid Silica)	1	DF	300	Pounds	331	719266	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Soild (Soil Contaminated with Hydraulic Oil)	1	DF	60	Pounds	352 / 611	795797	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Liquid, (Water, Sodium Carbonate)	1	TP	3,100	Pounds	181	790430	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Non-RCRA hazardous Waste Liquid (Propylene Glycol Water)	1	DM	400	Pounds	343	685835	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Liquid, (Amino Acid Silica)	3	CW	3,000	Pounds	331	719266	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Liquid, (Waste Oil)	3	DM	1,200	Pounds	221	540413	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Solid, (Absorbent Rags)	7	DM	1050	Pounds	352	540405	0010866187 VES	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Universal Waste Fluorescent Tubes Used for Recycling	1	CF	15	Pounds	None	720149	ZZ 00524005	Shankara Babu	7/21/2015	Veolia Environmental Solutions
Aerosols Flammable (Each not exceeding 1L capacity) 2.1 Limited Quantity (Universal Waste)	1	DF	25	Pounds	None	719267	ZZ 00209745	Tim Higdon	8/12/2015	Veolia Environmental Solutions
Batteries, Wet Filled with Acid, Electrical Storage, 8 (Lead Acid Batteries for Recycle)	1	SF	20	Pounds	None	720150	ZZ 00209745	Tim Higdon	8/12/2015	Veolia Environmental Solutions

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	Qty.	Type								
Non-Hazardous Material (Used Oil Filters for Recycling)	1	DF	10	Pounds	None	693022	ZZ 00209745	Tim Higdon	8/12/2015	Veolia Environmental Solutions
Waste Paint Related Material Including Paint Thinning, Drying, Removing, or Reducing Compound 3, II	1	DF	310	Pounds	D001 / 331	719101	001034704 VES	Tim Higdon	8/12/2015	Veolia Environmental Solutions
Waste Dichloroisocyanuric Acid Dry	1	DF	8	Pounds	D003 / D001 / 141	719101	001034704 VES	Tim Higdon	8/12/2015	Veolia Environmental Solutions
Waste Hypochlorite Solutions 9, II, RQ	1	TP	1550	Pounds	D002 / 122	790791	001034704 VES	Tim Higdon	8/12/2015	Veolia Environmental Solutions
Waste Sulfuric Acid Solution, 8, II	1	DF	7	Pounds	D002 / 791	719101	001034704 VES	Tim Higdon	8/12/2015	Veolia Environmental Solutions
Corrosive Liquid Basic Organic, n.o.s. (Meta-Xylenediamine Polyamine) 8, II	1	DF	15	Pounds	331	719101	001034704 VES	Tim Higdon	8/12/2015	Veolia Environmental Solutions
Corrosive Solid Acidic inorganic n.o.s. (Nitric and Sulfuric Acid Debris), 8, III	1	DF	40	Pounds	141	719101	001034704 VES	Tim Higdon	8/12/2015	Veolia Environmental Solutions
Non-RCRA hazardous Waste Solid (Filters Contaminated with Petroleum Hydrocarbons)	1	DF	55	Pounds	352	790792	001034704 VES	Tim Higdon	8/12/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Liquid, (Waste Oil)	1	DM	300	Pounds	221	540413	001034704 VES	Tim Higdon	8/12/2015	Veolia Environmental Solutions
Non-RCRA hazardous Waste Solid (Absorbent Rags)	1	DM	225	Pounds	352	540405	001034704 VES	Tim Higdon	8/12/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Liquid (Lab Pack)	1	DF	200	Pounds	331	719101	001034704 VES	Tim Higdon	8/12/2015	Veolia Environmental Solutions
Non-RCRA hazardous Waste Solid (Absorbent Rags)	3	DM	675	Pounds	352	540405	001034704 VES	Tim Higdon	8/12/2015	Veolia Environmental Solutions
Lithium Metal Batteries, 9, II (Universal Waste)	1	DF	20	Pounds	None	746460	ZZ 00524134	Tim Higdon	9/2/2015	Veolia Environmental Solutions
Batteries Dry Sealed n.o.s. (Alkaline Batteries, Universal Waste)	1	DF	40	Pounds	None	746459	ZZ 00524134	Tim Higdon	9/2/2015	Veolia Environmental Solutions
Waste Hypochlorite Solutions, 8, II	3	DF	1,200	Pounds	D002 / 123	790791	001081605VES	Tim Higdon	9/2/2015	Veolia Environmental Solutions

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	Qty.	Type								
Corrosive Solid Basic Inorganic n.o.s. (Sodium Hydroxide Debris), 8, II	1	DF	100	Pounds	181	799475	001081605VES	Tim Higdon	9/2/2015	Veolia Environmental Solutions
Waste Ammonia Solution, 8, II	1	CW	500	Pounds	D002 / 135	792012	001081605VES	Tim Higdon	9/2/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Liquid, (Waste Oil)	1	DM	60	Pounds	221	540413	001081605VES	Tim Higdon	9/2/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Solid (Empty Drums)	1	DM	100	Pounds	512	791162	001081605VES	Tim Higdon	9/2/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Liquid, (Water, Sodium Carbonate)	2	DF	800	Pounds	141	790430	001081605VES	Tim Higdon	9/2/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste Solid, (Absorbent Rags)	2	DF	250	Pounds	352	540405	001081605VES	Tim Higdon	9/2/2015	Veolia Environmental Solutions
Waste Diidopropylamine, 3 (8), II	1	DF	30	Pounds	D001 / D002 / 331	719101	001081605VES	Tim Higdon	9/2/2015	Veolia Environmental Solutions
Waste Diidopropylamine, 3 (8), II	1	DF	30	Pounds	D001 / D002 / 331	719101	001081605VES	Tim Higdon	9/2/2015	Veolia Environmental Solutions
Waste Hypochlorite Solutions, 8, II	2	TP	6,200	Pounds	D002 / 123	790791	001081605VES	Tim Higdon	9/2/2015	Veolia Environmental Solutions
Waste Sodium Hydroxide Solution, 8, II	3	DF	1,200	Pounds	D002 / 122	791160	001081605VES	Tim Higdon	9/2/2015	Veolia Environmental Solutions
Hazardous Waste Solid, n.o.s. (Broken Glass, Lead Paint), 9, III	1	CM	12	Cu. Yard	D008 / 181	814213	001086408 VES	Tim Higdon	9/3/2015	US Ecology
Hazardous Waste Solid, n.o.s. (Broken Glass, Lead Paint), 9, III	1	CM	12	Cu. Yard	D008 / 181	814213	001086408 VES	Tim Higdon	9/9/2015	US Ecology
Hazardous Waste Solid, n.o.s. (Broken Glass, Lead Paint), 9, III	1	CM	25	Cu. Yard	D008 / 181	814213	001086408 VES	Tim Higdon	9/10/2015	US Ecology
Hazardous Waste Solid, n.o.s. (Broken Glass, Lead Paint), 9, III	1	CM	35	Cu. Yard	D008 / 181	814213	001086408 VES	Tim Higdon	11/30/2015	US Ecology
Waste Hypochlorite Solutions, 8, II	1	TP	675	Pounds	D002 / 123	790791	001087023 VES	Russ Jones	12/2/2015	Veolia Environmental Solutions
Non-RCRA hazardous Waste Solid, (Soil Contaminated with Hydraulic Oil)	1	DF	150	Pounds	352	795797	001087023 VES	Russ Jones	12/2/2015	Veolia Environmental Solutions

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	Qty.	Type								
Non-RCRA Hazardous Waste Solid, (Absorbent Rags)	5	DM	1,250	Pounds	352	540405	001087023 VES	Russ Jones	12/2/2015	Veolia Environmental Solutions
Non-RCRA hazardous Waste Solid, (Soil Contaminated with Hydraulic Oil)	1	DM	500	Pounds	352	795797	001087023 VES	Russ Jones	12/2/2015	Veolia Environmental Solutions
Waste Flammable Liquids, n.o.s. (Petroleum Distillates, Ethyl benzene), 3, II	1	DF	10	Pounds	F003 / D001 / 331	719101	001087099 VES	Russ Jones	12/2/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste, Liquid, (Used Oil)	1	DM	400	Pounds	221	750292	001087099 VES	Russ Jones	12/2/2015	Veolia Environmental Solutions
Non-RCRA Hazardous Waste, Liquid, (Used Oil)	1	DM	400	Pounds	221	750292	001087099 VES	Russ Jones	12/2/2015	Veolia Environmental Solutions