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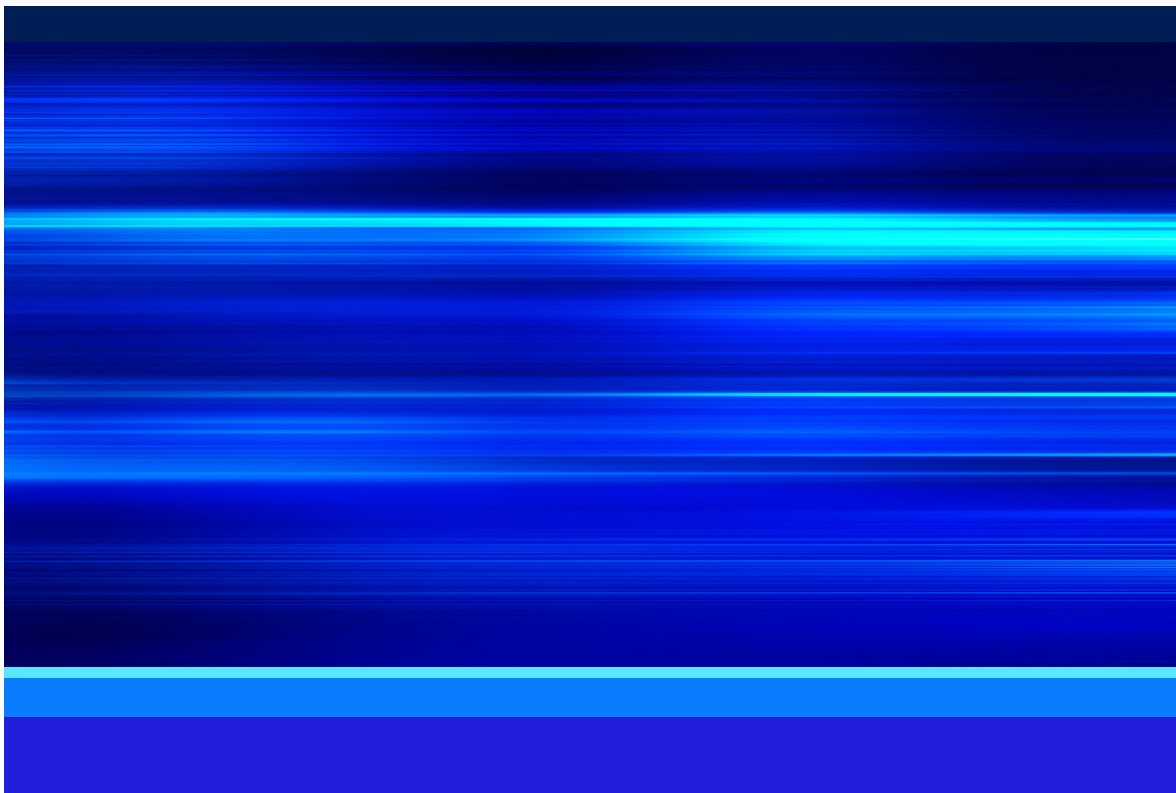
Revised General Arrangement Refinement

Submitted to
California Energy Commission

Prepared by
Morton Bay Geothermal LLC

With assistance from
Jacobs

Morton Bay Geothermal Project
(23-AFC-01)
November 17, 2023



Introduction

The Morton Bay Geothermal LLC's¹ (Applicant) is submitting this project refinement to the California Energy Commission (CEC) for a revised general arrangement drawing for the Morton Bay Geothermal Project (MBGP) (23-AFC-01) Application for Certification (AFC).

The changed to the MBGP project description includes shifting the project south on the proposed parcel and changes to the general arrangement. The purpose for shifting the project site to the southern portion of the proposed parcel is to reduce the potential of the mud pots, located east of the project site, from migrating onto the site in the future. The changes to the general arrangement include shifting equipment within the project site to reduce material or construction costs. Equipment designs, physical parameters (height, width, lengths) and throughputs have not changed, with the exception of the cooling tower which has been redesigned from two, seven cell towers to a single 14 cell cooling tower. In addition, some well pads have been slightly altered in size and orientation but remain in the same approximate locations.

New or revised figures from the MBGP AFC will have "R" following the original number, indicating revision 1. This change is only expected to primarily affect the topic areas of air quality and public health, however figures for other technical disciplines have been updated to reflect the updated project site location.

¹ An indirect, wholly owned subsidiary of BHE Renewables, LLC ("BHER")

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Acronyms and Abbreviations

AFC	Application for Certification
ANSI	American National Standards Institute
ARMR	Archaeological Resource Management Report
BHER	BHE Renewables
CEC	California Energy Commission
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
CPUC	California Public Utilities Commission
DA	Data Adequacy
EMF	Electric and Magnetic Fields
ENGP	Elmore North Geothermal Project
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
IEEE	Institute of Electrical and Electronics Engineers
LORS	laws, ordinances, regulations, and standards
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
NAHC	Native American Heritage Commission
NPCA	Notice of Proposed Construction or Alteration
PRC	Public Resource Code
TLS&N	Transmission Line Safety and Nuisance
USACE	US Army Corps of Engineers
USFWS	US Fish and Wildlife Service

1. Project Description Changes

The Applicant has identified refinements to the orientation, placement, number, and type of specific pieces of equipment on the MBGP site. The production or re-injection of geothermal fluid and the throughput of process equipment remain as proposed in the AFC. Below is a summary of the project design changes.

- **Reduced Number of Emergency Diesel Generators:** The number of generators has decreased from 4 to 3 due to updated operational electrical load information. The generators have been relocated nearer to the medium voltage bus to optimize the design and reduce quantities.
- **Stormwater Retention Basin – Relocated** to be more central to the project site.
- **Change to Storage of Hydrochloric acid (HCL):** change amount of hydrochloric acid (HCL) stored on site from 1,250 gallons of 37% HCL to one, 800-gallon tank of dilute HCL (2.5%) and one, 20,000-gallon tank of concentrated HCL (<37%). Included a HCL scrubbing system on both HCL tanks.
- **Addition of a 10,300 gallon tank of liquid lime (42-47% Calcium Hydroxide),** used for pH adjustment of the filtrate from Horizontal Belt Filter.
- **Horizontal Belt Filter-** Relocated the belt filter and optimized the truck hauling path to allow for a pull through design and reduced pipe rack length and piping runs.
- **Combination of Admin/Warehouse –** The admin/control buildings were relocated to allow for greater onsite security allowing for public access and parking outside of the fence line.
- **Power Distribution Centers –** Optimized Power Distribution Centers locations due to updated load locations
- **Cooling Tower –** The cooling tower design changed from two, seven cell towers to a single 14 cell tower.
- **Primary/Secondary Clarifiers –** The clarifiers arrangements were optimized to reduce concrete, pipe rack, piping, and electrical quantities.
- **HP Separators, SP and LP Crystallizers –** Optimized the centerlines of the HP separators and brought the crystallizers in line to reduce pipe rack quantities.
- **Gas Removal System –** The gas removal system was relocated to below the steam turbine to utilize the space below the steam turbine.
- **Thickener –** The thickener was relocated closer to the brine handling process to reduce construction costs.
- **Evapotranspiration Bed –** The evapotranspiration bed location was relocated closer to the control building.
- **Chemical Storage –** Chemical storage locations were optimized for safe loading/unloading and pull through routes.

Based on these changes, the Applicant is submitting the following revised AFC figures by section.

2. Executive Summary

The following revised Executive Summary figures are being submitted.

- Figure 1-3 Architectural Rendering
- Figure 1-4 Project Location



Figure 1-3R
Architectural Rendering,
Morton Bay Geothermal Project
Imperial County, California

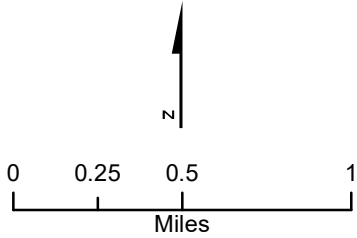
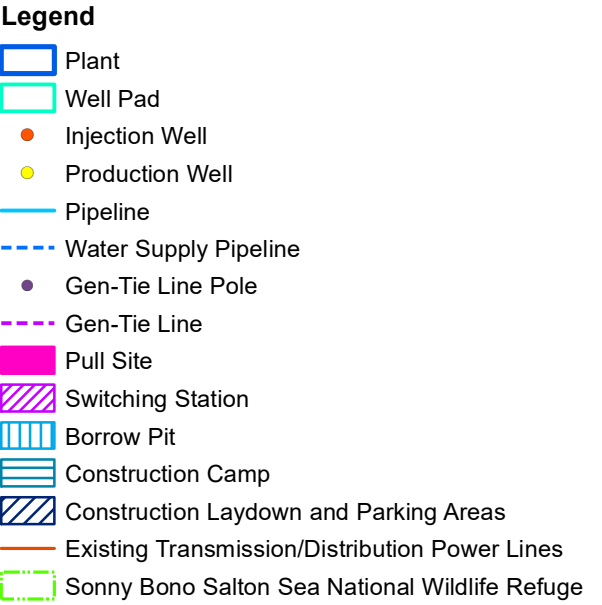
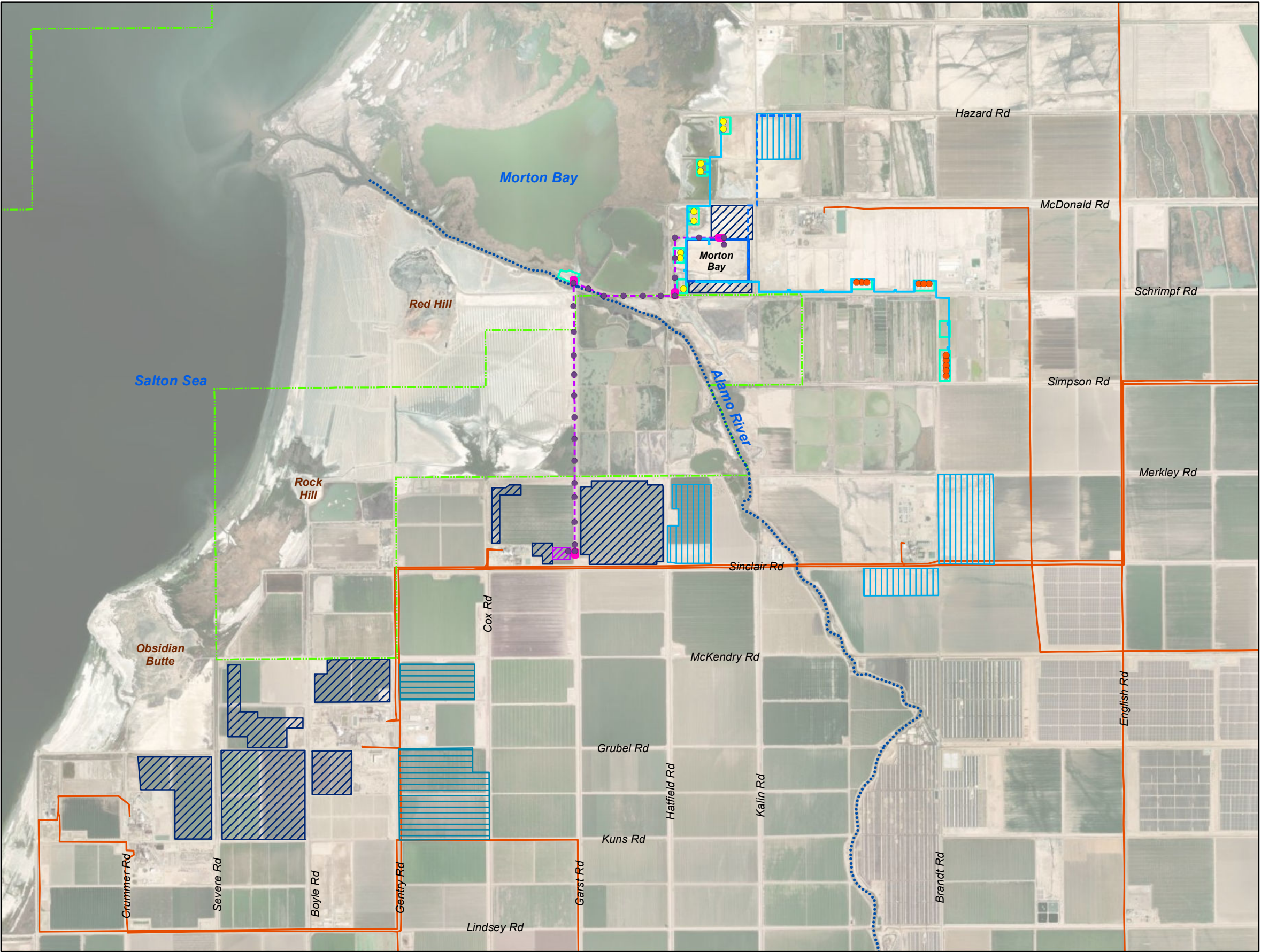
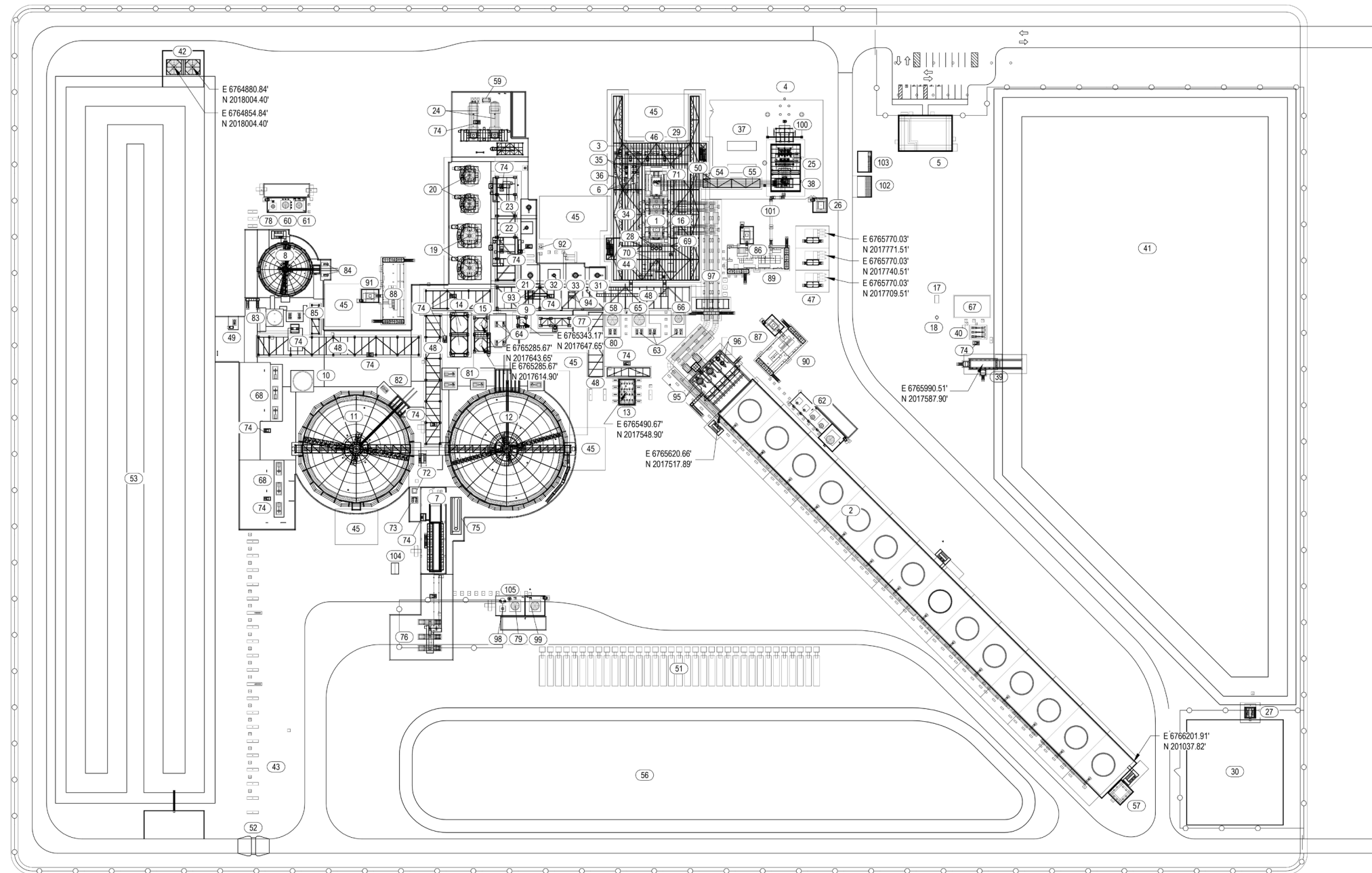


Figure 1-4R
Project Location
Morton Bay Geothermal Project
Imperial County, California

3. Project Description

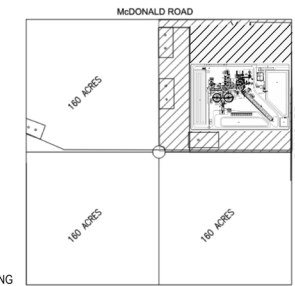
The following revised Project Description figures are being submitted.

- Figure 2-1R General Arrangement
- Figure 2-4aR Elevation View Looking North
- Figure 2-4bR Elevation View Looking South
- Figure 2-4cR Elevation View Looking East and West
- Figure 2-5R Peak Water Balance
- Figure 2-6bR Post-Construction Drainage
- Figure 2-7aR Depth of Excavation
- Figure 2-7bR Depth of Excavation
- Figure 2-7cR Depth of Excavation
- Figure DA4.0-1aR Production Wells
- Figure DA4.0-1bR Injection Wells



LEGEND:

1. STEAM TURBINE
2. COOLING TOWER
3. VACUUM PUMP SKIDS A/B/C
4. SUBSTATION
5. CONTROL / MAINTENANCE BUILDING
6. EJECTORS A/B/C
7. HORIZONTAL BELT FILTER
8. THICKENER
9. SCRUBBER/DEMISTER DRAIN AFT
10. HEAD TANK
11. SECONDARY CLARIFIER
12. PRIMARY CLARIFIER
13. ROCK MUFFLER
14. PROCESS AFT A/B
15. DILUTION WATER HEATER A/B
16. CONDENSER
17. CONTROL / MAINTENANCE BUILDING SEPTIC TANK
18. CONTROL / MAINTENANCE BUILDING SANITARY LIFT STATION
19. LP CRYSTALLIZER A/B
20. SP CRYSTALLIZER A/B
21. LP SCRUBBER
22. SP SCRUBBER
23. HP SCRUBBER
24. HP SEPARATOR A/B
25. GENERATOR STEP-UP TRANSFORMER
26. ALTERNATE FEED TRANSFORMER
27. CANAL WET WELL AND PUMPS
28. HOTWELL PUMPS
29. SEAL WATER COOLER
30. EVAPOTRANSPIRATION (E-T) BED
31. HP DEMISTER
32. SP DEMISTER
33. LP DEMISTER
34. INSTRUMENT AIR COMPRESSOR A/B
35. INSTRUMENT AIR / SERVICE AIR RECEIVERS
36. AIR COMPRESSOR CHILLER UNIT A/B
37. SUBSTATION CONTROL ENCLOSURE
38. UNIT AUXILIARY TRANSFORMER
39. FIRE WATER PUMP ENCLOSURE
40. SERVICE WATER PUMPS
41. FRESH WATER POND
42. WARM-UP AFT
43. HYDRO BLAST PAD
44. LUBE OIL COOLER
45. CRANE ACCESS
46. GANTRY CRANE
47. DIESEL GENERATOR
48. PIPE RACK
49. EMERGENCY BRINE POND PUMPS
50. VT-SURGE CUBICLE
51. TRAILER PARKING
52. CULVERT
53. BRINE POND
54. GENERATOR CIRCUIT BREAKER
55. ISOLATED PHASE BUS DUCT
56. STORM WATER RETENTION BASIN
57. OX BOX
58. BLOWDOWN STORAGE TANK
59. ANTI-FOAM STORAGE AND DOSING SYSTEM
60. NORMS STORAGE AND DOSING SYSTEM
61. FLOCCULANT STORAGE AND DOSING SYSTEM
62. COOLING TOWER CHEMICAL FEED SYSTEM
63. CONDENSATE HP/SP/LP PUMPS
64. DILUTION WATER HEATER PUMPS
65. SP/LP CONDENSATE STORAGE TANK
66. HP CONDENSATE STORAGE TANK
67. POTABLE WATER SYSTEM
68. BRINE INJECTION / BOOSTER PUMPS A/B/C
69. OIL PURIFIER
70. STG LUBE OIL MODULE
71. NEUTRAL GROUND ENCLOSURE
72. LOCAL SERVICE WATER HOLDING TANK
73. SERVICE WATER BOOSTER PUMPS A/B
74. AREA SUMP / PUMP
75. HORIZONTAL BELT FILTER COOLER
76. CONVEYOR SYSTEM
77. AFT SEPARATOR TANK
78. BRINE INJECTION ANTISCALANT DOSING
79. CONCENTRATED HCL STORAGE
80. CONDENSATE INJECTION WELL PUMPS
81. PRIMARY CLARIFIER SEED RECYCLE MAIN / BOOSTER PUMPS
82. SECONDARY CLARIFIER SEED RECYCLE PUMPS
83. AERATED BRINE STORAGE TANK
84. THICKENER UNDERFLOW PUMPS
85. AERATED BRINE BOOSTER / INJECTION PUMPS
86. MEDIUM VOLTAGE ELECTRICAL ENCLOSURE
87. COOLING TOWER ELECTRICAL ENCLOSURE
88. BRINE INJECTION ELECTRICAL ENCLOSURE
89. MEDIUM VOLTAGE ELECTRICAL ENCLOSURE SUS TRANSFORMERS
90. COOLING TOWER ELECTRICAL ENCLOSURE SUS TRANSFORMERS
91. BRINE INJECTION ELECTRICAL ENCLOSURE SUS TRANSFORMERS
92. VESSEL DRAIN AFT
93. LP SCRUBBER DRAIN PUMP
94. LP DEMISTER DRAIN PUMP
95. CIRCULATING WATER PUMPS A/B
96. COMPONENT COOLING WATER PUMPS A/B
97. CIRCULATING WATER PIPING
98. 2.5% HCL DOSING
99. LIQUID LIME STORAGE AND DOSING
100. 230KV BREAKER
101. NON-SEGREGATED PHASE BUS DUCT
102. NEW OIL STORAGE AREA
103. OIL STORAGE AREA
104. COOLING HUT
105. ACID FUME SCRUBBER



MORTON BAY LOCATION PLAN

TOWNSHIP 11 SOUTH, RANGE 13 E,
SECTION 23, NE 1/4 OF NE 1/4
APPROXIMATELY 80 ACRES

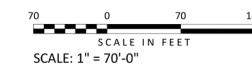


Figure 2-1R
General Arrangement,
Morton Bay Geothermal Project
Imperial County, California

LEGEND:

- | | | | | |
|---------------------------|--------------|---------------------------------|---|------------------------------------|
| 1. NOT USED | 21. NOT USED | 43. HYDRO BLAST PAD | 65. NOT USED | 87. NOT USED |
| 2. COOLING TOWER | 22. NOT USED | 44. NOT USED | 66. NOT USED | 88. NOT USED |
| 3. NOT USED | 23. NOT USED | 45. NOT USED | 67. NOT USED | 89. NOT USED |
| 4. NOT USED | 24. NOT USED | 46. NOT USED | 68. BRINE INJECTION / BOOSTER PUMPS A/B/C | 90. NOT USED |
| 5. NOT USED | 25. NOT USED | 47. NOT USED | 69. NOT USED | 91. NOT USED |
| 6. NOT USED | 26. NOT USED | 48. PIPE RACK | 70. NOT USED | 92. NOT USED |
| 7. HORIZONTAL BELT FILTER | 27. NOT USED | 49. EMERGENCY BRINE POND PUMPS | 71. NOT USED | 93. NOT USED |
| 8. NOT USED | 28. NOT USED | 50. NOT USED | 72. NOT USED | 94. NOT USED |
| 9. NOT USED | 29. NOT USED | 51. TRAILER PARKING | 73. NOT USED | 95. CIRCULATING WATER PUMPS A/B |
| 10. NOT USED | 30. NOT USED | 52. NOT USED | 74. AREA SUMP / PUMP | 96. NOT USED |
| 11. SECONDARY CLARIFIER | 31. NOT USED | 53. BRINE POND | 75. NOT USED | 97. CIRCULATING WATER PIPING |
| 12. PRIMARY CLARIFIER | 32. NOT USED | 54. NOT USED | 76. NOT USED | 98. 2.5% HCL DOSING |
| 13. ROCK MUFFLER | 33. NOT USED | 55. NOT USED | 77. NOT USED | 99. LIQUID LIME STORAGE AND DOSING |
| 14. NOT USED | 34. NOT USED | 56. STORM WATER RETENTION BASIN | 78. NOT USED | 100. NOT USED |
| 15. NOT USED | 35. NOT USED | 57. OX BOX | 79. CONCENTRATED HCL STORAGE | 101. NOT USED |
| 16. NOT USED | 36. NOT USED | 58. NOT USED | 80. NOT USED | 102. NOT USED |
| 17. NOT USED | 37. NOT USED | 59. NOT USED | 81. NOT USED | 103. NOT USED |
| 18. NOT USED | 38. NOT USED | 60. NOT USED | 82. NOT USED | 104. NOT USED |
| 19. NOT USED | 39. NOT USED | 61. NOT USED | 83. NOT USED | 105. ACID FUME SCRUBBER |
| 20. NOT USED | 40. NOT USED | 62. NOT USED | 84. NOT USED | |
| | 41. NOT USED | 63. NOT USED | 85. NOT USED | |
| | 42. NOT USED | 64. NOT USED | 86. NOT USED | |

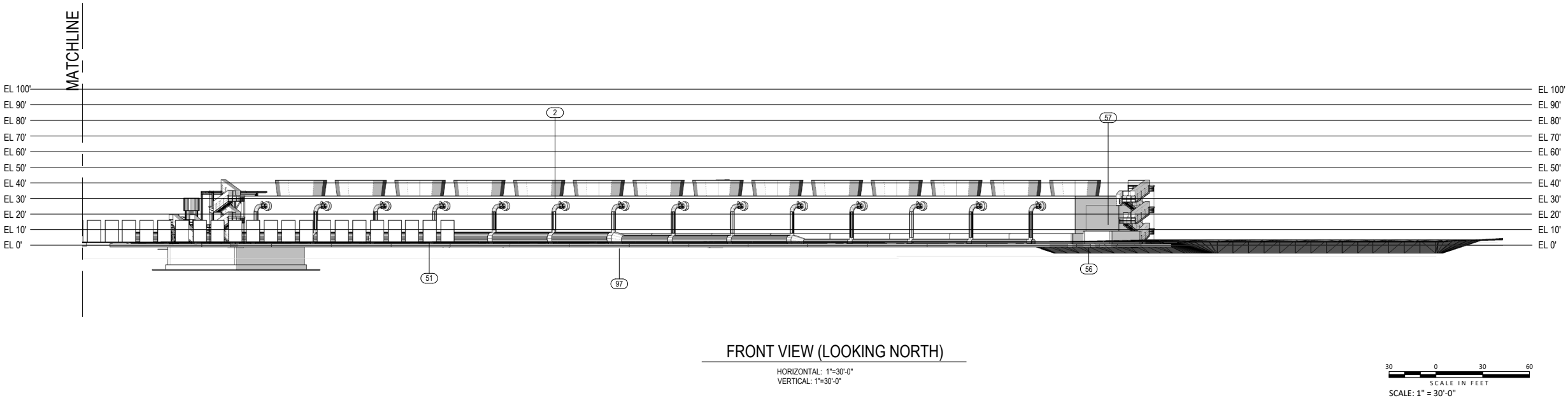
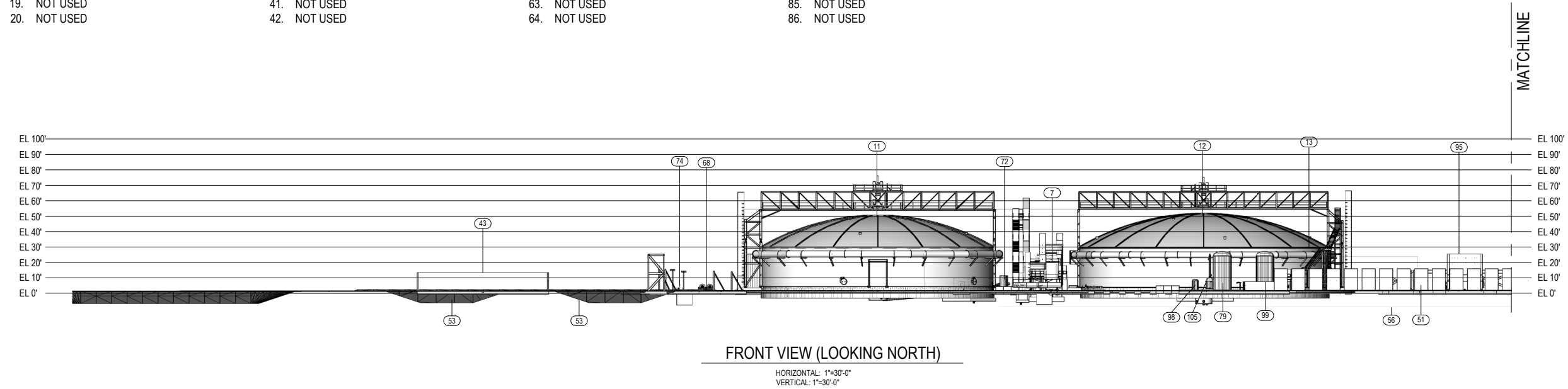
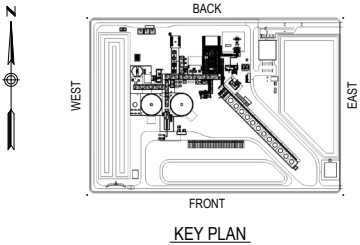
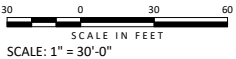


Figure 2-4aR
Elevation View Looking North,
Morton Bay Geothermal Project
Imperial County, California



LEGEND:

- | | | | | |
|-----------------------------------|--|--|--|--|
| 1. STEAM TURBINE | 22. NOT USED | 45. NOT USED | 67. POTABLE WATER SYSTEM | 90. NOT USED |
| 2. NOT USED | 23. HP SCRUBBER | 46. GANTRY CRANE | 68. NOT USED | 91. BRINE INJECTION ELECTRICAL ENCLOSURE |
| 3. VACUUM PUMP SKIDS A/B/C | 24. HP SEPARATOR A/B | 47. DIESEL GENERATOR | 69. NOT USED | SUS TRANSFORMERS |
| 4. NOT USED | 25. GENERATOR STEP-UP TRANSFORMER | 48. PIPE RACK | 70. NOT USED | 92. VESSEL DRAIN AFT |
| 5. CONTROL / MAINTENANCE BUILDING | 26. ALTERNATE FEED TRANSFORMER | 49. EMERGENCY BRINE POND PUMPS | 71. NOT USED | 93. NOT USED |
| 6. EJECTORS A/B/C | 27. NOT USED | 50. VT-SURGE CUBICLE | 72. NOT USED | 94. NOT USED |
| 7. NOT USED | 28. HOTWELL PUMPS | 51. NOT USED | 73. NOT USED | 95. NOT USED |
| 8. THICKENER | 29. SEAL WATER COOLER | 52. NOT USED | 74. NOT USED | 96. NOT USED |
| 9. SCRUBBER/DEMISTER DRAIN AFT | 30. NOT USED | 53. BRINE POND | 75. NOT USED | 97. CIRCULATING WATER PIPING |
| 10. NOT USED | 31. HP DEMISTER | 54. NOT USED | 76. NOT USED | 98. NOT USED |
| 11. NOT USED | 32. SP DEMISTER | 55. ISOLATED PHASE BUS DUCT | 77. NOT USED | 99. NOT USED |
| 12. NOT USED | 33. LP DEMISTER | 56. NOT USED | 78. BRINE INJECTION ANTISCALANT DOSING | 100. 230kV BREAKER |
| 13. NOT USED | 34. NOT USED | 57. NOT USED | 79. NOT USED | 101. NOT USED |
| 14. PROCESS AFT A/B | 35. INSTRUMENT AIR / SERVICE AIR RECEIVERS | 58. NOT USED | 80. NOT USED | 102. NOT USED |
| 15. DILUTION WATER HEATER A/B | 36. NOT USED | 59. ANTI-FOAM STORAGE AND DOSING SYSTEM | 81. NOT USED | 103. NOT USED |
| 16. CONDENSER | 37. NOT USED | 60. NORMS STORAGE AND DOSING SYSTEM | 82. NOT USED | 104. NOT USED |
| 17. NOT USED | 38. NOT USED | 61. FLOCCULANT STORAGE AND DOSING SYSTEM | 83. NOT USED | 105. NOT USED |
| 18. NOT USED | 39. NOT USED | 62. NOT USED | 84. THICKENER UNDERFLOW PUMPS | |
| 19. LP CRYSTALLIZER A/B | 40. NOT USED | 63. NOT USED | 85. NOT USED | |
| 20. SP CRYSTALLIZER A/B | 41. FRESH WATER POND | 64. NOT USED | 86. NOT USED | |
| 21. LP SCRUBBER | 42. WARM-UP AFT | 65. NOT USED | 87. NOT USED | |
| | 43. NOT USED | 66. NOT USED | 88. BRINE INJECTION ELECTRICAL ENCLOSURE | |
| | 44. NOT USED | | 89. NOT USED | |

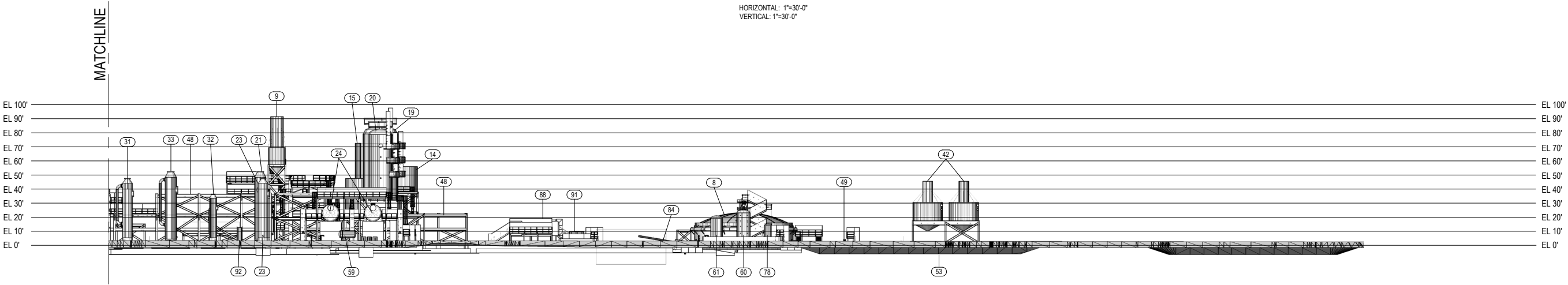
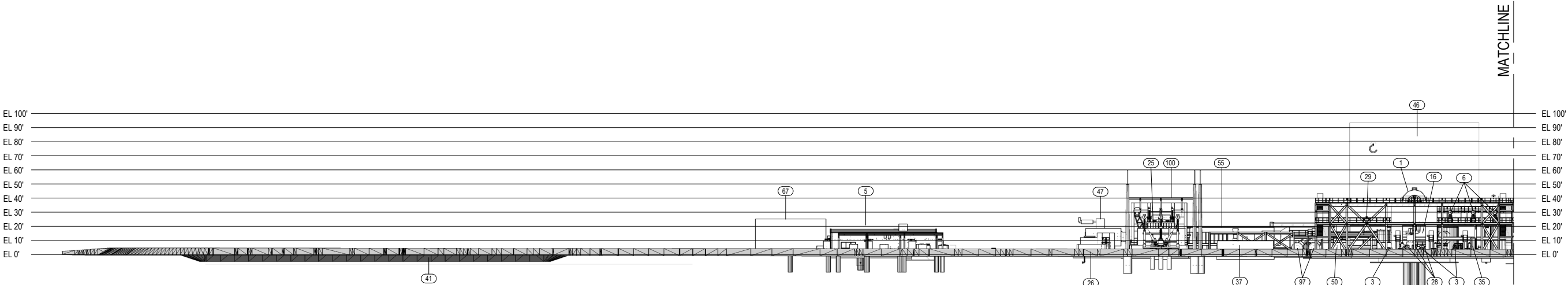
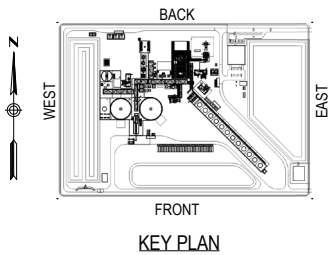
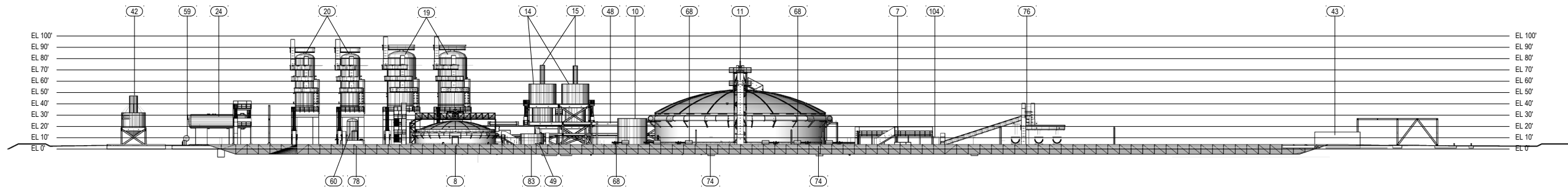
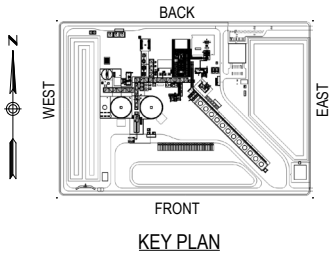


Figure 2-4bR
Elevation View Looking South,
Morton Bay Geothermal Project
Imperial County, California



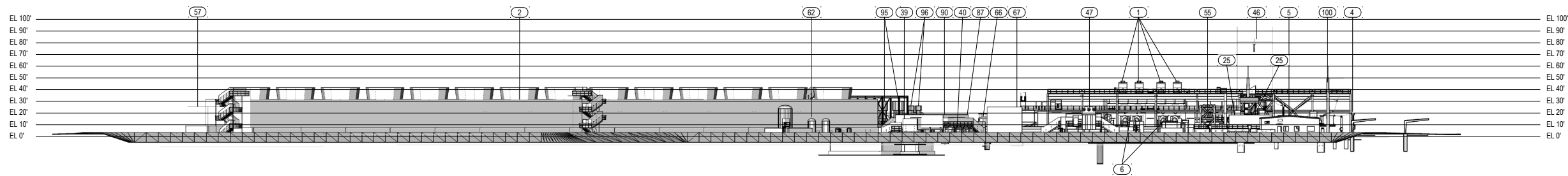
LEGEND:

- | | | | | |
|-----------------------------------|-----------------------------------|---|---|---------------------------------------|
| 1. STEAM TURBINE | 22. NOT USED | 45. NOT USED | 68. BRINE INJECTION / BOOSTER PUMPS A/B/C | SUS TRANSFORMERS |
| 2. COOLING TOWER | 23. NOT USED | 46. GANTRY CRANE | 69. NOT USED | 91. NOT USED |
| 3. NOT USED | 24. HP SEPARATOR A/B | 47. DIESEL GENERATOR | 70. NOT USED | 92. NOT USED |
| 4. SUBSTATION | 25. GENERATOR STEP-UP TRANSFORMER | 48. PIPE RACK | 71. NOT USED | 93. NOT USED |
| 5. CONTROL / MAINTENANCE BUILDING | 26. NOT USED | 49. EMERGENCY BRINE POND PUMPS | 72. NOT USED | 94. NOT USED |
| 6. CONDENSER | 27. NOT USED | 50. NOT USED | 73. NOT USED | 95. CIRCULATING WATER PUMPS A/B |
| 7. HORIZONTAL BELT FILTER | 28. NOT USED | 51. NOT USED | 74. AREA SUMP / PUMP | 96. COMPONENT COOLING WATER PUMPS A/B |
| 8. THICKENER | 29. NOT USED | 52. NOT USED | 75. NOT USED | 97. NOT USED |
| 9. NOT USED | 30. NOT USED | 53. NOT USED | 76. CONVEYOR SYSTEM | 98. NOT USED |
| 10. HEAD TANK | 31. NOT USED | 54. NOT USED | 77. NOT USED | 99. NOT USED |
| 11. SECONDARY CLARIFIER | 32. NOT USED | 55. ISOLATED PHASE BUS DUCT | 78. BRINE INJECTION ANTISCALANT DOSING | 100. 230kV BREAKER |
| 12. NOT USED | 33. NOT USED | 56. NOT USED | 79. NOT USED | 101. NOT USED |
| 13. NOT USED | 34. NOT USED | 57. OX BOX | 80. NOT USED | 102. NOT USED |
| 14. PROCESS AFT A/B | 35. NOT USED | 58. NOT USED | 81. NOT USED | 103. NOT USED |
| 15. DILUTION WATER HEATER A/B | 36. NOT USED | 59. ANTI-FOAM STORAGE AND DOSING SYSTEM | 82. NOT USED | 104. COOLING HUT |
| 16. CONDENSER | 37. NOT USED | 60. NORMS STORAGE AND DOSING SYSTEM | 83. AERATED BRINE STORAGE TANK | 105. NOT USED |
| 17. NOT USED | 38. NOT USED | 61. NOT USED | 84. NOT USED | |
| 18. NOT USED | 39. FIRE WATER PUMP ENCLOSURE | 62. COOLING TOWER CHEMICAL FEED SYSTEM | 85. NOT USED | |
| 19. LP CRYSTALLIZER A/B | 40. SERVICE WATER PUMPS | 63. NOT USED | 86. NOT USED | |
| 20. SP CRYSTALLIZER A/B | 41. NOT USED | 64. NOT USED | 87. COOLING TOWER ELECTRICAL ENCLOSURE | |
| 21. NOT USED | 42. WARM-UP AFT | 65. NOT USED | 88. NOT USED | |
| | 43. HYDRO BLAST PAD | 66. HP CONDENSATE STORAGE TANK | 89. NOT USED | |
| | 44. NOT USED | 67. POTABLE WATER SYSTEM | 90. COOLING TOWER ELECTRICAL ENCLOSURE | |



WEST VIEW (LOOKING EAST)

HORIZONTAL: 1"=40'-0"
VERTICAL: 1"=40'-0"

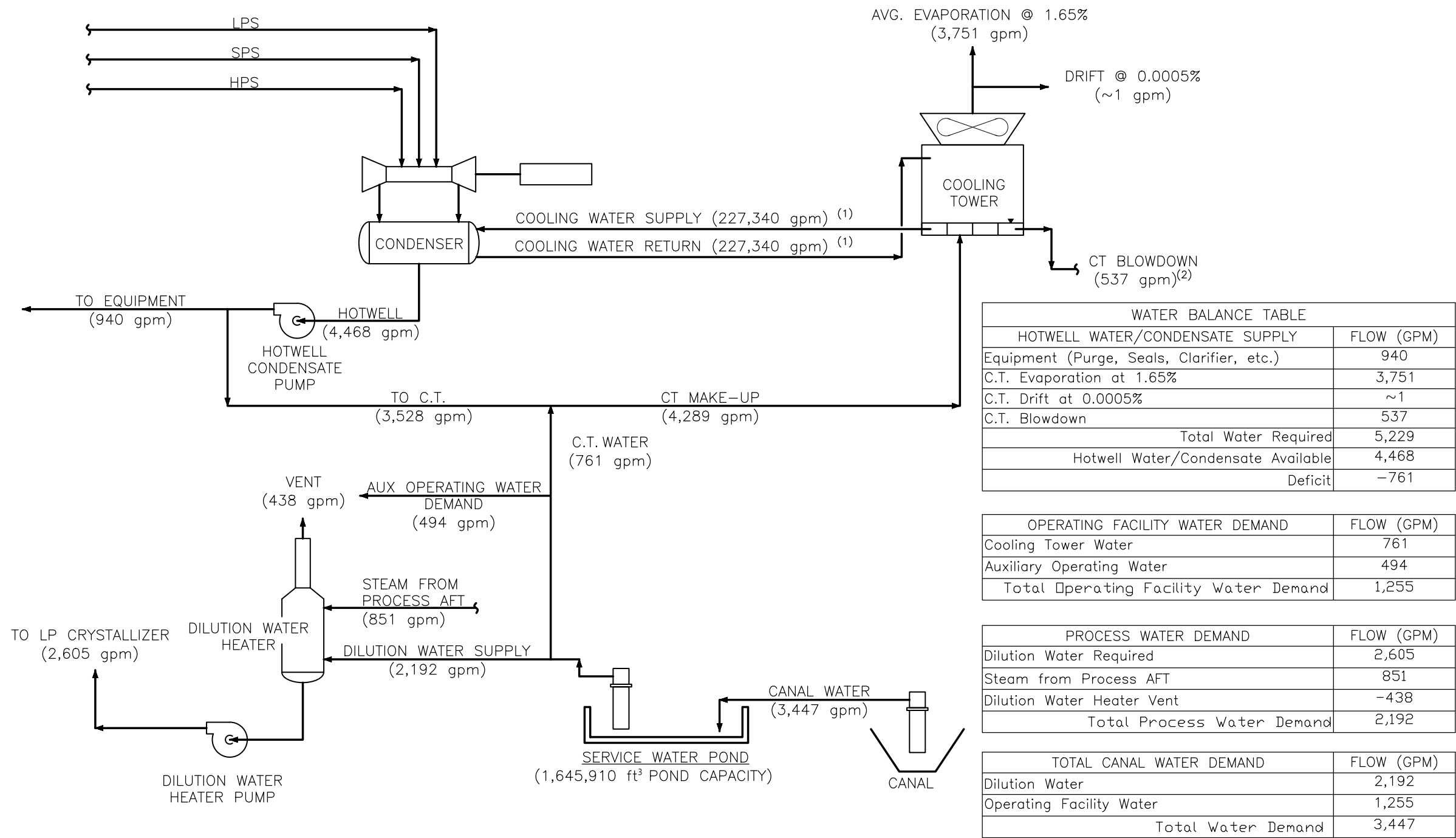


EAST VIEW (LOOKING WEST)

HORIZONTAL: 1"=40'-0"
VERTICAL: 1"=40'-0"

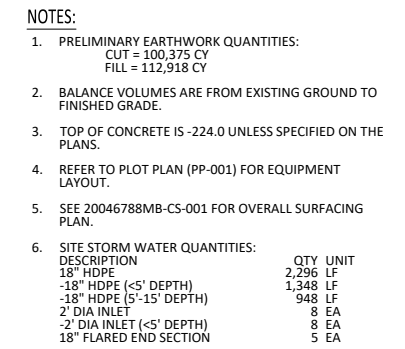
Figure 2-4cR
Elevation View Looking East and West,
Morton Bay Geothermal Project
Imperial County, California

40 0 40 80
SCALE IN FEET
SCALE: 1" = 40'-0"



NOTES:
 1. INCLUDES AN ASSUMED 10,000gpm COMPONENT COOLING WATER.
 2. BASED ON 8 CYCLES OF CONCENTRATION.

Figure 2-5R
Peak Water Balance
Morton Bay Geothermal Project
 Imperial County, California



80 0 80 160
SCALE IN FEET
SCALE: 1" = 80'-0"

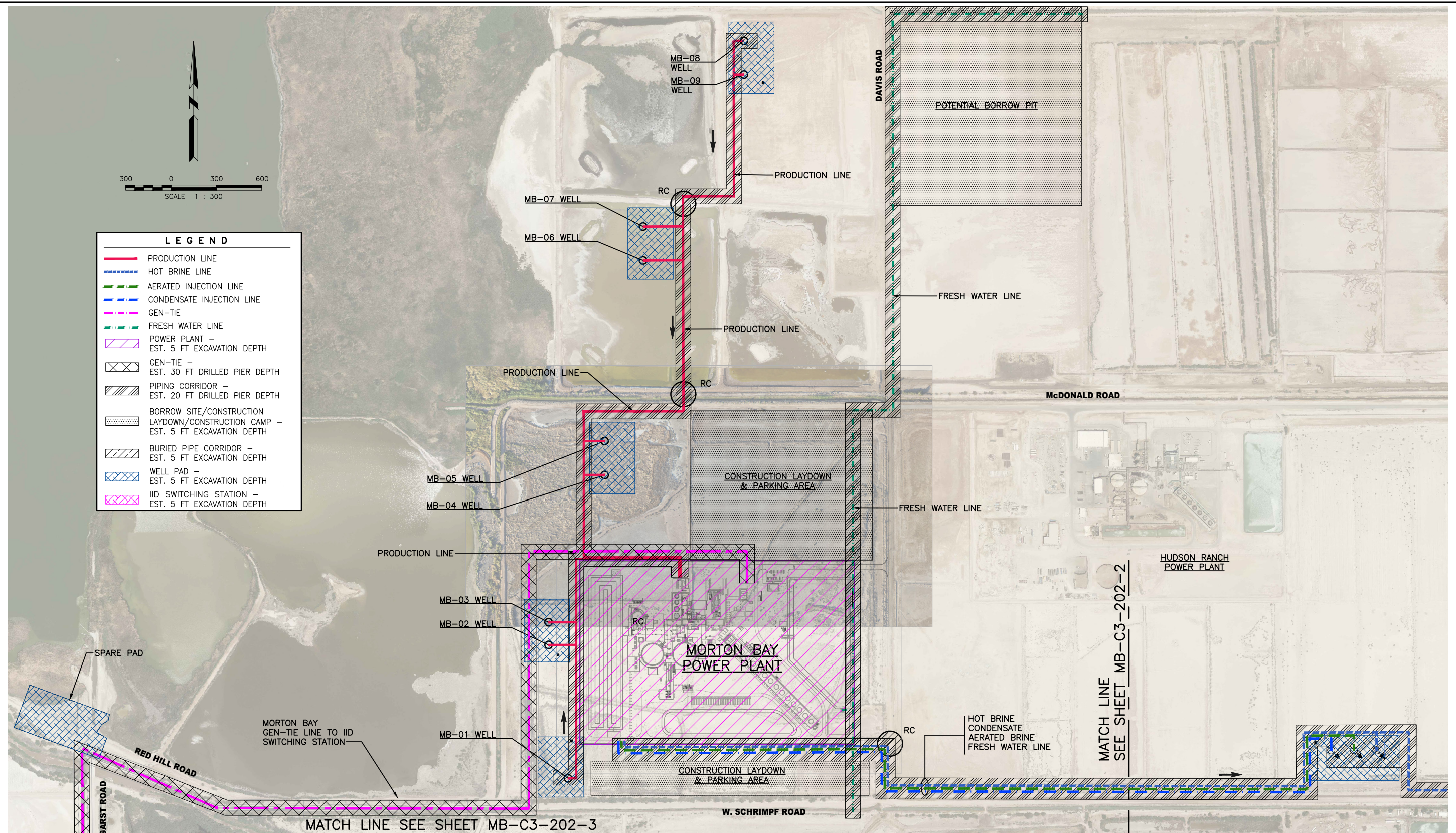


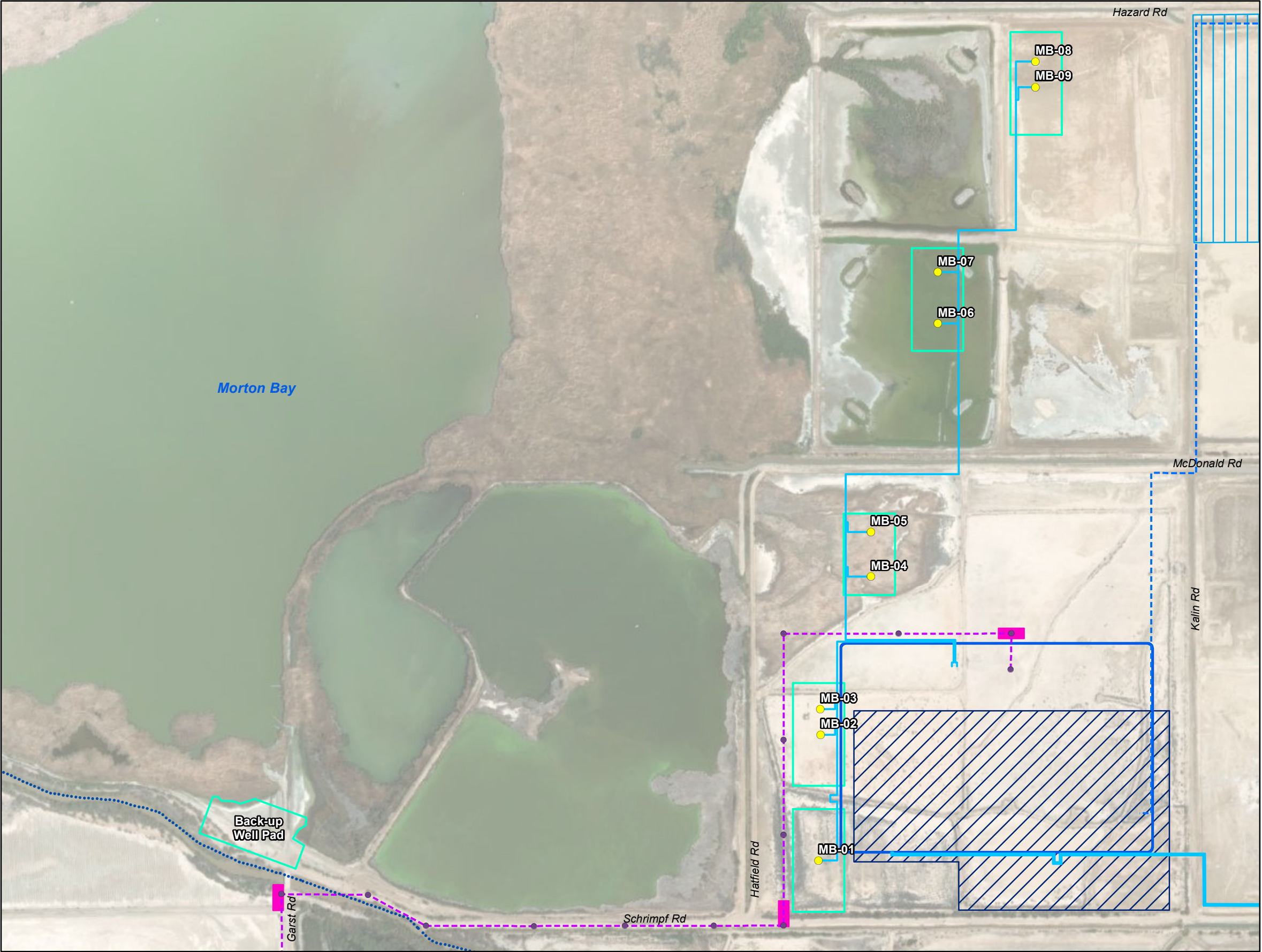
Figure 2-7aR
Depth of Excavation,
Morton Bay Geothermal Project
 Imperial County, California



Figure 2-7bR
Depth of Excavation,
Morton Bay Geothermal Project
 Imperial County, California



Figure 2-7cR
Depth of Excavation,
Morton Bay Geothermal Project
 Imperial County, California



- Legend**
- Plant
 - Well Pad
 - Production Well
 - Pipeline
 - Water Supply Pipeline
 - Gen-Tie Line Pole
 - Gen-Tie Line
 - Pull Site
 - Borrow Pit
 - Construction Laydown and Parking Areas

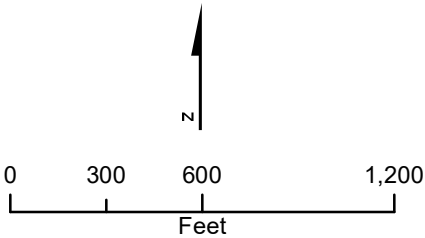
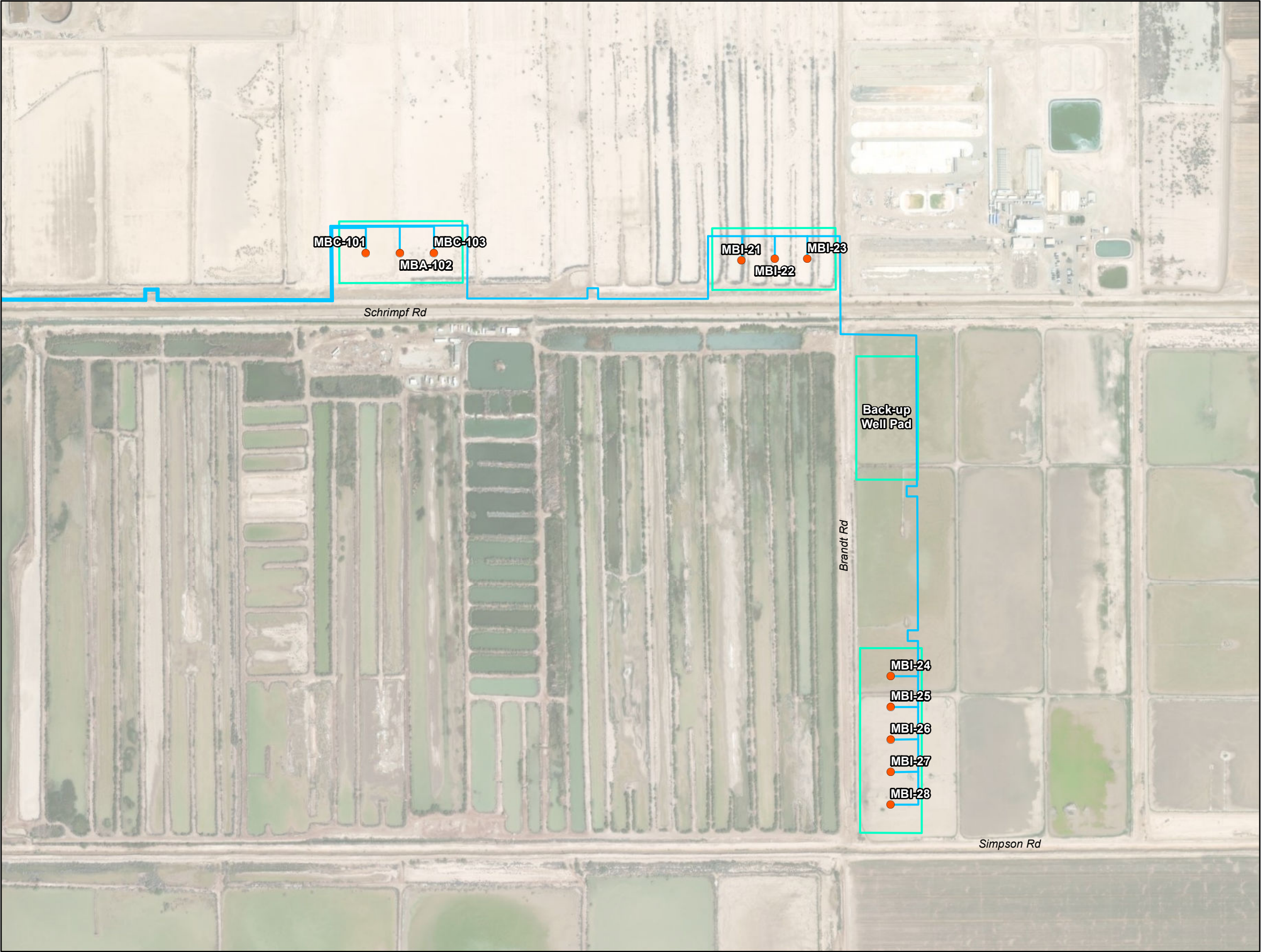


Figure DA4.0-1aR
Production Wells
Morton Bay Geothermal Project
Imperial County, California



- Legend**
- Well Pad
 - Injection Well
 - Pipeline

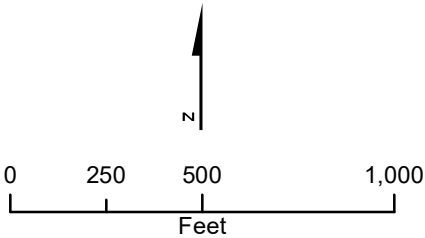


Figure DA4.0-1bR
Injection Wells
Morton Bay Geothermal Project
Imperial County, California

4. Air Quality

Air quality and public health figures, along with updated Air Quality and Public Health AFC sections, were updated within the Applicant's response to Data Request Set #1, which was submitted on November 10, 2023.

5. Biological Resources

The following revised Biological Resources figures are being submitted.

- Figure 5.2-1R Biological Study Area
- Figure 5.2-2R Significant Regional Protected Areas
- Figure 5.2-3R National Wetland Inventory and National Hydrography Dataset
- Figure 5.2-4R Land Cover and Vegetation Types

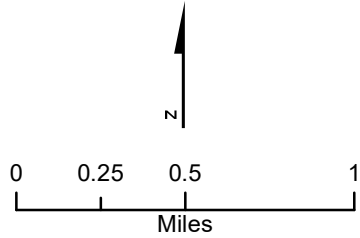
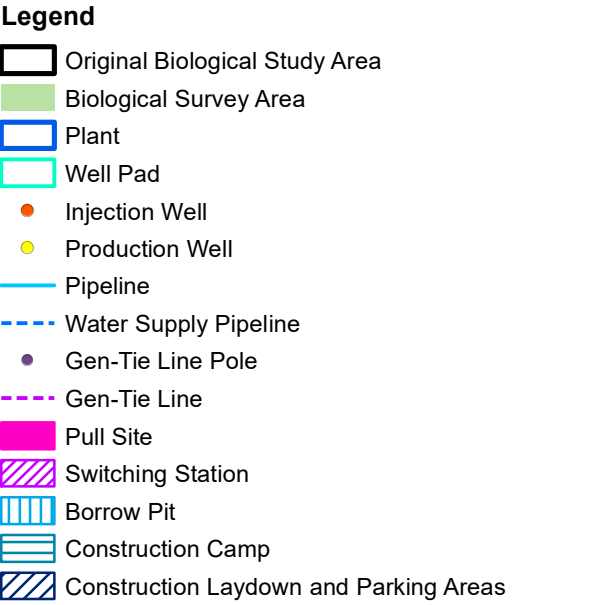
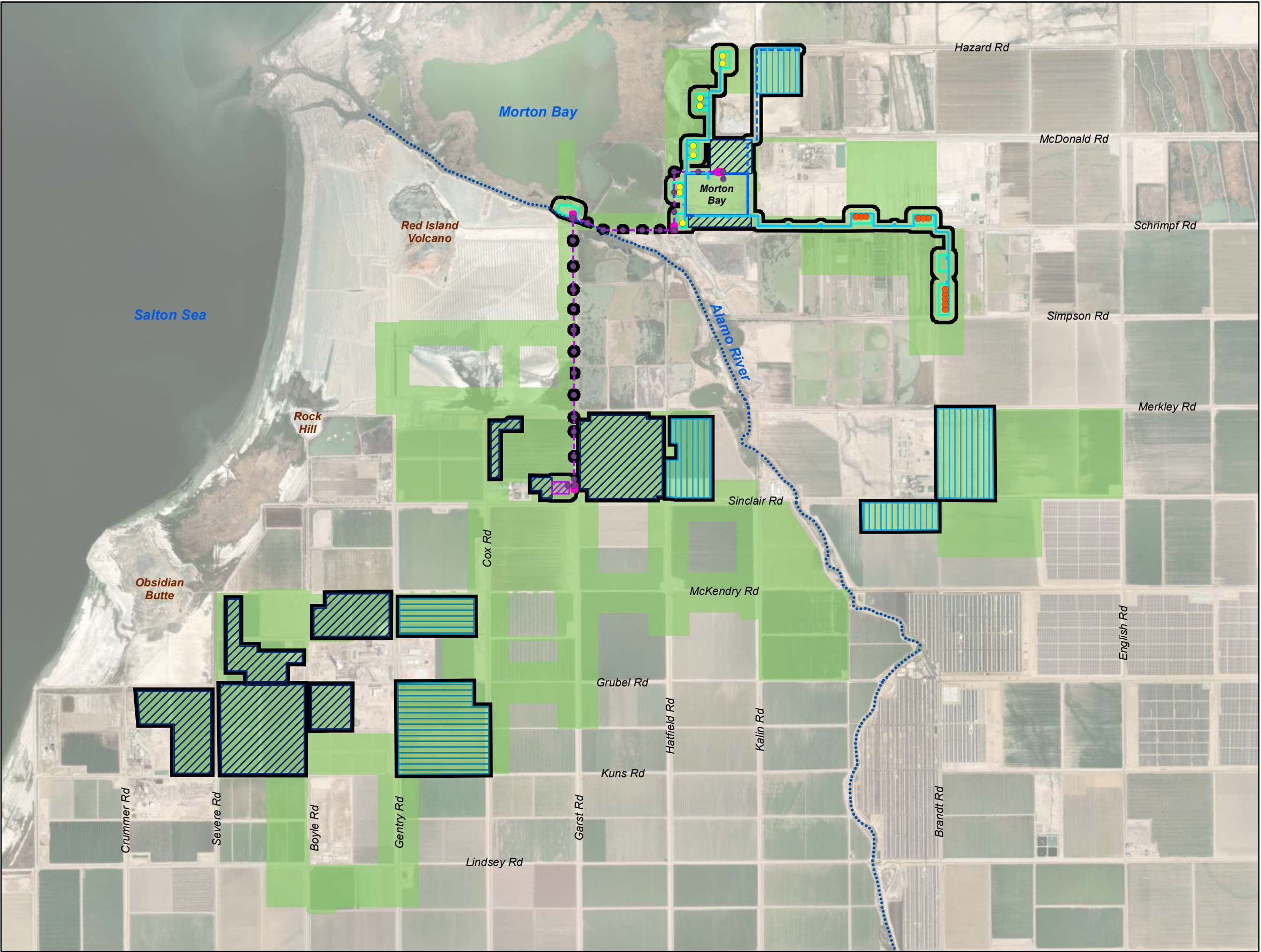


Figure 5.2-1R
Biological Study Area
Morton Bay Geothermal Project
Imperial County, California

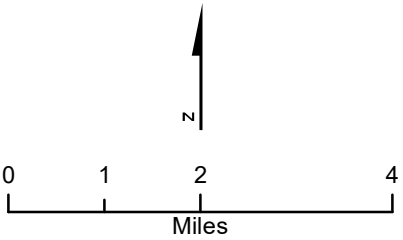
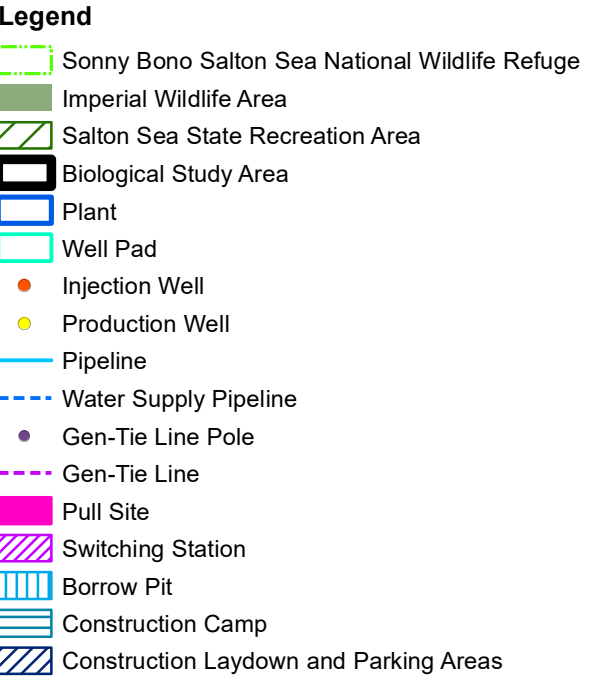
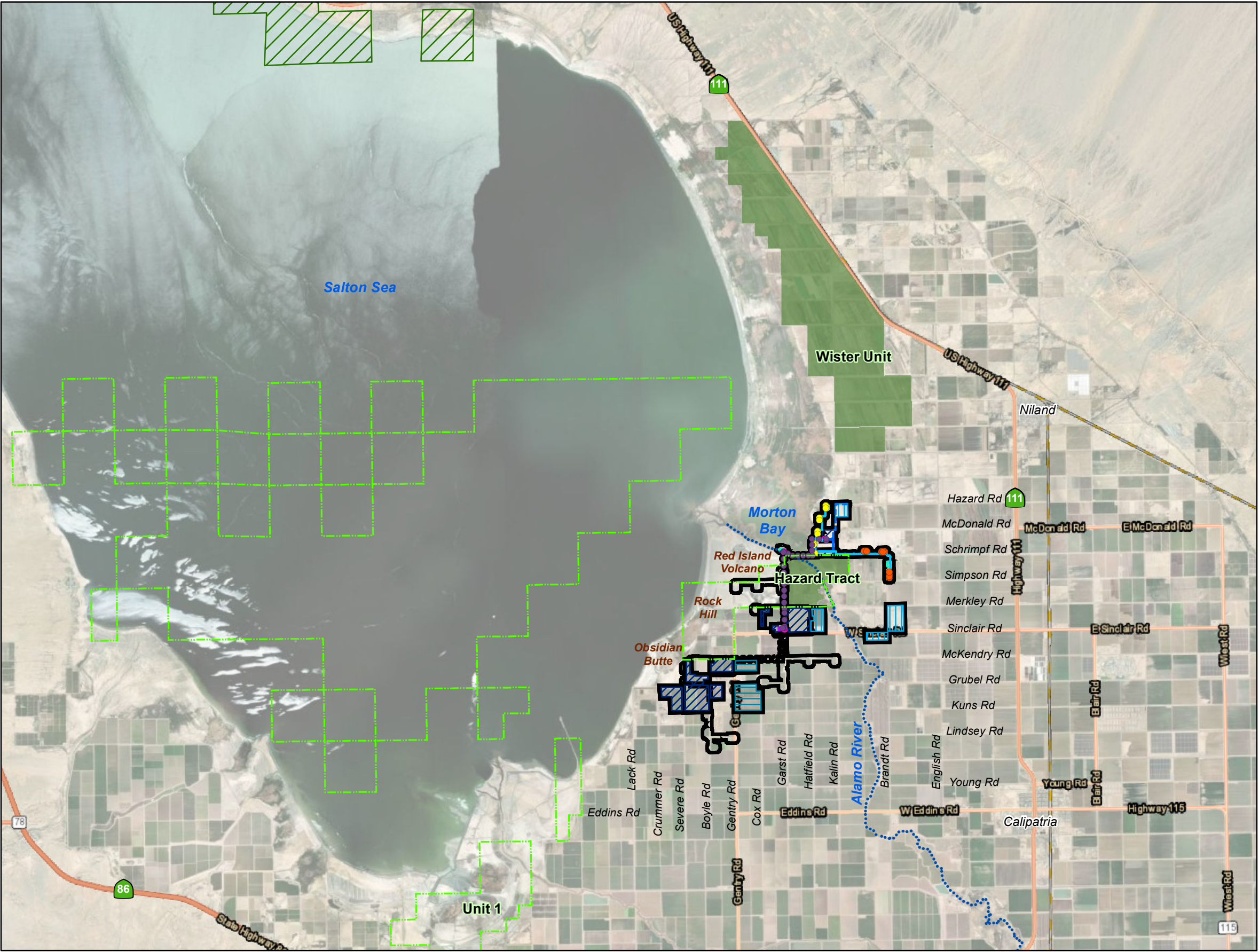


Figure 5.2-2R
Significant Regional Protected Areas
Morton Bay Geothermal Project
Imperial County, California

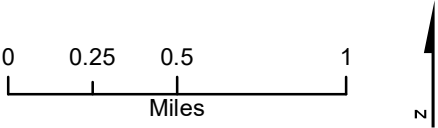
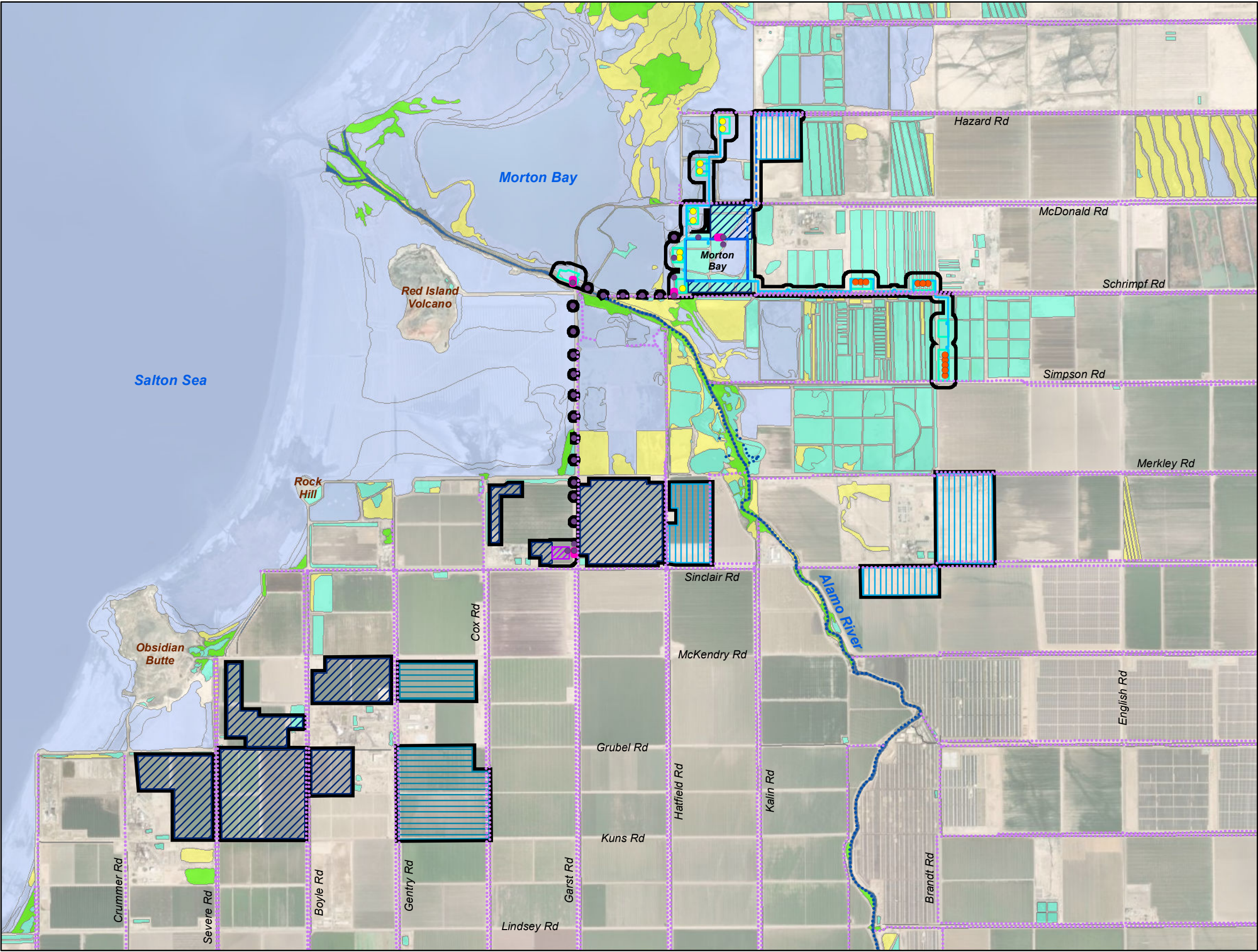
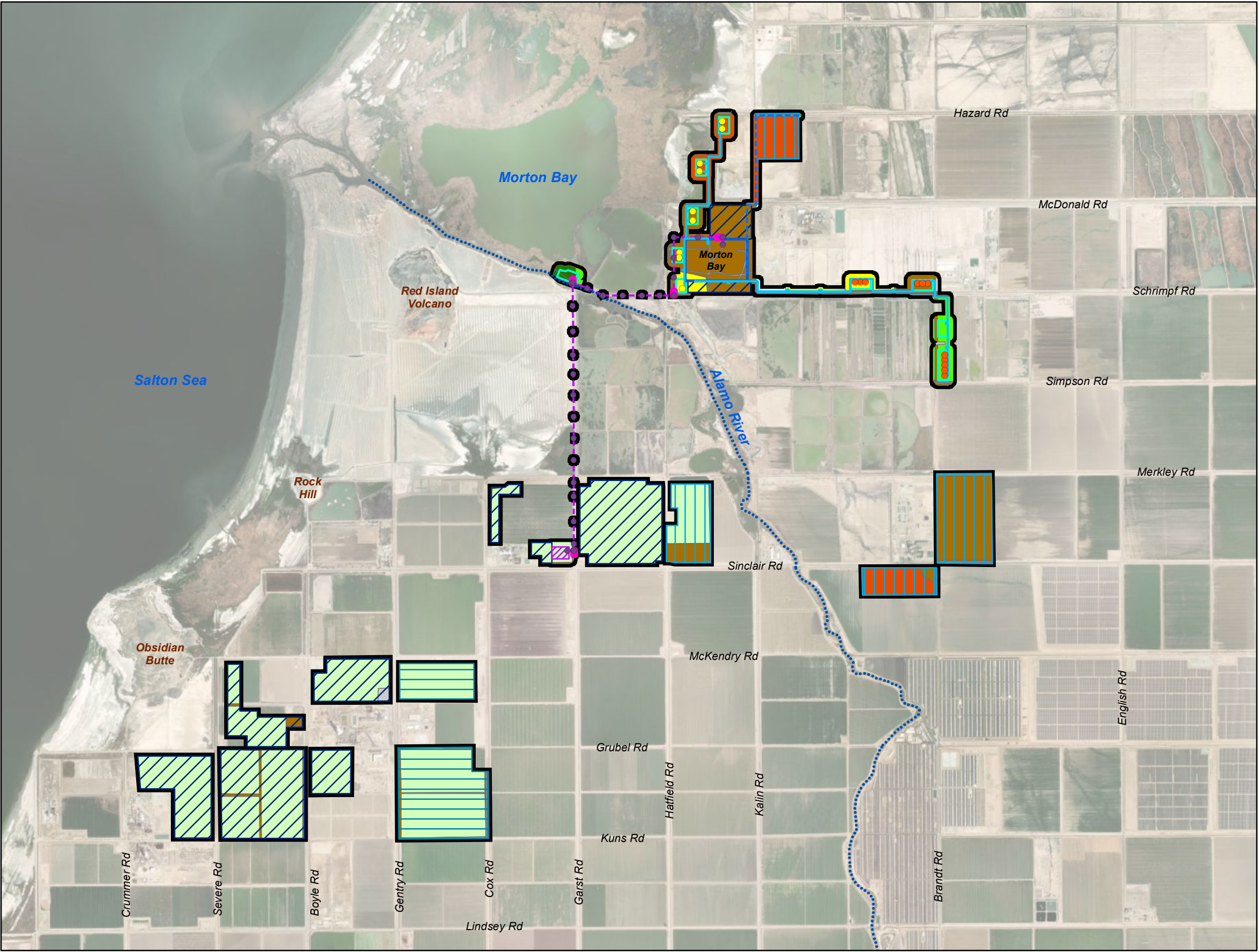


Figure 5.2-3R
National Wetlands Inventory and
National Hydrography Dataset
Morton Bay Geothermal Project
Imperial County, California



Legend

- Biological Study Area
- Plant
- Well Pad
- Injection Well
- Production Well
- Pipeline
- Water Supply Pipeline
- Gen-Tie Line Pole
- Gen-Tie Line
- Pull Site
- Switching Station
- Borrow Pit
- Construction Camp
- Construction Laydown and Parking Areas

Land Cover and Vegetation Types

- Agriculture
- Barren Lands
- Canals and Drains
- Developed
- Disturbed with Vegetation
- Disturbed with No Vegetation
- Invasive Southwest Riparian Woodland and Shrubland/Tamarisk Thickets
- North American Arid West Emergent Marsh/Cattail Marsh
- North American Warm Desert Playa/Iodine Bush Scrub

Note:
Impacts to canals and drains are included for completeness;
no IID infrastructure will be impacted by this Project.

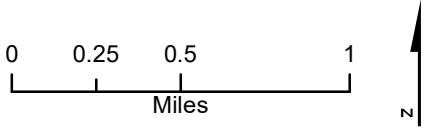
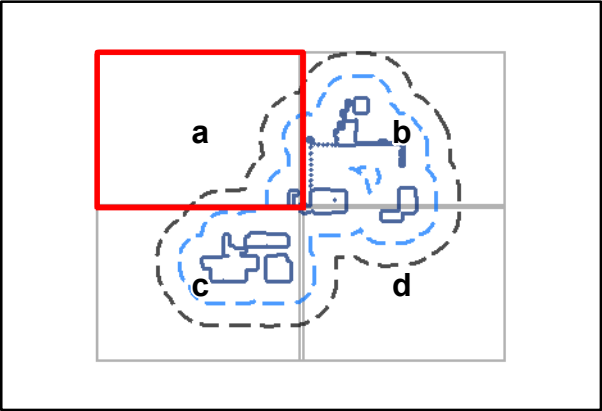
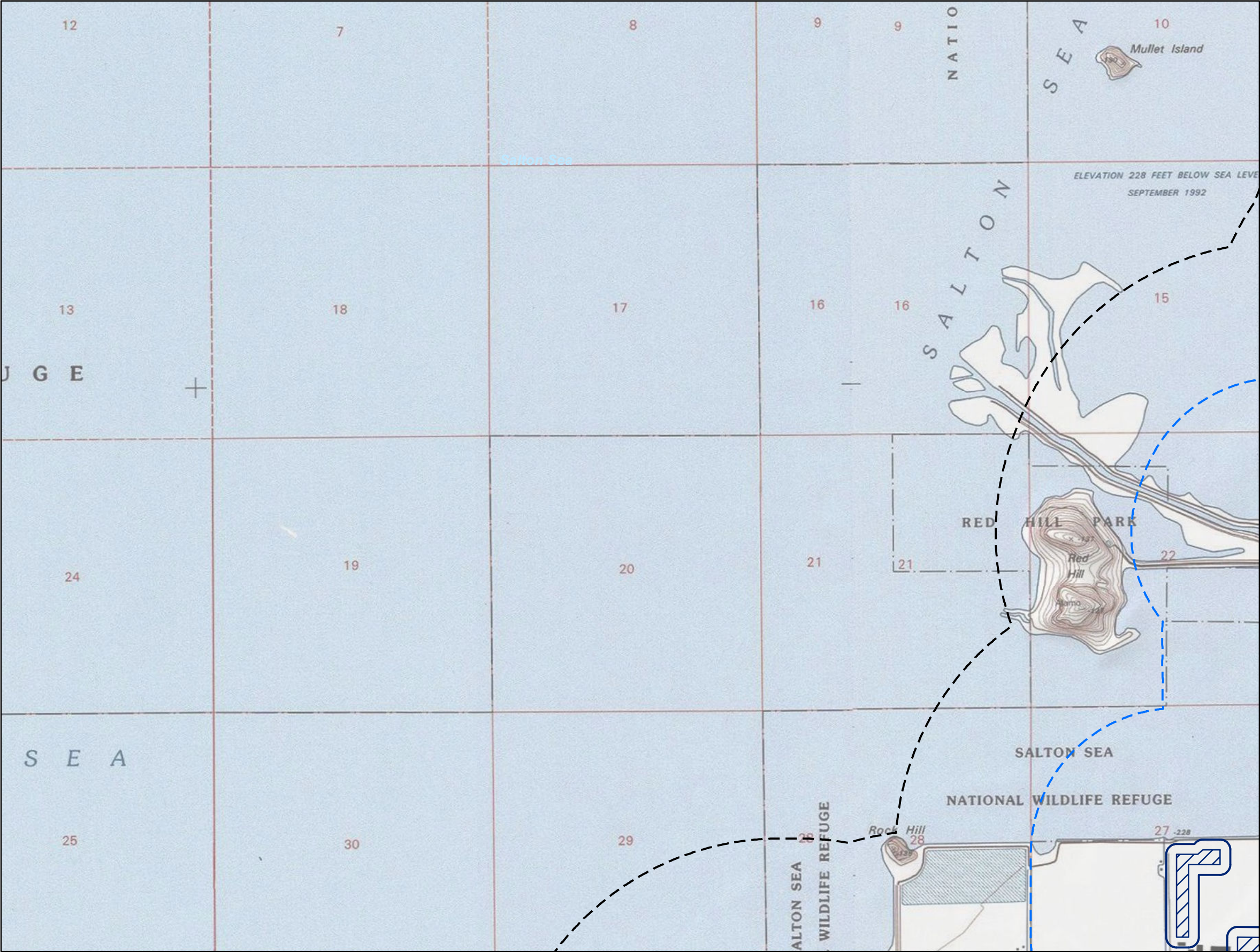


Figure 5.2-4R
Land Cover and Vegetation Types
Morton Bay Geothermal Project
Imperial County, California

6. Cultural Resources

The following revised Cultural Resources figures are being submitted.

- Figure 5.3-1aR Cultural Resources Study Area
- Figure 5.3-1bR Cultural Resources Study Area
- Figure 5.3-1cR Cultural Resources Study Area
- Figure 5.3-1dR Cultural Resources Study Area



- Legend**
- Archaeological Study Area
 - Architectural Study Area
 - Record Search Area
 - Plant
 - Well Pad
 - Injection Well
 - Production Well
 - Pipeline
 - Water Supply Pipeline
 - Gen-Tie Line Pole
 - Gen-Tie Line
 - Pull Site
 - Switching Station
 - Borrow Pit
 - Construction Camp
 - Construction Laydown and Parking Areas

USGS 7.5' Quadrangle: Niland, Ca (1960)
T11S R13E, Secs 11-16 & 21-28

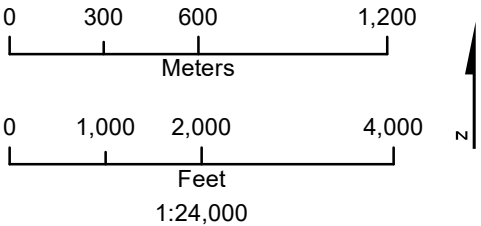
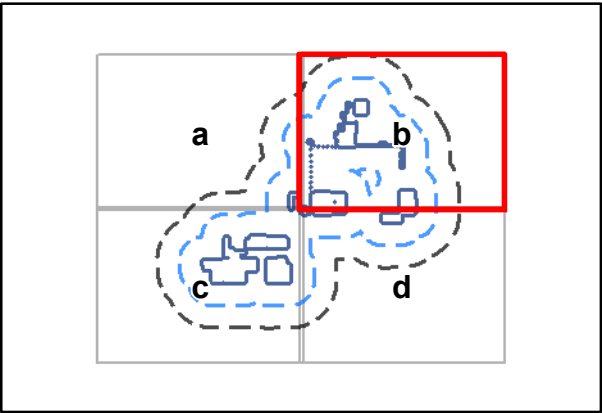
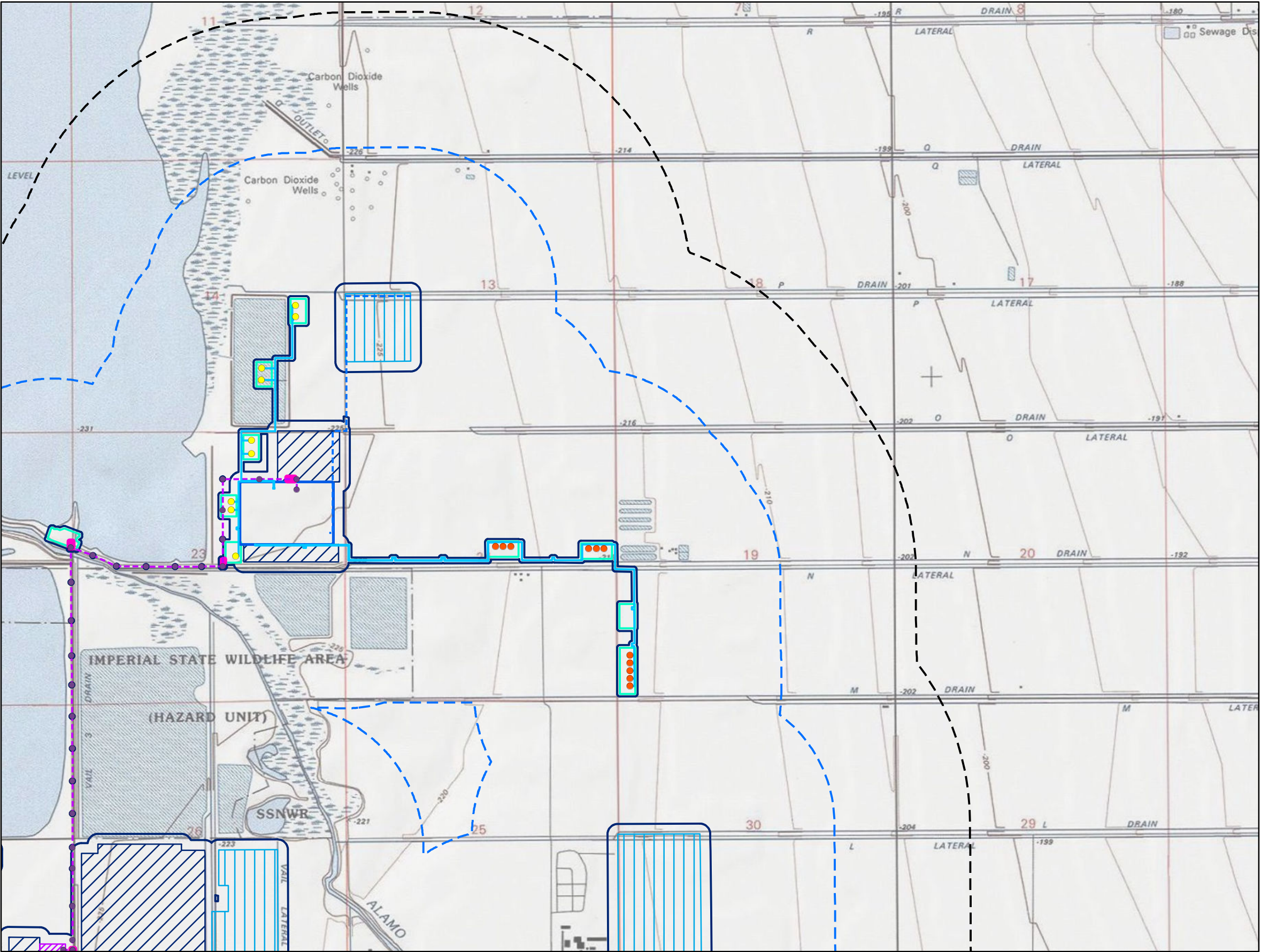


Figure 5.3-1aR
Cultural Study Area
Morton Bay Geothermal Project
Imperial County, California



- Legend**
- Archaeological Study Area
 - Architectural Study Area
 - Record Search Area
 - Plant
 - Well Pad
 - Injection Well
 - Production Well
 - Pipeline
 - Water Supply Pipeline
 - Gen-Tie Line Pole
 - Gen-Tie Line
 - Pull Site
 - Switching Station
 - Borrow Pit
 - Construction Camp
 - Construction Laydown and Parking Areas

USGS 7.5' Quadrangle: Niland, Ca (1960)
T11S R13E, Secs 11-16 & 21-28

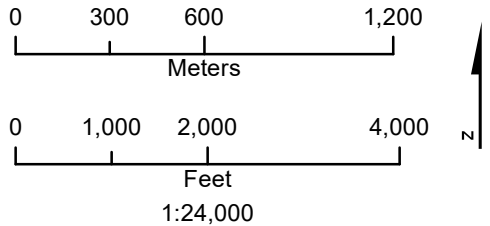
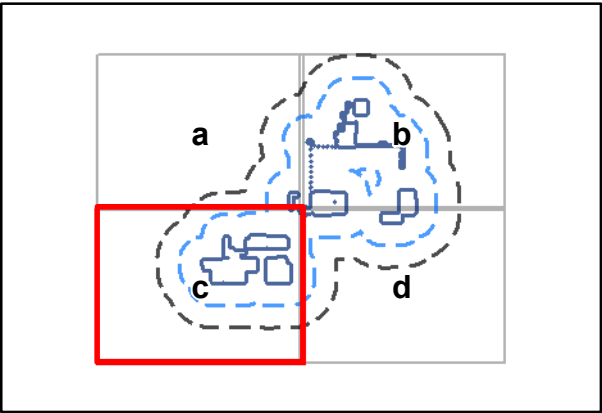
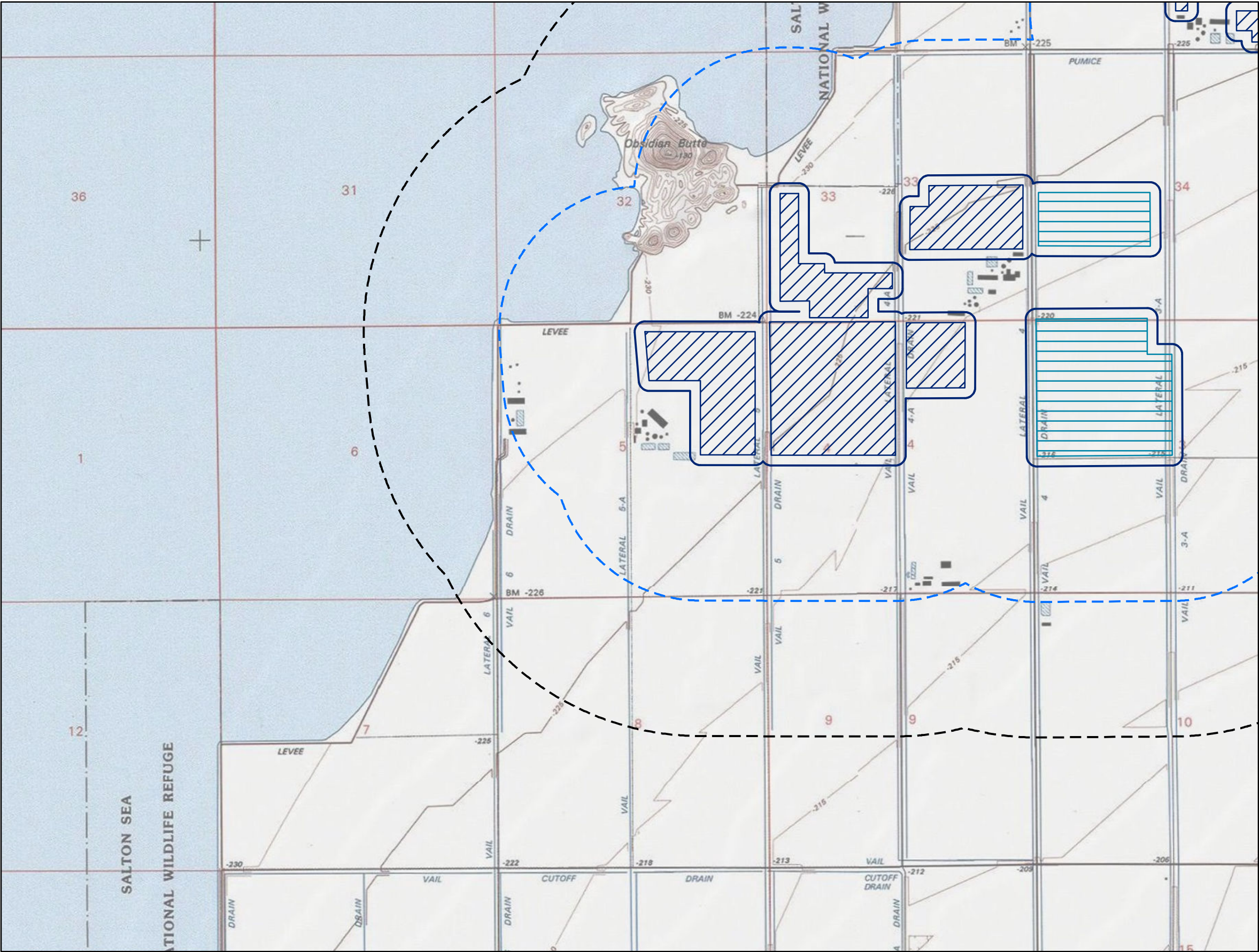


Figure 5.3-1bR
Cultural Study Area
Morton Bay Geothermal Project
Imperial County, California



- Legend**
- Archaeological Study Area
 - Architectural Study Area
 - Record Search Area
 - Plant
 - Well Pad
 - Injection Well
 - Production Well
 - Pipeline
 - Water Supply Pipeline
 - Gen-Tie Line Pole
 - Gen-Tie Line
 - Pull Site
 - Switching Station
 - Borrow Pit
 - Construction Camp
 - Construction Laydown and Parking Areas

USGS 7.5' Quadrangle: Niland, Ca (1960)
T11S R13E, Secs 11-16 & 21-28

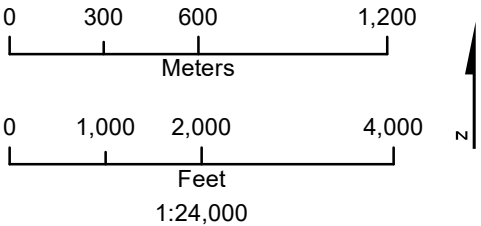
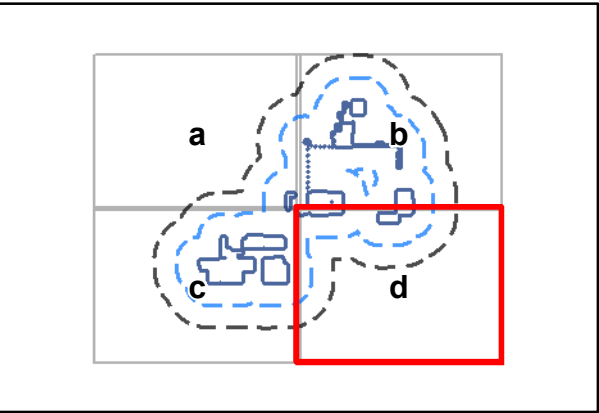
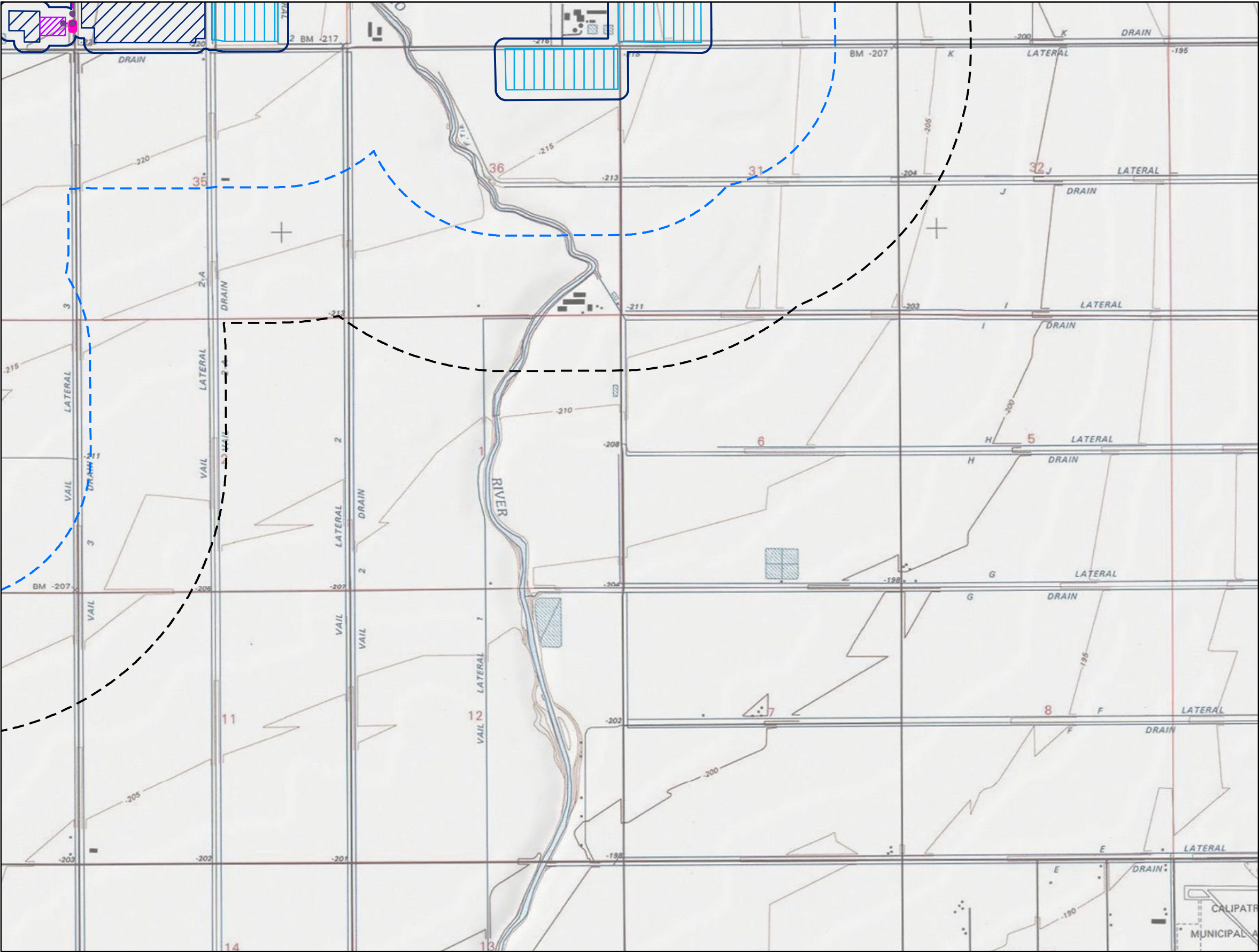


Figure 5.3-1cR
Cultural Study Area
Morton Bay Geothermal Project
Imperial County, California



- Legend**
- Archaeological Study Area
 - Architectural Study Area
 - Record Search Area
 - Plant
 - Well Pad
 - Injection Well
 - Production Well
 - Pipeline
 - Water Supply Pipeline
 - Gen-Tie Line Pole
 - Gen-Tie Line
 - Pull Site
 - Switching Station
 - Borrow Pit
 - Construction Camp
 - Construction Laydown and Parking Areas

USGS 7.5' Quadrangle: Niland, Ca (1960)
T11S R13E, Secs 11-16 & 21-28

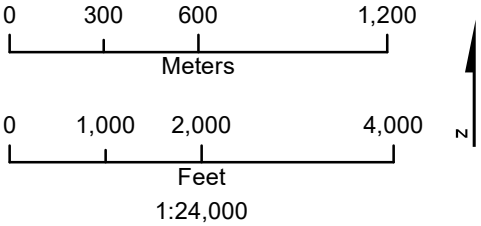
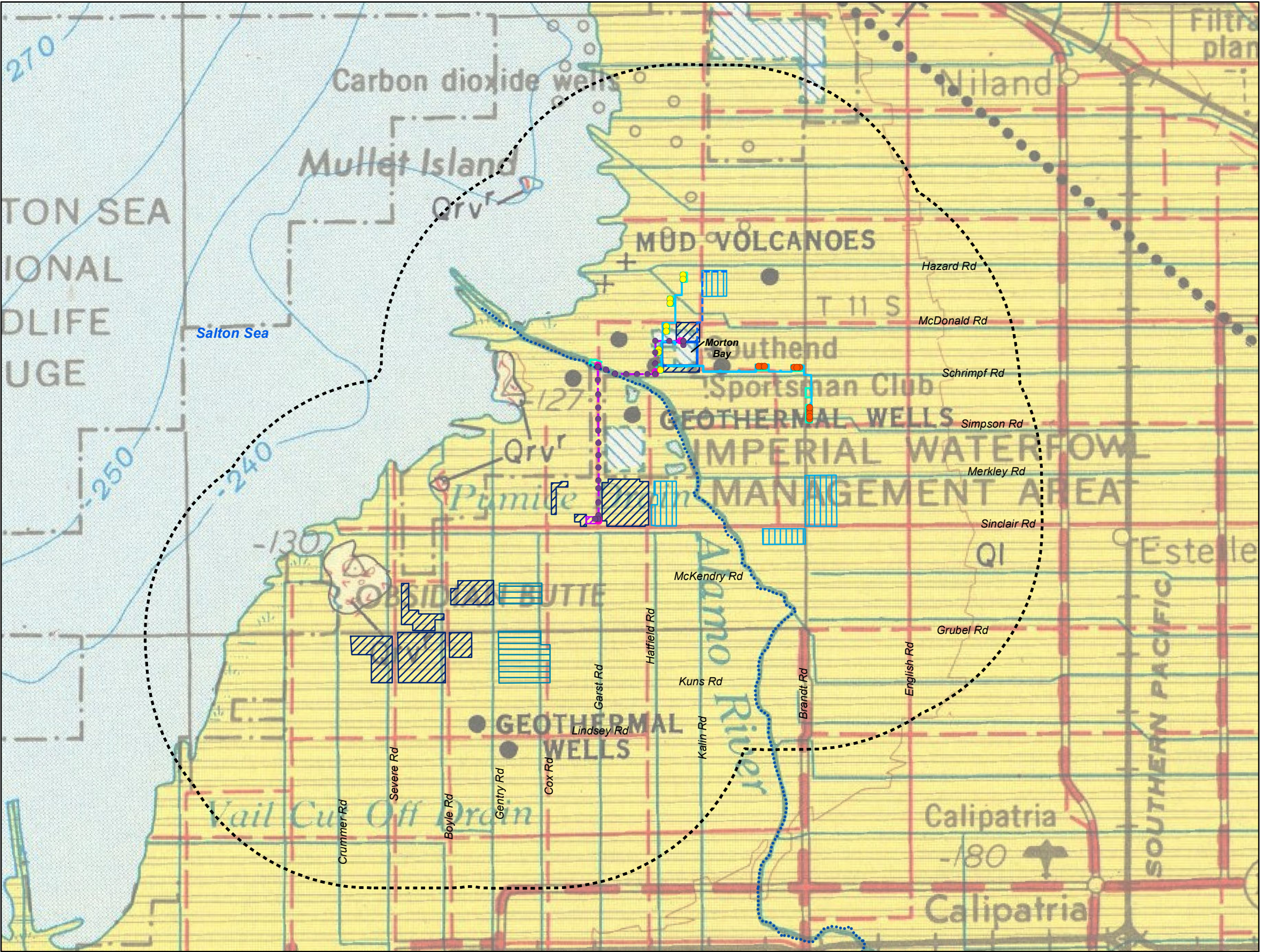


Figure 5.3-1dR
Cultural Study Area
Morton Bay Geothermal Project
Imperial County, California

7. Geologic Hazards and Resources

The following revised Geologic Hazards and Resources figures are being submitted.

- Figure 5.4-2R Surface Geology within 2-miles of the Project Site



- Legend**
- 2-mile Buffer of Project Elements
 - Plant
 - Well Pad
 - Injection Well
 - Production Well
 - Pipeline
 - Water Supply Pipeline
 - Gen-Tie Line Pole
 - Gen-Tie Line
 - Pull Site
 - Switching Station
 - Borrow Pit
 - Construction Camp
 - Construction Laydown and Parking Areas

Geologic Unit Codes:
Qrv – recent volcanic rhyolite
QI Quaternary Lake Deposits

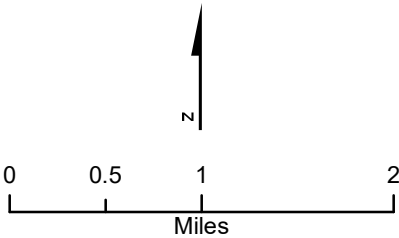


Figure 5.4-2R
Surface Geology within
2 Miles of Project Site
Morton Bay Geothermal Project
Imperial County, California

8. Hazardous Materials Handling

The increase in the amount of concentrated HCL and the use of a dilute HCL tank, and liquid lime tank requires an update to AFC Table 5.5-1. An updated Table 5.5-1R below shows the changes (in boldface and underlined) to the project.

Table 5.5-1R. Use and Location of Hazardous Materials

Chemical ^a	Use	Maximum Quantity Onsite (gallons, lbs, tons)	Annual Quantity (gallons, lbs, tons)	Storage Location (General Arrangement Location Code)	State	Type of Storage
Chemical Treatment CL41	Oxidizing Biocide	1,000 gallons	6,250 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat CL456	Biodetergent	250 gallons	1,500 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat CL5428	Dispersant	250 gallons	1,500 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat CT775	Corrosion Inhibitor	250 gallons	1,500 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat CL2065	Nonoxidizing Biocide	500 gallons	3,000 gallons	Cooling Tower (62)	Liquid	Continuously onsite
HASA 12.5% Sodium Hypochlorite Solution	Oxidizing Biocide	3,000 gallons	36,000 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat C2187T	Oxidizing Biocide – H ₂ S Abatement	2,000 lbs	125,000 lbs	Cooling Tower (62)	Solid	Continuously onsite
ChemTreat C2184G	Oxidizing Biocide – H ₂ S Abatement	500 lbs	2,200 lbs	Cooling Tower (62)	Solid	Continuously onsite
NALCO GEO901	Norms Inhibitor	6,000 gallons	110,000 gallons	NORMS (60)	Liquid	Continuously onsite
NALCO N7471 Antifoam	Antifoaming Agent	900 gallons	13,140 gallons	HP Separator Area (59)	Liquid	Continuously onsite
NALCO 1720	Oxygen Scavenger	500 gallons	9,000 gallons	Clarifier (61)	Liquid	Continuously onsite
GEO912	Scale Inhibitor	3,000 gallons	20,075 gallons	HP Separator (25)	Liquid	Continuously onsite
NALCO N9907	Polymer/Flocculant	4,000 lbs	57,670 lbs	Clarifier (61)	Solid	Continuously onsite

Revised General Arrangement Refinement

Chemical ^a	Use	Maximum Quantity Onsite (gallons, lbs, tons)	Annual Quantity (gallons, lbs, tons)	Storage Location (General Arrangement Location Code)	State	Type of Storage
Battery Electrolyte	UPS and Emergency Shutdown Battery Array	1,200 gallons	1,800 gallons	Battery Rooms (37)	Liquid	Continuously onsite
Diesel No. 2	Fuel for Onsite Equipment	10,000 gallons	10,000 gallons	Southwest of Cooling Tower AST (69)	Liquid	Continuously onsite
Diesel No. 2	Fire Pump Operation	1,000 gallons	1,000 gallons	Fire Water Pump AST (39)	Liquid	Continuously onsite
Diesel No. 2	Emergency Generator Operation	25,352 gallons	25,352 gallons	Emergency Generators (46, 47)	Liquid	Continuously onsite
<u>Hydrochloric Acid ≤37%</u>	<u>Filter Press Wash</u>	<u>20,000 gallons</u>	<u>789,000 gallons</u>	<u>Filter Press (79)</u>	<u>Liquid</u>	<u>Continuously onsite</u>
<u>Hydrochloric Acid ≤2.5%</u>	<u>Filter Press Wash</u>	<u>800 gallons</u>	<u>10,400,000 gallons</u>	<u>Filter Press (98)</u>	<u>Liquid</u>	<u>Continuously onsite</u>
<u>Liquid Lime</u>	<u>Filter Press Wash</u>	<u>10,300 gallons</u>	<u>292,000 gallons</u>	<u>Filter Press (99)</u>	<u>Liquid</u>	<u>Continuously onsite</u>
Sulfur Hexafluoride	Circuit Breakers/TET Test	300 lbs	300 lbs	Switchyards/Resources Test Unit (4, 54)	Gas	Continuously onsite
Anti-Freeze and Coolant	Portable Equipment in Shop	2,000 gallons	2,000 gallons	Maintenance Building (6)	Liquid	Continuously onsite
Naphtha	Portable equipment in Shop	500 gallons	500 gallons	Maintenance Building (6)	Liquid	Continuously onsite
Hydraulic Fluid	Portable Equipment in Shop/Equipment	4,000 gallons	4,000 gallons	Maintenance Building/Filter Press (6)	Liquid	Continuously onsite
Laboratory Reagents	Geothermal Fluids/Filter Cake Laboratory Analysis	10 gallons	10 gallons	Laboratory/Chemical Storage Cabinets (5)	Liquid and Granular Solid	Continuously onsite

Revised General Arrangement Refinement

Chemical ^a	Use	Maximum Quantity Onsite (gallons, lbs, tons)	Annual Quantity (gallons, lbs, tons)	Storage Location (General Arrangement Location Code)	State	Type of Storage
Turbine Lubrication Oil	Lubricate Rotating Equipment (e.g., steam turbine bearings, valves)	22,000 gallons	22,000 gallons	Lubricating oil reservoirs adjacent to the steam turbine and drum storage in lubricant storage shed/warehouse (63)	Liquid	Continuously onsite
Mineral Insulating Oil	Transformers	45,000 gallons	30,000 gallons	Transformers and drum storage in lubricant storage shed (38, 44)	Liquid	Continuously onsite
Acetylene	Welding Gas	750 cubic feet	750 cubic feet	Maintenance Building (6)	Gas	Continuously onsite
Oxygen	Welding Gas	750 cubic feet	750 cubic feet	Maintenance Building (6)	Gas	Continuously onsite
Propane	Torch Gas	750 cubic feet	750 cubic feet	Maintenance Building (6)	Gas	Continuously onsite
Alloy Mix Gas	Welding Gas	750 cubic feet	750 cubic feet	Maintenance Building (6)	Gas	Continuously onsite
Lab Gas (Helium, Argon, Nitrogen, Air)	Laboratory	750 cubic feet	750 cubic feet	Laboratory (5)	Gas	Continuously onsite
Liquid Argon	Laboratory	300 gallons	500 gallons	Laboratory (5)	Liquid	Continuously onsite
Cleaning Chemicals	Cleaning	Varies (< 25 gallons of fluids or 100 lbs of solids for each chemical)	Varies (< 25 gallons of fluids or 100 lbs of solids for each chemical)	Control Room (5)	Liquid or Solid	Continuously onsite

Revised General Arrangement Refinement

Chemical ^a	Use	Maximum Quantity Onsite (gallons, lbs, tons)	Annual Quantity (gallons, lbs, tons)	Storage Location (General Arrangement Location Code)	State	Type of Storage
Paint	Touchup of Painted Surfaces	Varies (< 25 gallons of fluids or 100 lbs of solids for each chemical)	Varies (< 25 gallons of fluids or 100 lbs of solids for each chemical)	Control Room (5)	Liquid	Continuously onsite

Notes:

AST = aboveground storage tank

H₂S = hydrogen sulfide

HP = high pressure

lb = pound(s)

UPS = uninterruptible power supply

^a Chemical vendor may be subject to change; however, chemical class will remain the same or similar.

9. Land Use

The following revised Land Use figures are being submitted.

- Figure 5.6-1R General Plan Land Use Designations
- Figure 5.6-2R Zoning Designations

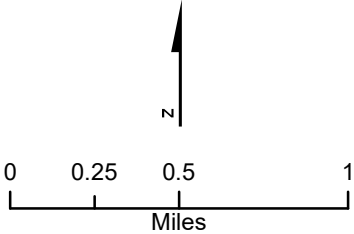
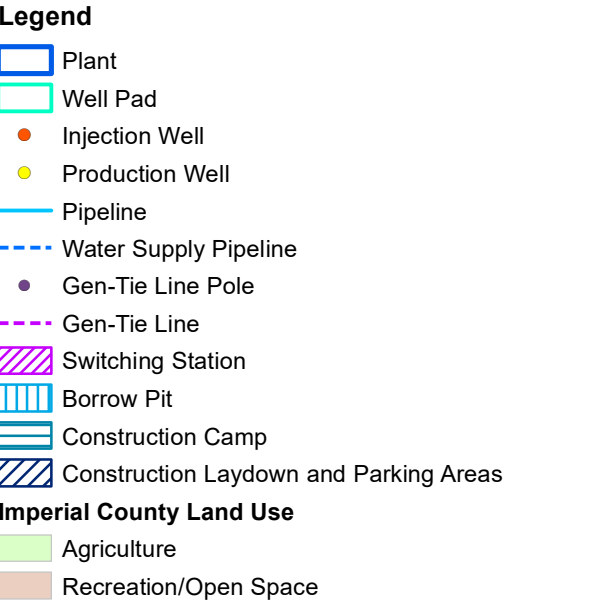
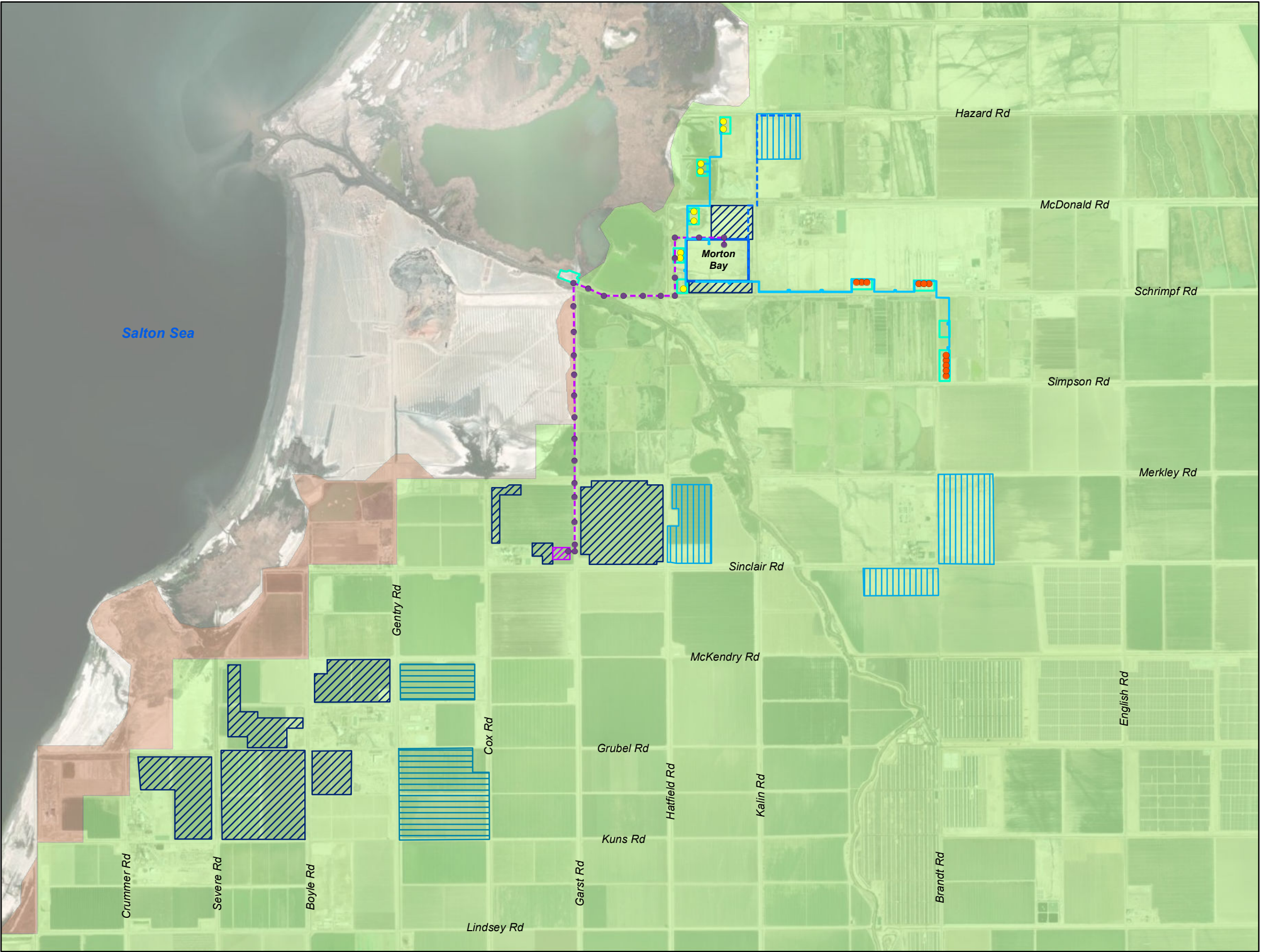


Figure 5.6-1R
General Plan Land Use Designations
Morton Bay Geothermal Project
Imperial County, California



Legend

- Plant
- Well Pad
- Injection Well
- Production Well
- Pipeline
- Water Supply Pipeline
- Gen-Tie Line Pole
- Gen-Tie Line
- Switching Station
- Borrow Pit
- Construction Camp
- Construction Laydown and Parking Areas
- Imperial County Zoning

Imperial County Zoning Areas:
A-1 - Limited/Light Agricultural Area
A-2 - General Agricultural Area
A-2-R - General Agricultural/Rural Zone
A-3 - Heavy Agricultural Area
M-2 - Medium Industrial Area
S-1 - Open Space/Recreational
S-2 - Open Space/Preservation

Overlay Zones:
G - Geothermal Overlay
PE - Pre-Existing Allowed/Restricted
RE - Renewable Energy/Geothermal Overlay

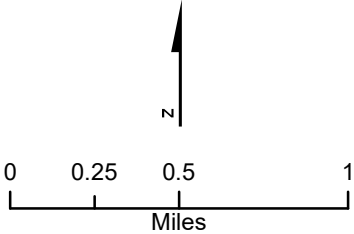


Figure 5.6-2R
Zoning Designations
Morton Bay Geothermal Project
Imperial County, California

10. Noise and Vibration

The following revised Noise and Vibration figures are being submitted.

- Figure 5.7-1R Morton Bay Geothermal Project Sound Monitoring Locations

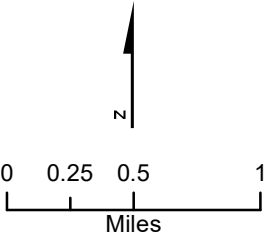


Figure 5.7-1R
Sound Monitoring Locations
Morton Bay Geothermal Project
Imperial County, California

11. Paleontological Resources

The following revised Paleontological Resource figures are being submitted.

- Figure 5.8-1 Geology within 1 Mile of the Project Site

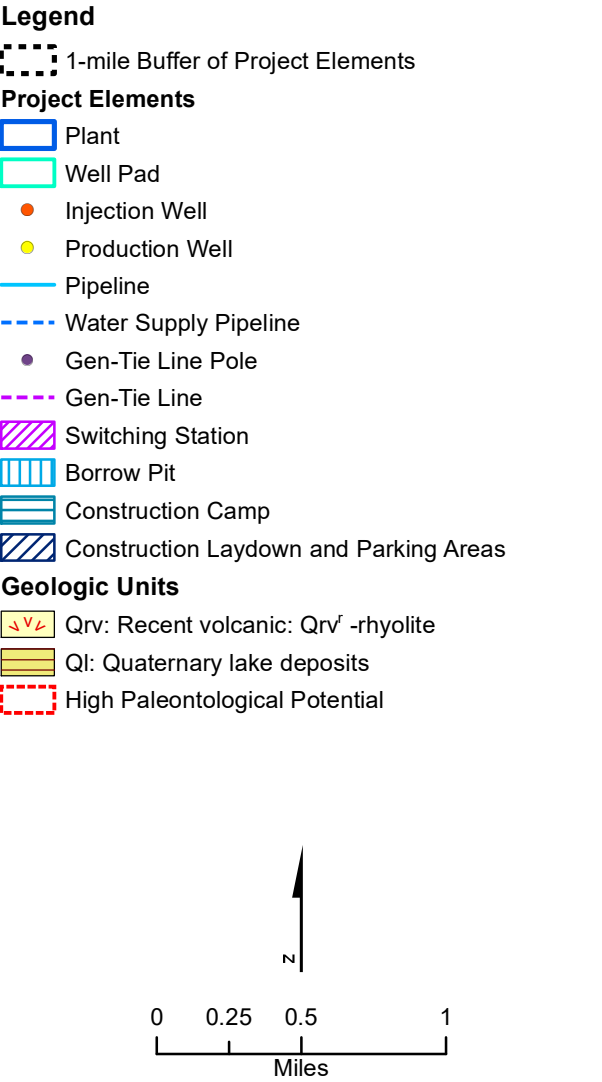
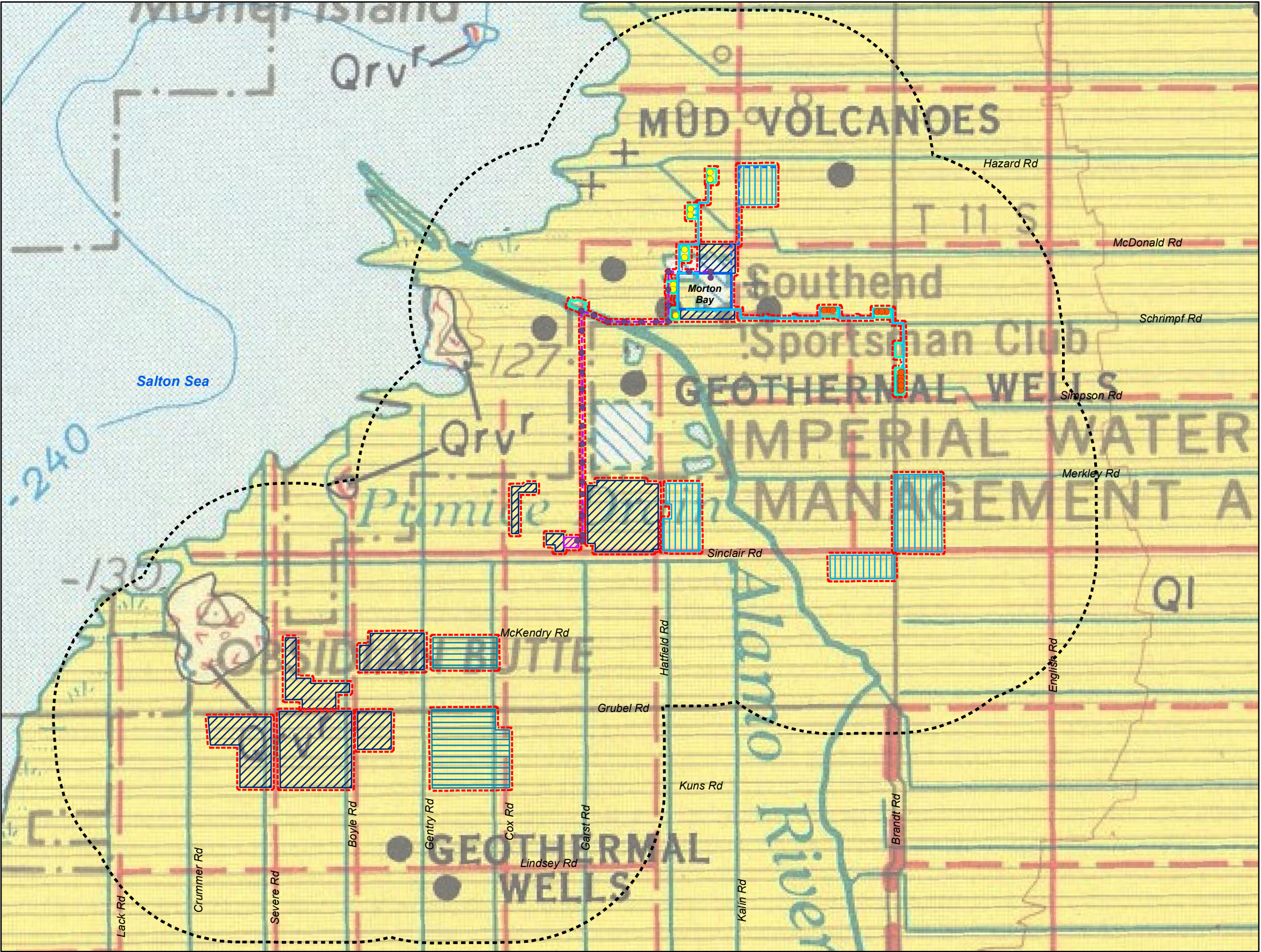


Figure 5.8-1R
Geology within 1 mile of Project Site
Morton Bay Geothermal Project
Imperial County, California

12. Soils

The following revised Soils figures are being submitted.

- Figure 5.11-1R NRCS Soils Map Units within the Project Area
- Figure 5.11-2R Important Farmland

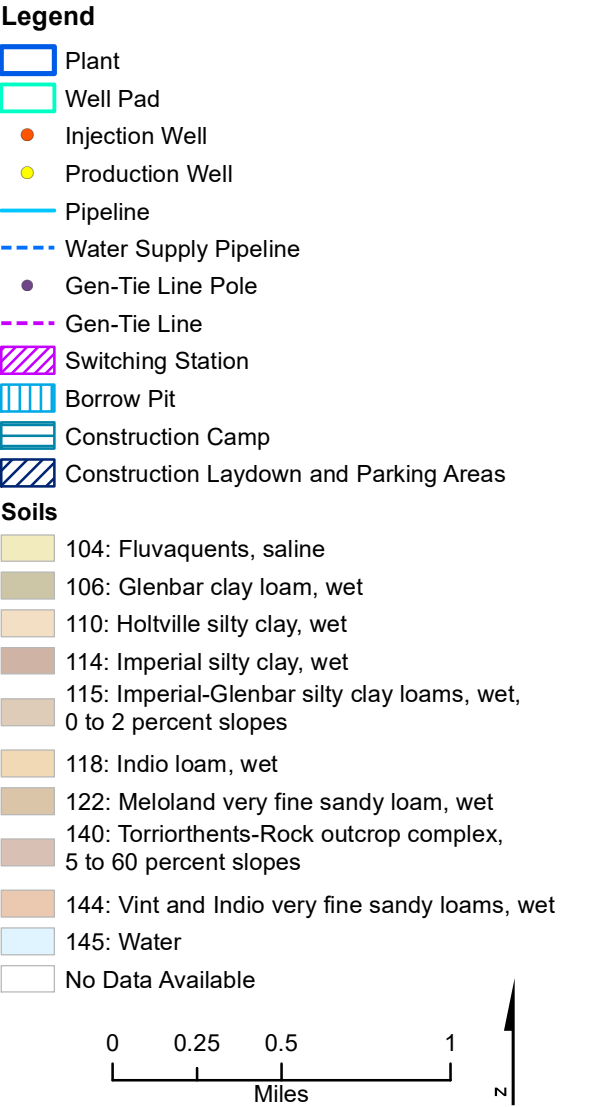


Figure 5.11-1R
NRCS Soil Map Units Within Project Area
Morton Bay Geothermal Project
Imperial County, California

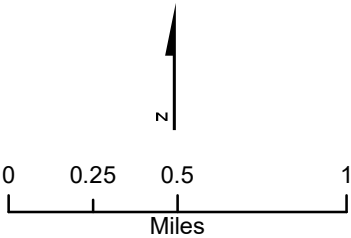
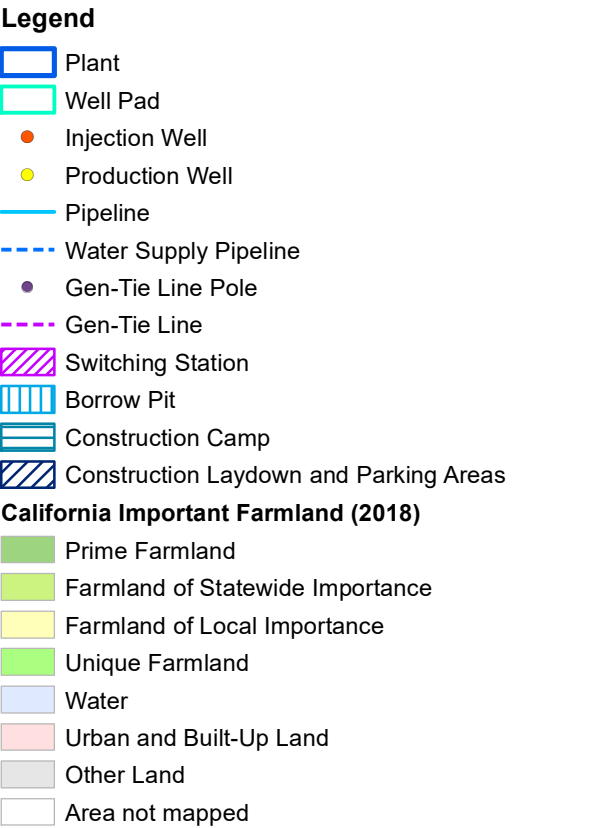
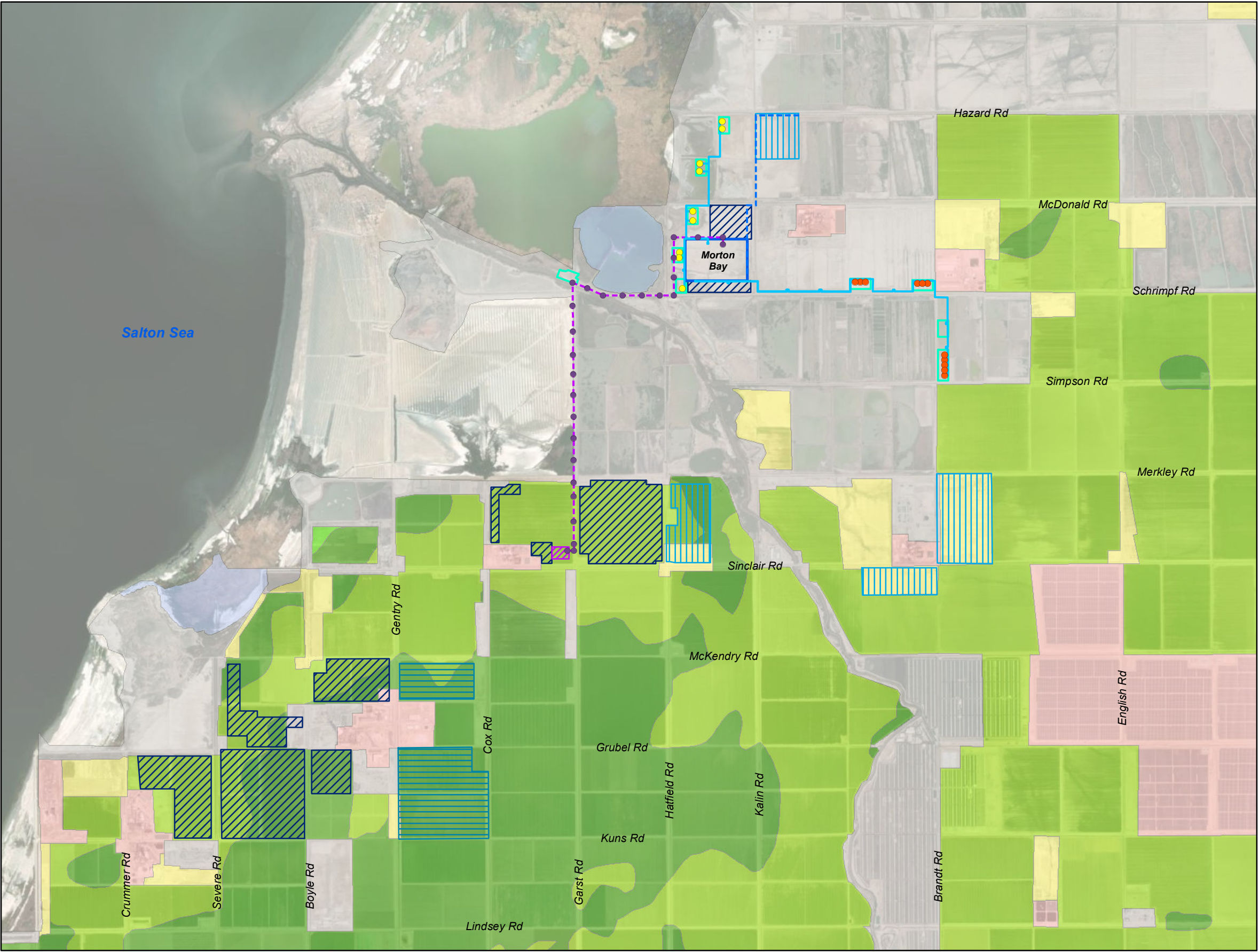


Figure 5.11-2R
Important Farmland
Morton Bay Geothermal Project
Imperial County, California

13. Traffic and Transportation

The following revised Traffic and Transportation figures are being submitted.

- Figure 5.12-2R Local Road Network in the Project Vicinity



Legend

- Town
- Major Road

Project Elements

- Plant
- Well Pad
- Injection Well
- Production Well
- Pipeline
- Water Supply Pipeline
- Gen-Tie Line
- Switching Station
- Borrow Pit
- Construction Camp
- Construction Laydown and Parking Areas

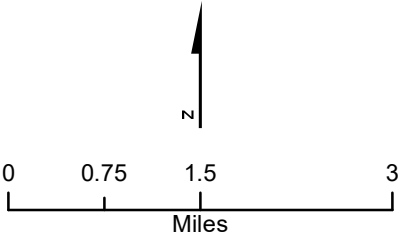
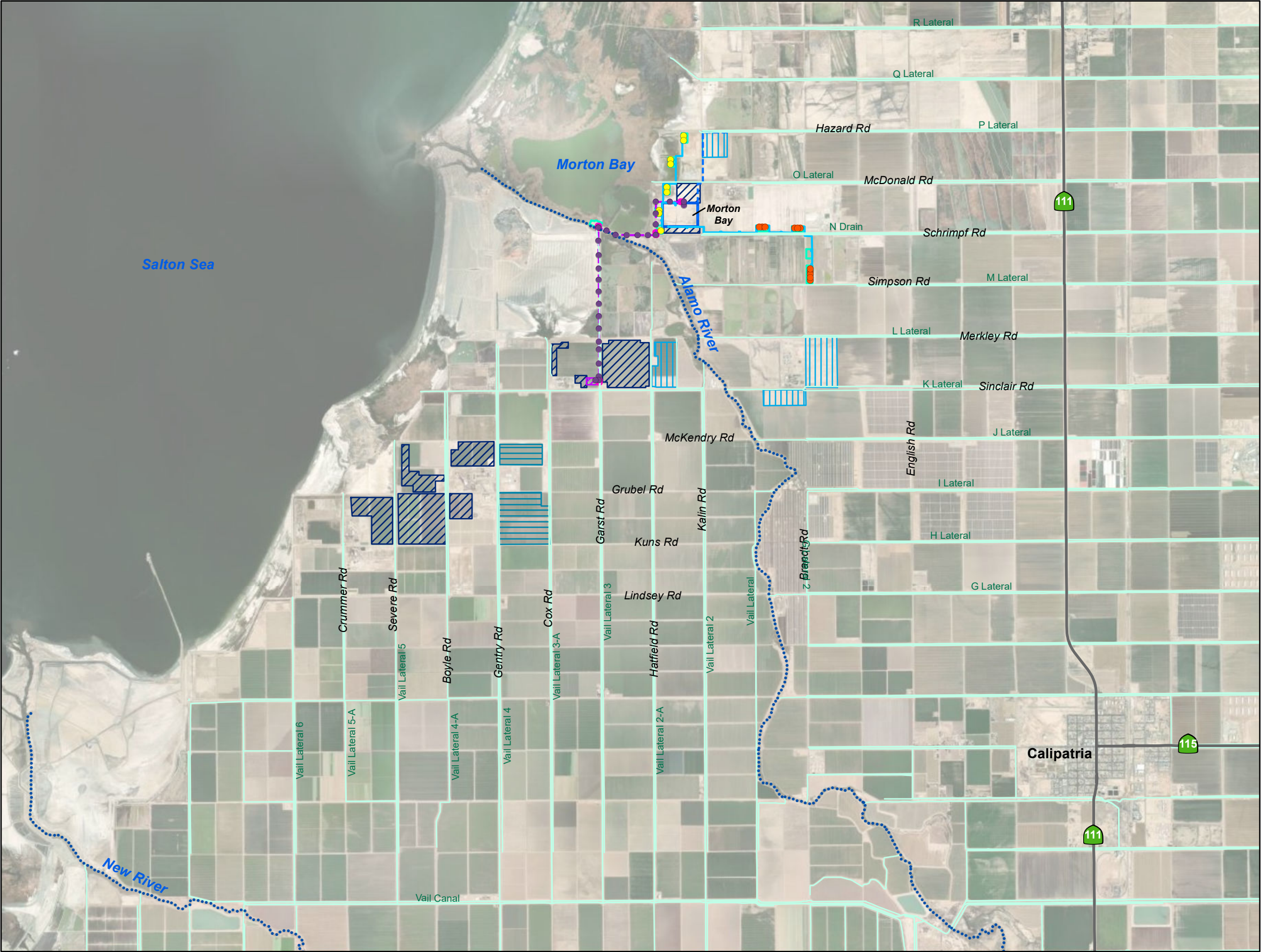


Figure 5.12-2R
Local Roadway Network
in the Project Vicinity
Morton Bay Geothermal Project
Imperial County, California

14. Water Resources

The following revised Water Resource figures are being submitted.

- Figure 5.15-1R Surface Waters
- Figure 5.15-3aR Existing FEMA Floodplain
- Figure 5.15-3bR Remapped FEMA Floodplain



- Legend**
- Canal
 - River
 - Plant
 - Well Pad
 - Injection Well
 - Production Well
 - Pipeline
 - Water Supply Pipeline
 - Gen-Tie Line Pole
 - Gen-Tie Line
 - Pull Site
 - Switching Station
 - Borrow Pit
 - Construction Camp
 - Construction Laydown and Parking Areas

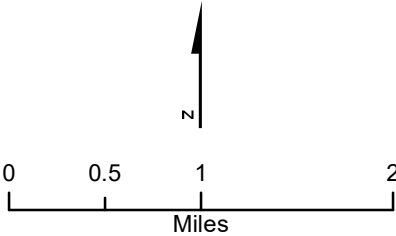
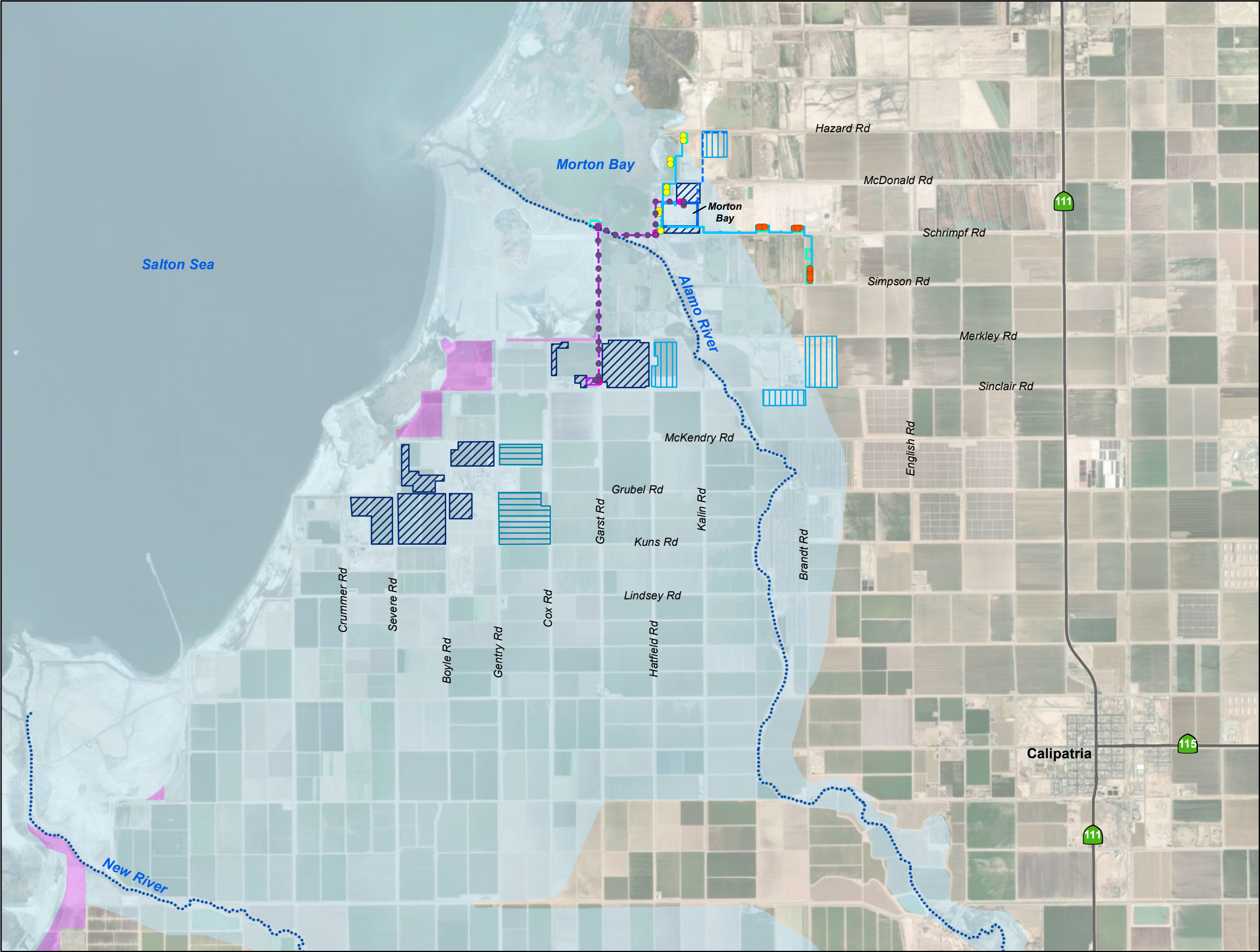


Figure 5.15-1R
Surface Waters
Morton Bay Geothermal Project
Imperial County, California



Legend

- River
- Plant
- Well Pad
- Injection Well
- Production Well
- Pipeline
- Water Supply Pipeline
- Gen-Tie Line Pole
- Gen-Tie Line
- Pull Site
- Switching Station
- Borrow Pit
- Construction Camp
- Construction Laydown and Parking Areas

FEMA Flood Zones

- Existing Floodplain to be Modified
- Zone D: Areas in Which Flood Hazards are Undetermined, but Possible

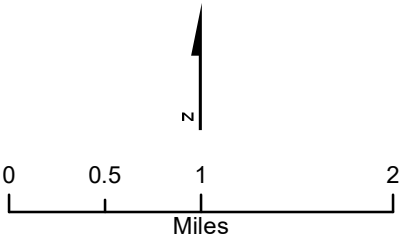


Figure 5.15-3aR
Existing FEMA Floodplain
Morton Bay Geothermal Project
Imperial County, California

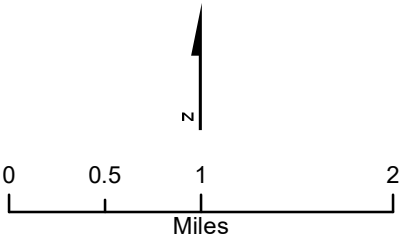
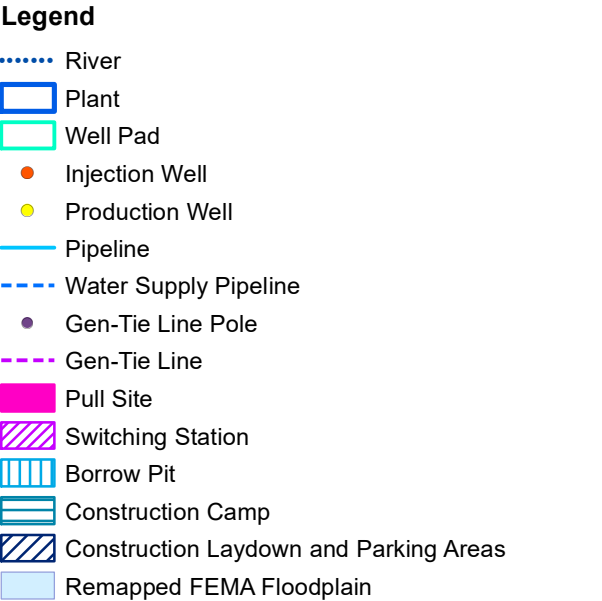
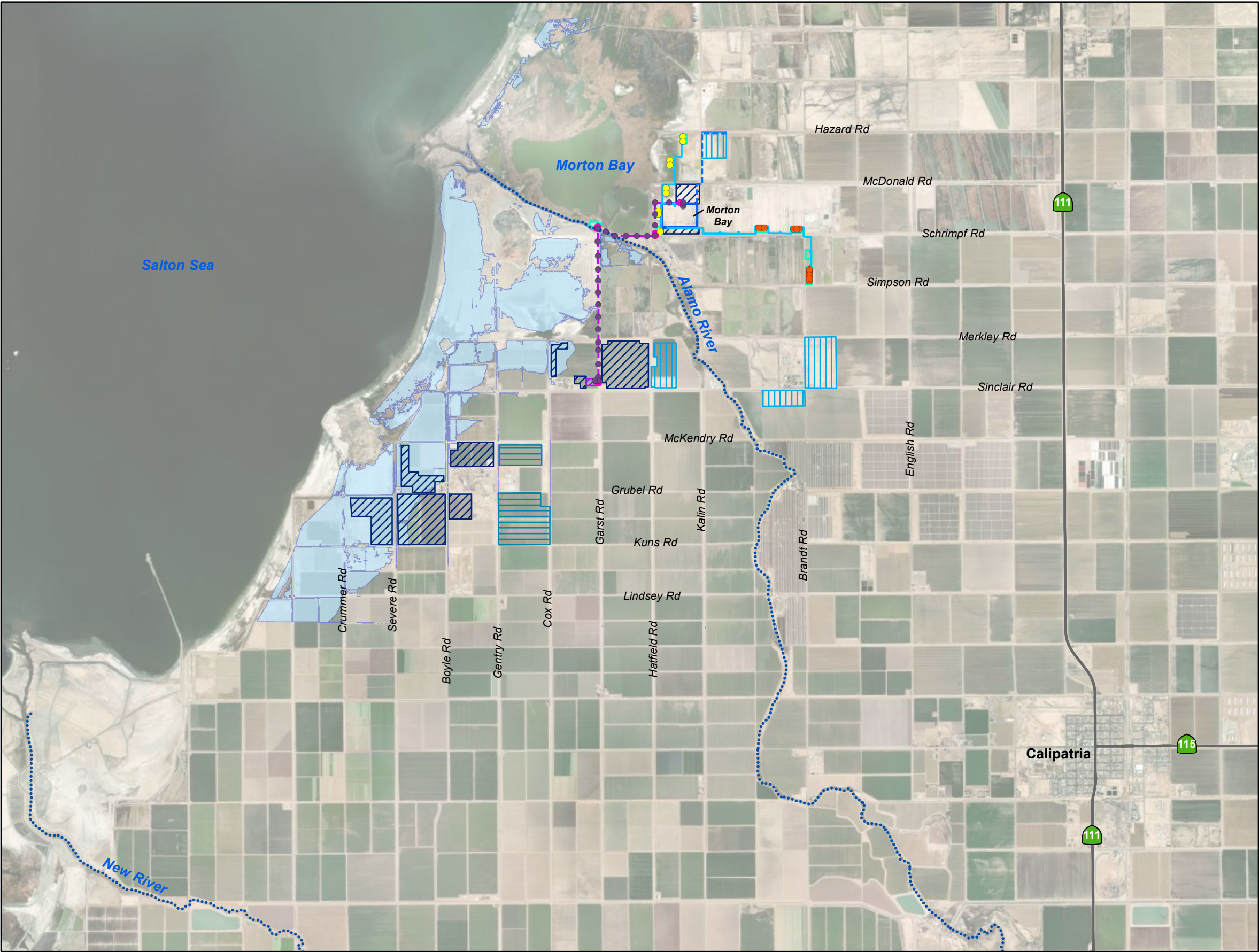


Figure 5.15-3bR
Remapped FEMA Floodplain
Morton Bay Geothermal Project
Imperial County, California

15. Visual Resources

The following revised Visual Resource figures are being submitted.

- Figure 5.13-2b Visual Simulation from Rock Hill (KOP1)
- Figure 5.13-2d Visual Simulation from Red Hill (KOP2)
- Figure 5.13-2f Simulation from Sonny Bono Salton Sea National Wildlife Refuge (KOP3)



Figure 5.13-2bR
Visual Simulation from Rock Hill (KOP1)
Morton Bay Geothermal Project
Imperial County, California



Figure 5.13-2dR
Visual Simulation from Red Hill (KOP2)
Morton Bay Geothermal Project
Imperial County, California



Figure 5.13-2fR
Visual Simulation from Sonny Bono Salton Sea
National Wildlife Refuge (KOP3)
Morton Bay Geothermal Project
Imperial County, California