

APPENDIX E

LESA Models

**LESA ASSESSMENT
CALEXICO SOLAR FARM I
PHASE A PROJECT AREA**

CALEXICO SOLAR FARM I PHASE A PROJECT

**(SW/4 Section 13, S/2 Section 14, S/2 NE/4 Section 15,
NW/4 Section 15, T17S, R13E, SBB&M)**

IMPERIAL COUNTY, CALIFORNIA

July 2011

EMA Report No. 2175-03A

Prepared for:

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ENVIRONMENTAL MANAGEMENT ASSOCIATES

LAND EVALUATION AND SITE ASSESSMENT MODEL

CALEXICO SOLAR FARM I PHASE A PROJECT

**(SW/4 Section 13, S/2 Section 14, S/2 NE/4 Section 15,
NW/4 Section 15, T17S, R13E, SBB&M)**

IMPERIAL COUNTY, CALIFORNIA

The Land Evaluation and Site Assessment (LESA) model is an approach for rating the relative quality of land resources based upon specific measurable features. The LESA model was first developed by the federal Natural Resources Conservation Service (NRCS) in 1981. It was subsequently adapted in 1990 by the California Department of Conservation to evaluate land use decisions that affect the conversion of agriculture lands in California. The formulation of the California LESA Model is intended to provide lead agencies under the California Environmental Quality Act (CEQA) with an optional methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process.

For determining the potential CEQA significance resulting from the conversion of agricultural lands to some other purpose, the California Agricultural LESA Model has developed Scoring Thresholds which are used to compare the Final LESA Score and the Weighted Factor Scores for the Project with suggested Scoring Decisions. These LESA Scores do not take into consideration any proposed mitigation measures or other factors that might affect a lead agency's determination of the significance of the agricultural lands conversion impact under CEQA.

The information provided on the following pages present documentation of the LESA assessment prepared using the California Agricultural LESA Model for the proposed Calexico Solar Farm I Phase A Project (Project) (APNs 052-210-001-000; 052-210-002-000; 052-210-014-000; and 052-210-015-000). The proposed Project would be constructed on approximately 720 acres of privately owned land located about seven miles west of the city of Calexico, California (Figure 1). The Project is bounded on the north by California State Route 98 and bounded on the south by Anza Road, an Imperial County road (Figure 2).

LESA ASSESSMENT
88FT 8ME, LLC
CALEXICO SOLAR FARM I PHASE A PROJECT
IMPERIAL COUNTY, NEVADA

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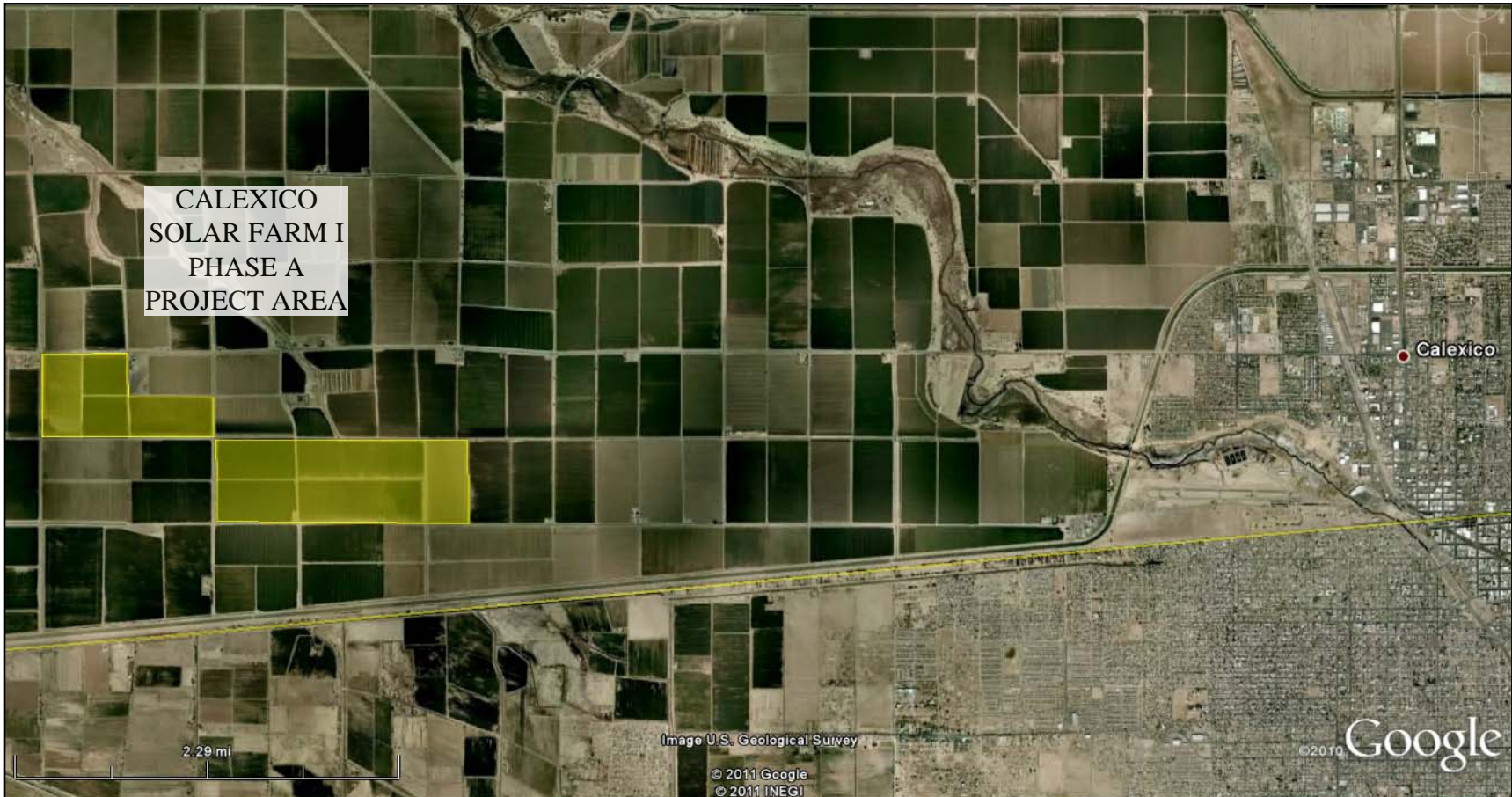


Figure 1 : Location Map



Figure 2 : Project Area on an Aerial Photographic Base

Land Evaluation Worksheet							
A	B	C	D	E	F	G	H
Soil Map Unit*	Project Acres	Proportion of Project Area	LCC** (irrigated)	LCC Rating (irrigated)***	LCC Score (C x E)	Storie Index**	Storie Index Score (C x G)
106	34.54	0.048	IIw	80	3.84	72	3.46
110	94.98	0.132	IIw	80	10.56	45	5.94
114	154.71	0.215	IIIw	60	12.90	42	9.03
115	431.74	0.600	IIIw	60	36.00	67	40.20
122	3.89	0.005	IIIw	60	0.32	44	0.24
123	0.22	0.000	IIIw	60	0.02	44	0.01
Totals	720	1.00		LCC Total Score	64	Storie Index Total Score	59
Total Project Area (acres)=	720						
* The Soil Map Unit information and acreage were determined from the current soil survey information available at the USDA Natural Resources Conservation Service website: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (Figure 3).							
** The Land Capability Classification and Storie Index information was obtained from the current soil survey information available at the USDA Natural Resources Conservation Service website: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (Appendix A).							
*** The LCC Rating for irrigated land was determined from the LCC Point Rating Table 2 from the LESA Instruction Manual (California Department of Conservation 1997).							

Imperial County, California, Imperial Valley Area (CA683)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
106	GLENBAR CLAY LOAM, WET	34.4	4.8%
110	HOLTVILLE SILTY CLAY, WET	94.9	13.2%
114	IMPERIAL SILTY CLAY, WET	155.3	21.5%
115	IMPERIAL-GLENBAR SILTY CLAY LOAMS, WET, 0 TO 2 PERCENT SLOPES	433.0	60.0%
122	MELOLAND VERY FINE SANDY LOAM, WET	3.9	0.5%
123	MELOLAND AND HOLTVILLE LOAMS, WET	0.2	0.0%
Totals for Area of Interest		721.9*	100.0%
*Adjusted to 720 acres			

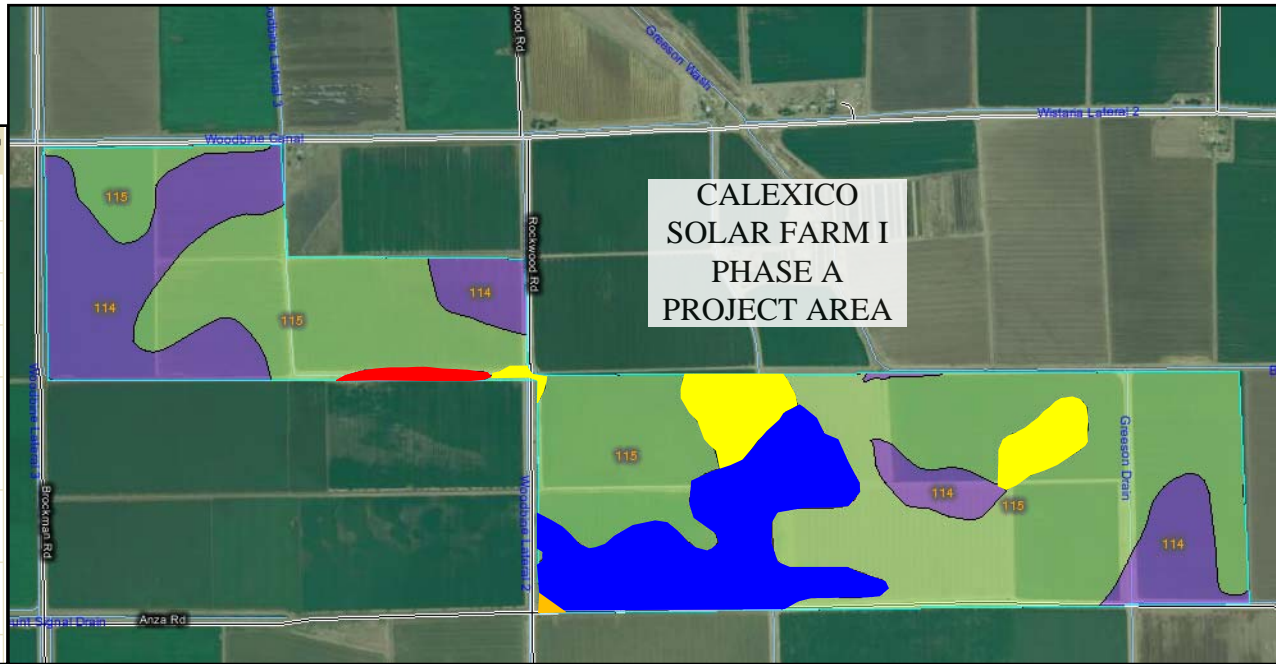


Figure 3 : Project Area Soils Map

	Site Assessment Worksheet 1		
	Project Size Score*		
	I	J	K
	LCC Class I-II	LCC Class III	LCC Class IV-VIII
<i>Project Acres per LCC Class</i>	34.54	154.71	
<i>Project Acres per LCC Class</i>	94.98	431.74	
<i>Project Acres per LCC Class</i>		3.89	
<i>Project Acres per LCC Class</i>		0.22	
<i>Project Acres per LCC Class</i>			
Total Project Acres per LCC Class	130	591	0
* Project Size Scores	100	100	0
Highest Project Size Score			
	100		
* Project Size Score was determined from the Project Size Scoring Table from the LESA Instruction Manual (California Department of Conservation 1997).			

Site Assessment Worksheet 2				
Water Resources Availability				
A	B	C	D	E
Project Portion	Water Source	Proportion of Project Area	Water Availability Score*	Weighted Availability Score (C x D)
1	Irrigation District Only	1.0	100	100
2				
3				
4				
5				
6				
		(Must Sum to 1.0)	Total Water Resource Score	100

* The Water Availability Score was determined using the Water Resources Availability Scoring Table from the LESA Instruction Manual (California Department of Conservation 1997).

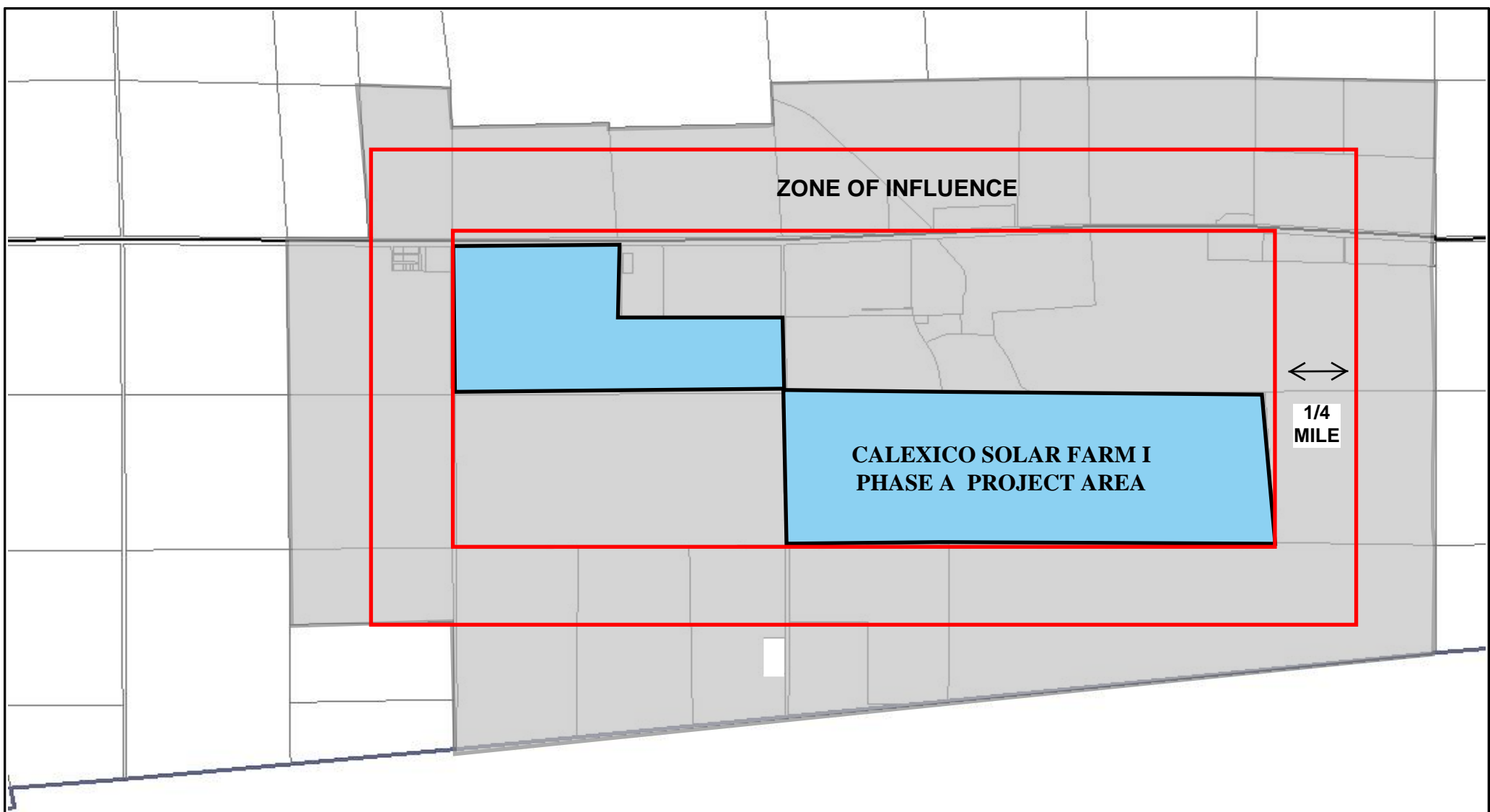
Site Assessment Worksheet 3						
Surrounding Agricultural Land & Surrounding Protected Resource Land						
A	B	C	D	E	F	G
Zone of Influence*					Surrounding Agricultural Land Score (From LESA Manual Table 6)	Surrounding Protected Resource Land Score (From LESA Manual Table 7)**
Total Acres	Acres in Agriculture	Acres of Protected Resource Land	Percent in Agriculture (B/A)	Percent Protected Resource Land (C/A)		
3587.1	3455	0	96	0	100	0

* In conformance with the instructions in the LESA Instruction Manual (California Department of Conservation 1997), the Zone of Influence was determined by drawing the smallest rectangle that could completely encompass the entire Project Area. A second rectangle was then drawn which extended one quarter mile on all sides beyond the first rectangle. The Zone of Influence is represented by the entire area of all parcels with any lands inside the outer rectangle, less the area of the proposed project (Figure 4).

** The LESA Instruction Manual (California Department of Conservation 1997) describes *Protected Resource Land* as those lands with long term use restrictions that are compatible with or supportive of agricultural uses of land. Included among them are the following: Williamson Act contracted lands; Publicly owned lands maintained as park, forest, or watershed resources; and Lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses.

Surrounding Parcels***	Acres	Protected Resource Land?	Percent Protected Resource Land	Acres in Protected Land	Agricultural Land?	Percent Agricultural Land	Acres of Agriculture
052-202-002	0.3	N	0	0	N	0	0.0
052-190-010	150.7	N	0	0	Y	100	150.7
052-190-024	80.8	N	0	0	Y	100	80.8
052-210-023	1.2	N	0	0	Y	100	1.2
052-210-022	18.6	N	0	0	Y	100	18.6
052-210-025	55.5	N	0	0	Y	100	55.5
052-210-026	61.4	N	0	0	Y	100	61.4
052-210-029	73.3	N	0	0	Y	100	73.3
052-210-006	0.4	N	0	0	Y	100	0.4
052-210-019	123.5	N	0	0	Y	100	123.5
052-210-016	331.7	N	0	0	Y	100	331.7
052-201-003	0.4	N	0	0	N	0	0.0
052-201-004	0.7	N	0	0	N	0	0.0
052-203-001	0.8	N	0	0	N	0	0.0
052-203-003	4.0	N	0	0	N	0	0.0
052-201-005	0.7	N	0	0	N	0	0.0
052-201-006	0.4	N	0	0	N	0	0.0
052-202-003	0.4	N	0	0	N	0	0.0
052-202-005	0.1	N	0	0	N	0	0.0
052-202-007	0.1	N	0	0	N	0	0.0

Surrounding Parcels***	Acres	Protected Resource Land?	Percent Protected Resource Land	Acres in Protected Land	Agricultural Land?	Percent Agricultural Land	Acres of Agriculture
052-202-008	0.1	N	0	0	N	0	0.0
052-210-039	104.4	N	0	0	Y	100	104.4
052-210-038	139.0	N	0	0	Y	100	139.0
052-210-037	155.5	N	0	0	Y	100	155.5
052-190-011	166.0	N	0	0	Y	100	166.0
052-170-035	87.9	N	0	0	Y	100	87.9
052-180-033	121.1	N	0	0	Y	100	121.1
052-180-032	121.8	N	0	0	Y	100	121.8
052-180-028	71.2	N	0	0	Y	80	57.0
052-180-039	152.4	N	0	0	Y	98	149.4
052-180-027	6.9	N	0	0	N	0	0.0
052-180-049	11.8	N	0	0	N	0	0.0
052-210-027	23.9	N	0	0	Y	100	23.9
052-210-028	71.7	N	0	0	Y	40	28.7
052-210-030	0.7	N	0	0	Y	100	0.7
052-210-031	5.6	N	0	0	N	0	0.0
052-210-032	28.3	N	0	0	N	0	0.0
052-210-036	364.0	N	0	0	Y	100	364.0
052-210-020	436.0	N	0	0	Y	100	436.0
052-180-050	46.1	N	0	0	Y	100	46.1
052-180-065	2.2	N	0	0	Y	100	2.2
052-180-040	67.9	N	0	0	Y	100	67.9
052-180-064	157.7	N	0	0	Y	100	157.7
052-180-022	43.2	N	0	0	Y	100	43.2
052-180-051	89.4	N	0	0	Y	100	89.4
052-210-035	14.6	N	0	0	Y	100	14.6
052-210-034	14.3	N	0	0	Y	100	14.3
052-210-033	10.3	N	0	0	N	0	0.0
052-210-013	167.4	N	0	0	Y	100	167.4
Total	3587.1		Total	0		Total	3455.5
<p>**The Imperial County Assessors website was accessed to identify the surrounding parcel numbers (http://imperialcounty.net/Assessor/index.html). The percentage of agriculture was determined from a map overlay used to estimate the proportion of land in agriculture and the California Department of Conservation Important Farmland Map Series.</p>							



LEGEND


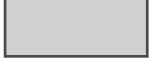
	PROJECT AREA
	ZONE OF INFLUENCE

Figure 4: Zone of Influence Map

	
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This map represents a visual display of related geographic information. Data provided hereon is not a guarantee of actual field conditions. To be sure of complete accuracy, please contact IMPERIALCOUNTY_PUBLIC staff for the most up-to-date information.

Final LESA Score Sheet				California LESA Model Scoring Thresholds	
	Factor Scores	Factor Weight	Weighted Factor Scores	Total LESA Score	Scoring Decision
LE Factors					
Land Capability Classification	63.64	0.25	15.91	0 to 39 Points	Not Considered Significant
Storie Index	58.88	0.25	14.72		
LE subtotal		0.50	30.63		
SA Factors					
Project Size	100	0.15	15.00	40 to 59 Points	Considered Significant <u>only</u> if LE and SA subscores are each <u>greater</u> than or equal to 20 points
Water Resource Availability	100	0.15	15.00		
Surrounding Agricultural Land	100	0.15	15.00	60 to 79 Points	Considered Significant <u>unless</u> either LE <u>or</u> SA subscore is <u>less</u> than 20 points
Protected Resource Land	0	0.05	0.00		
SA Subtotal		0.50	45.00		
		Total LESA Score	75.63	80 to 100 Points	Considered Significant

APPENDIX A: CALEXICO SOLAR FARM I PHASE A PROJECT SOILS DETAILS

Imperial County, California, Imperial Valley Area

106—GLENBAR CLAY LOAM, WET

Map Unit Setting

Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Glenbar, wet, and similar soils: 85 percent

Minor components: 15 percent

Description of Glenbar, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed sources

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 5.0

Available water capacity: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 2w

Land capability (nonirrigated): 7w

Typical profile

0 to 13 inches: Clay loam

13 to 60 inches: Clay loam

Minor Components

Holtville

Percent of map unit: 5 percent

Meloland

Percent of map unit: 5 percent

Indio

Percent of map unit: 5 percent

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 5, Jul 25, 2008

Imperial County, California, Imperial Valley Area

110—HOLTVILLE SILTY CLAY, WET

Map Unit Setting

Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Holtville, wet, and similar soils: 85 percent

Minor components: 15 percent

Description of Holtville, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed sources

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low
to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 10.0

Available water capacity: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): 2w

Land capability (nonirrigated): 7w

Typical profile

0 to 17 inches: Silty clay

17 to 24 inches: Clay

24 to 35 inches: Silt loam

35 to 60 inches: Loamy very fine sand

Minor Components

Glenbar

Percent of map unit: 5 percent

Imperial

Percent of map unit: 5 percent

Indio

Percent of map unit: 3 percent

Vint

Percent of map unit: 2 percent

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 5, Jul 25, 2008

Imperial County, California, Imperial Valley Area

114—IMPERIAL SILTY CLAY, WET

Map Unit Setting

Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Imperial, wet, and similar soils: 85 percent

Minor components: 15 percent

Description of Imperial, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Clayey alluvium derived from mixed sources and/or
clayey lacustrine deposits derived from mixed sources

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Very slightly saline to slightly saline (4.0 to 8.0
mmhos/cm)

Sodium adsorption ratio, maximum: 20.0

Available water capacity: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability (nonirrigated): 7w

Typical profile

0 to 12 inches: Silty clay

12 to 60 inches: Silty clay loam

Minor Components

Glenbar

Percent of map unit: 4 percent

Meloland

Percent of map unit: 4 percent

Holtville

Percent of map unit: 4 percent

Niland

Percent of map unit: 3 percent

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 5, Jul 25, 2008

Imperial County, California, Imperial Valley Area

115—IMPERIAL-GLENBAR SILTY CLAY LOAMS, WET, 0 TO 2 PERCENT SLOPES

Map Unit Setting

Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Glenbar, wet, and similar soils: 40 percent

Imperial, wet, and similar soils: 40 percent

Minor components: 20 percent

Description of Imperial, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Clayey alluvium derived from mixed sources and/or clayey lacustrine deposits derived from mixed sources

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Very slightly saline to slightly saline (4.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 20.0

Available water capacity: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability (nonirrigated): 7w

Typical profile

0 to 12 inches: Silty clay loam

12 to 60 inches: Silty clay loam

Description of Glenbar, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water
(Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 15.0
Available water capacity: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability (nonirrigated): 7w

Typical profile

0 to 13 inches: Silty clay loam
13 to 60 inches: Clay loam

Minor Components

Holtville

Percent of map unit: 10 percent

Meloland

Percent of map unit: 10 percent

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 5, Jul 25, 2008

Imperial County, California, Imperial Valley Area

122—MELOLAND VERY FINE SANDY LOAM, WET

Map Unit Setting

Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Meloland, wet, and similar soils: 85 percent

Minor components: 15 percent

Description of Meloland, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed sources and/or eolian deposits derived from mixed sources

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum: 13.0

Available water capacity: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability (nonirrigated): 7w

Typical profile

0 to 12 inches: Very fine sandy loam

12 to 26 inches: Stratified loamy fine sand to silt loam

26 to 71 inches: Clay

Minor Components

Imperial

Percent of map unit: 3 percent

Indio

Percent of map unit: 3 percent

Holtville

Percent of map unit: 3 percent

Glenbar

Percent of map unit: 3 percent

Vint

Percent of map unit: 3 percent

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area

Survey Area Data: Version 5, Jul 25, 2008

Imperial County, California, Imperial Valley Area

123—MELOLAND AND HOLTVILLE LOAMS, WET

Map Unit Setting

Elevation: -230 to 300 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Holtville, wet, and similar soils: 40 percent

Meloland, wet, and similar soils: 40 percent

Minor components: 20 percent

Description of Meloland, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed sources and/or eolian deposits derived from mixed sources

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum: 13.0

Available water capacity: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability (nonirrigated): 7w

Typical profile

0 to 12 inches: Loam

12 to 26 inches: Stratified loamy fine sand to silt loam

26 to 38 inches: Clay

38 to 60 inches: Stratified silt loam to loamy fine sand

Description of Holtville, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium and/or lacustrine deposits derived from mixed

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 10.0

Available water capacity: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability (nonirrigated): 7w

Typical profile

0 to 12 inches: Loam

12 to 24 inches: Clay

24 to 36 inches: Silt loam

36 to 60 inches: Loamy very fine sand

Minor Components

Glenbar

Percent of map unit: 4 percent

Imperial

Percent of map unit: 4 percent

Indio

Percent of map unit: 4 percent

Rositas

Percent of map unit: 4 percent

Vint

Percent of map unit: 4 percent

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area

Survey Area Data: Version 5, Jul 25, 2008

California Revised Storie Index Rating (CA)

The Storie Index is a soil rating based on soil properties that govern a soil's potential for cultivated agriculture in California.

The Storie Index assesses the productivity of a soil from the following four characteristics: Factor A, degree of soil profile development; factor B, texture of the surface layer; factor C, slope; and factor X, manageable features, including drainage, microrelief, fertility, acidity, erosion, and salt content. A score ranging from 0 to 100 percent is determined for each factor, and the scores are multiplied together to derive an index rating.

For simplification, Storie Index ratings have been combined into six grades classes as follows: Grade 1 (excellent), 100 to 80; grade 2 (good), 79 to 60; grade 3 (fair), 59 to 40; grade 4 (poor), 39 to 20; grade 5 (very poor), 19 to 10; and grade 6 (nonagricultural), less than 10.

Report—California Revised Storie Index Rating (CA)

The Storie Index is a soil rating based on soil properties that govern a soil map unit component's potential for cultivated agriculture. [Absence of an entry indicates that a Storie Index rating is not applicable or was not estimated]. For simplification, Storie Index ratings have been combined into six grades as follows: Grade 1 (Excellent): Soils that rate between 80 and 100 and which are suitable for a wide range of crops. Grade 2 (Good) Soils that rate between 60 and 79 and which are suitable for a wide range of crops. Grade 3 (Fair): Soils that range between 40 and 59. Soils in this grade may give good results with certain specialized crops. Grade 4 (Poor): Soils that rate between 20 and 39 and which have a narrow range in their agricultural potential. Grade 5 (Very Poor): Soil that rate between 10 and 19 and are of very limited agricultural use except for pasture because of adverse soil conditions. Grade 6 (Nonagricultural): Soils that rate less than 10. [The numbers in the "Limiting feature value" column range from 0.01 to 1.00. Soils with a smaller the value have a lower potential for cultivated agriculture. The table shows each of the sub-factors used to generate the Storie Index rating for each soil component].

California Revised Storie Index Rating (CA)— Imperial County, California, Imperial Valley Area				
Map symbol and soil name	Pct. of map unit	California Revised Storie Index (CA)		
		Storie index rating	Storie index grade and limiting features	Limiting feature value
106—GLENBAR CLAY LOAM, WET				
Glenbar, wet	85	72	Grade Two - Good	
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			USDA Texture	0.95
			Wetness, flooding, ponding, drainage, erosion	0.90

California Revised Storie Index Rating (CA)– Imperial County, California, Imperial Valley Area				
Map symbol and soil name	Pct. of map unit	California Revised Storie Index (CA)		
		Storie index rating	Storie index grade and limiting features	Limiting feature value
110—HOLTVILLE SILTY CLAY, WET				
Holtville, wet	85	45	Grade Three - Fair	
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			Wetness, flooding, ponding, drainage, erosion	0.90
			Toxicity	0.85
114—IMPERIAL SILTY CLAY, WET				
Imperial, wet	85	42	Grade Three - Fair	
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			Wetness, flooding, ponding, drainage, erosion	0.90
			Toxicity	0.80
115—IMPERIAL-GLENBAR SILTY CLAY LOAMS, WET, 0 TO 2 PERCENT SLOPES				
Glenbar, wet	40	72	Grade Two - Good	
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			USDA Texture	0.95
			Wetness, flooding, ponding, drainage, erosion	0.90
Imperial, wet	40	67	Grade Two - Good	
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			USDA Texture	0.95
			Wetness, flooding, ponding, drainage, erosion	0.90

California Revised Storie Index Rating (CA)– Imperial County, California, Imperial Valley Area				
Map symbol and soil name	Pct. of map unit	California Revised Storie Index (CA)		
		Storie index rating	Storie index grade and limiting features	Limiting feature value
122—MELOLAND VERY FINE SANDY LOAM, WET				
Meloland, wet	85	44	Grade Three - Fair	
			USDA Texture	1.00
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			Wetness, flooding, ponding, drainage, erosion	0.90
123—MELOLAND AND HOLTVILLE LOAMS, WET				
Holtville, wet	40	75	Grade Two - Good	
			USDA Texture	1.00
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			Wetness, flooding, ponding, drainage, erosion	0.90
Meloland, wet	40	44	Grade Three - Fair	
			USDA Texture	1.00
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			Wetness, flooding, ponding, drainage, erosion	0.90

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 5, Jul 25, 2008

**LESA ASSESSMENT
CALEXICO SOLAR FARM I
PHASE B PROJECT AREA**

CALEXICO SOLAR FARM I PHASE B PROJECT

**(N/4 Section 22, W/2 NE/4 Section 22, NE/4 NE/4 Section 22,
SE/4 NE/4 (portion) Section 22, Lot 1, 2, 3 and 4 (portion) Section 22,
SW/4 SW/4 Section 23, Lot 1 (portion) Section 23, T17S, R13E, SBB&M)**

IMPERIAL COUNTY, CALIFORNIA

April 2011

EMA Report No. 2175-02B

Prepared for:

88FT 8ME, LLC
10100 Santa Monica Boulevard, Suite 300
Los Angeles, California 90067



ENVIRONMENTAL MANAGEMENT ASSOCIATES

LAND EVALUATION AND SITE ASSESSMENT MODEL

CALEXICO SOLAR FARM I PHASE B PROJECT

**(N/4 Section 22, W/2 NE/4 Section 22, NE/4 NE/4 Section 22,
SE/4 NE/4 (portion) Section 22, Lot 1, 2, 3 and 4 (portion) Section 22,
SW/4 SW/4 Section 23, Lot 1 (portion) Section 23, T17S, R13E, SBB&M)**

IMPERIAL COUNTY, CALIFORNIA

The Land Evaluation and Site Assessment (LESA) model is an approach for rating the relative quality of land resources based upon specific measurable features. The LESA model was first developed by the federal Natural Resources Conservation Service (NRCS) in 1981. It was subsequently adapted in 1990 by the California Department of Conservation to evaluate land use decisions that affect the conversion of agriculture lands in California. The formulation of the California LESA Model is intended to provide lead agencies under the California Environmental Quality Act (CEQA) with an optional methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process.

For determining the potential CEQA significance resulting from the conversion of agricultural lands to some other purpose, the California Agricultural LESA Model has developed Scoring Thresholds which are used to compare the Final LESA Score and the Weighted Factor Scores for the Project with suggested Scoring Decisions. These LESA Scores do not take into consideration any proposed mitigation measures or other factors that might affect a lead agency's determination of the significance of the agricultural lands conversion impact under CEQA.

The information provided on the following pages present documentation of the LESA assessment prepared using the California Agricultural LESA Model for the proposed Calexico Solar Farm I Phase B Project (Project) (APNs 052-190-011-000; 052-210-018-000; 052-210-037-000; 052-210-038-000; and 052-210-039-000). The proposed Project would be constructed on approximately 613 acres of privately owned land located about eight miles west of the city of Calexico, California (Figure 1). The Project is bounded on the south by Mandrapa Road, an Imperial County road (Figure 2). The international border with Mexico is located immediately south of Mandrapa Road.

LESA ASSESSMENT
88FT 8ME, LLC
CALEXICO SOLAR FARM I PHASE B PROJECT
IMPERIAL COUNTY, NEVADA

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APPENDIX A: CALEXICO SOLAR FARM I PHASE B PROJECT SOILS DETAILS

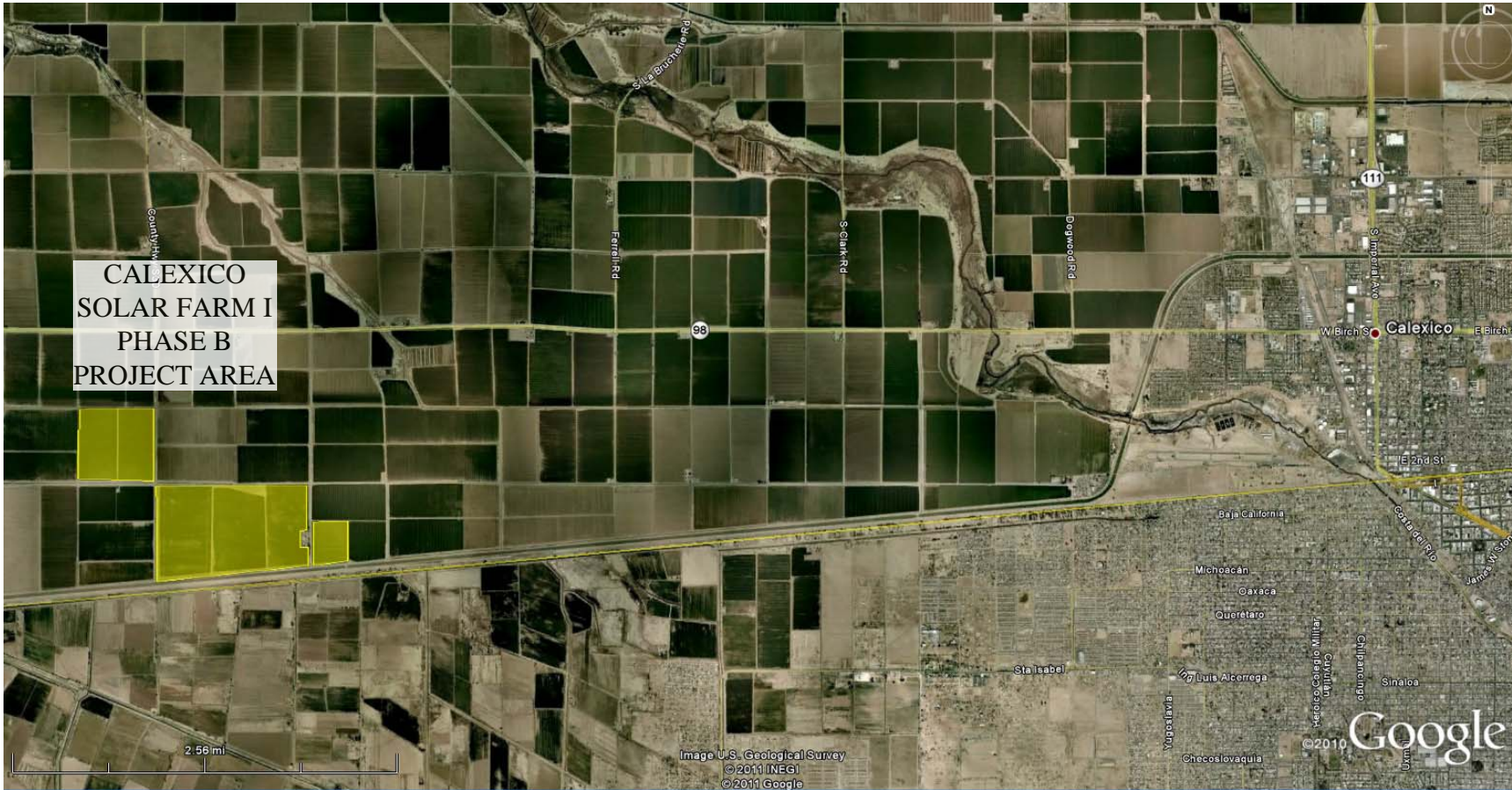


Figure 1 : Location Map



Figure 2 : Project Area on an Aerial Photographic Base

Land Evaluation Worksheet							
A	B	C	D	E	F	G	H
Soil Map Unit*	Project Acres	Proportion of Project Area	LCC** (irrigated)	LCC Rating (irrigated)***	LCC Score (C x E)	Storie Index**	Storie Index Score (C x G)
110	98.66	0.161	IIw	80	12.88	45	7.25
114	130.52	0.213	IIIw	60	12.78	42	8.95
115	293.53	0.479	IIIw	60	28.74	67	32.09
118	2.45	0.004	IIw	80	0.32	86	0.34
122	66.18	0.108	IIIw	60	6.48	44	4.75
123	2.45	0.004	IIIw	60	0.24	44	0.18
142	19.00	0.031	IIw	80	2.48	72	2.23
Totals	613	1.000		LCC Total Score	64	Storie Index Total Score	56
Total Project Area (acres)=	613						
* The Soil Map Unit information and acreage were determined from the current soil survey information available at the USDA Natural Resources Conservation Service website: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (Figure 3).							
** The Land Capability Classification and Storie Index information was obtained from the current soil survey information available at the USDA Natural Resources Conservation Service website: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (Appendix A).							
*** The LCC Rating for irrigated land was determined from the LCC Point Rating Table 2 from the LESA Instruction Manual (California Department of Conservation 1997).							

Imperial County, California, Imperial Valley Area (CA683)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
110	HOLTVILLE SILTY CLAY, WET	99.2	16.1%
114	IMPERIAL SILTY CLAY, WET	130.8	21.3%
115	IMPERIAL-GLENBAR SILTY CLAY LOAMS, WET, 0 TO 2 PERCENT SLOPES	294.5	47.9%
118	INDIO LOAM, WET	2.3	0.4%
122	MELOLAND VERY FINE SANDY LOAM, WET	66.3	10.8%
123	MELOLAND AND HOLTVILLE LOAMS, WET	2.4	0.4%
142	VINT LOAMY VERY FINE SAND, WET	19.3	3.1%
Totals for Area of Interest		614.7	100.0%

*Adjusted to 613 acres

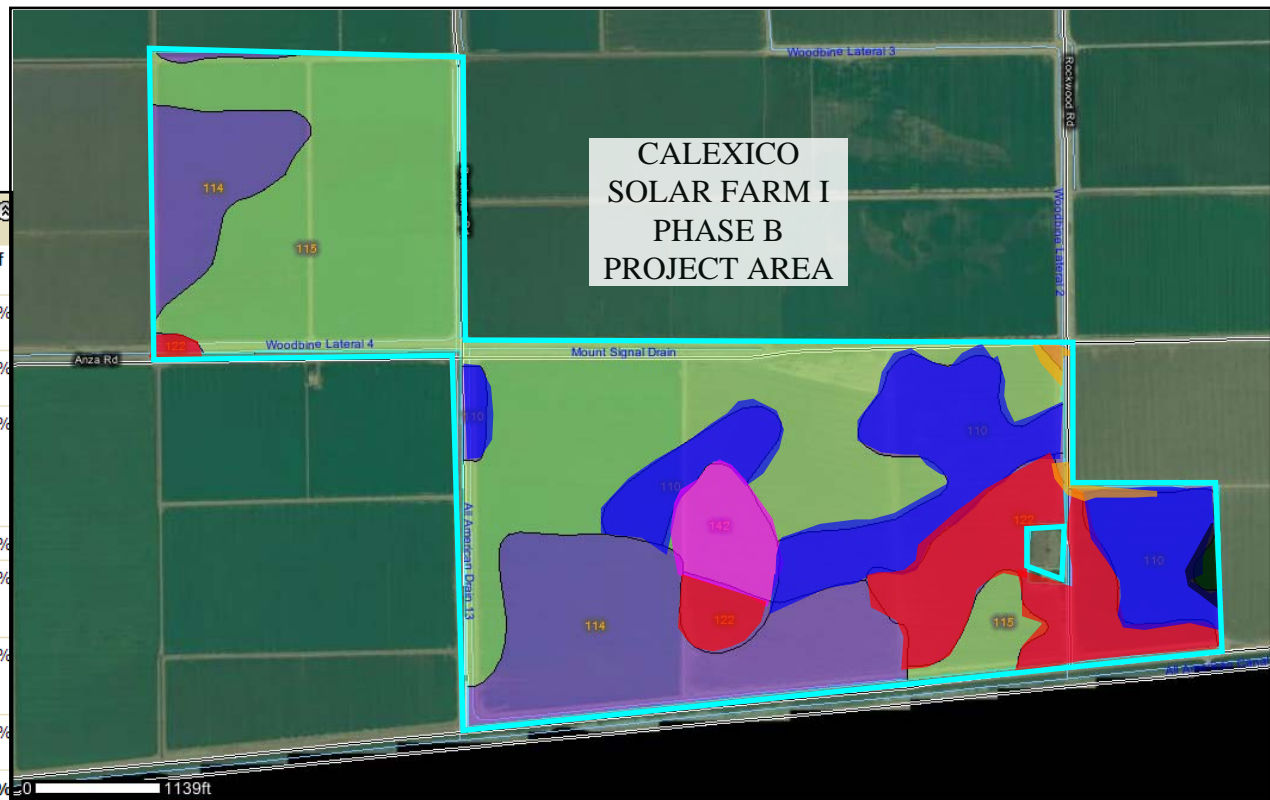


Figure 3 : Project Area Soils Map

	Site Assessment Worksheet 1		
	Project Size Score*		
	I	J	K
	LCC Class I-II	LCC Class III	LCC Class IV-VIII
<i>Project Acres per LCC Class</i>	98.66	130.52	
<i>Project Acres per LCC Class</i>	2.45	293.53	
<i>Project Acres per LCC Class</i>	19.00	66.18	
<i>Project Acres per LCC Class</i>		2.45	
<i>Project Acres per LCC Class</i>			
Total Project Acres per LCC Class	120	493	0
* Project Size Scores	100	100	0
Highest Project Size Score			
	100		
* Project Size Score was determined from the Project Size Scoring Table from the LESA Instruction Manual (California Department of Conservation 1997).			

Site Assessment Worksheet 2				
Water Resources Availability				
A	B	C	D	E
Project Portion	Water Source	Proportion of Project Area	Water Availability Score*	Weighted Availability Score (C x D)
1	Irrigation District Only	1.0	100	100
2				
3				
4				
5				
6				
		(Must Sum to 1.0)	Total Water Resource Score	100

* The Water Availability Score was determined using the Water Resources Availability Scoring Table from the LESA Instruction Manual (California Department of Conservation 1997).

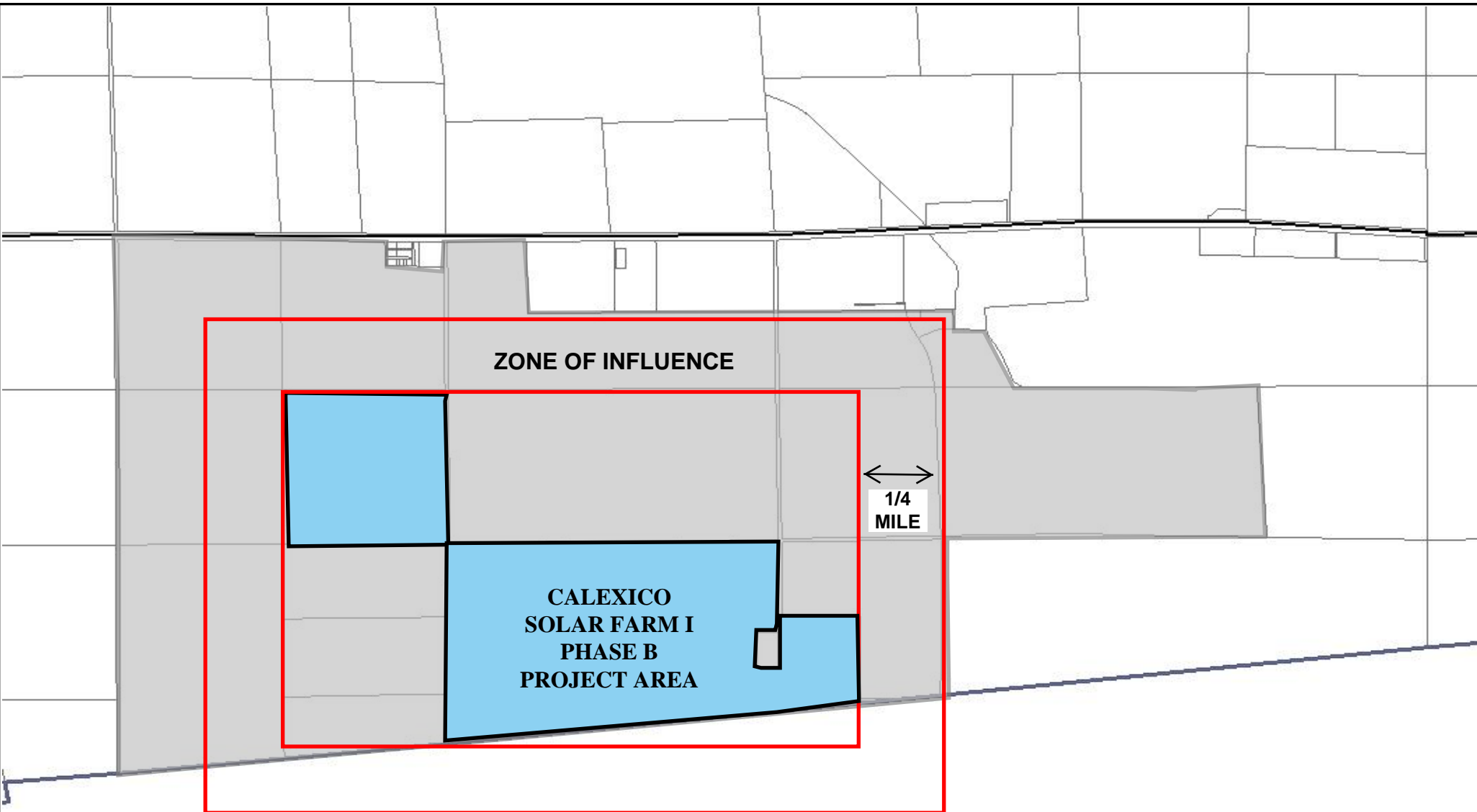
Site Assessment Worksheet 3						
Surrounding Agricultural Land & Surrounding Protected Resource Land						
A	B	C	D	E	F	G
Zone of Influence*					Surrounding Agricultural Land Score (From LESA Manual Table 6)	Surrounding Protected Resource Land Score (From LESA Manual Table 7)**
Total Acres	Acres in Agriculture	Acres of Protected Resource Land	Percent in Agriculture (B/A)	Percent Protected Resource Land (C/A)		
2232.4	2194	0	98	0	100	0

* In conformance with the instructions in the LESA Instruction Manual (California Department of Conservation 1997), the Zone of Influence was determined by drawing the smallest rectangle that could completely encompass the entire Project Area. A second rectangle was then drawn which extended one quarter mile on all sides beyond the first rectangle. The Zone of Influence is represented by the entire area of all parcels with any lands inside the outer rectangle, less the area of the proposed project (Figure 4).

** The LESA Instruction Manual (California Department of Conservation 1997) describes *Protected Resource Land* as those lands with long term use restrictions that are compatible with or supportive of agricultural uses of land. Included among them are the following: Williamson Act contracted lands; Publicly owned lands maintained as park, forest, or watershed resources; and Lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses.

Surrounding Parcels***	Acres	Protected Resource Land?	Percent Protected Resource Land	Acres in Protected Land	Agricultural Land?	Percent Agricultural Land	Acres of Agriculture
052-190-010	150.7	N	0	0	Y	100	150.7
052-190-024	80.8	N	0	0	Y	100	80.8
052-190-025	83.9	N	0	0	Y	100	83.9
052-190-026	60.0	N	0	0	Y	100	60.0
052-210-001	203.7	N	0	0	Y	100	203.7
052-210-002	41.3	N	0	0	Y	100	41.3
052-210-015	156.0	N	0	0	Y	100	156.0
052-210-029	73.3	N	0	0	Y	100	73.3
052-210-006	0.4	N	0	0	Y	100	0.4
052-210-019	123.5	N	0	0	Y	100	123.5
052-210-016	331.7	N	0	0	Y	100	331.7
052-190-023	240.0	N	0	0	Y	100	240.0
052-190-012	167.3	N	0	0	Y	100	167.3
052-190-009	161.5	N	0	0	Y	100	161.5
052-210-030	0.7	N	0	0	Y	100	0.7

Surrounding Parcels***	Acres	Protected Resource Land?	Percent Protected Resource Land	Acres in Protected Land	Agricultural Land?	Percent Agricultural Land	Acres of Agriculture
052-210-031	5.6	N	0	0	N	0	0.0
052-210-032	28.3	N	0	0	N	0	0.0
052-210-014	318.5	N	0	0	Y	100	318.5
052-210-040	4.8	N	0	0	N	0	0.0
Total	2232.4		Total	0		Total	2193.6
<p>**The Imperial County Assessors website was accessed to identify the surrounding parcel numbers (http://imperialcounty.net/Assessor/index.html). The percentage of agriculture was determined from a map overlay used to estimate the proportion of land in agriculture and the California Department of Conservation Important Farmland Map Series.</p>							



LEGEND



	PROJECT AREA
	ZONE OF INFLUENCE

Figure 4: Zone of Influence Map



This map represents a visual display of related geographic information. Data provided hereon is not a guarantee of actual field conditions. To be sure of complete accuracy, please contact IMPERIALCOUNTY_PUBLIC staff for the most up-to-date information.

Final LESA Score Sheet				California LESA Model Scoring Thresholds	
	Factor Scores	Factor Weight	Weighted Factor Scores	Total LESA Score	Scoring Decision
LE Factors					
Land Capability Classification	63.92	0.25	15.98	0 to 39 Points	Not Considered Significant
Storie Index	55.79	0.25	13.95		
LE subtotal		0.50	29.93		
SA Factors					
Project Size	100	0.15	15.00	40 to 59 Points	Considered Significant <u>only</u> if LE and SA subscores are each <u>greater</u> than or equal to 20 points
Water Resource Availability	100	0.15	15.00		
Surrounding Agricultural Land	100	0.15	15.00	60 to 79 Points	Considered Significant <u>unless</u> either LE <u>or</u> SA subscore is <u>less</u> than 20 points
Protected Resource Land	0	0.05	0.00		
SA Subtotal		0.50	45.00		
		Total LESA Score	74.93	80 to 100 Points	Considered Significant

APPENDIX A: CALEXICO SOLAR FARM I PHASE B PROJECT SOILS DETAILS

Imperial County, California, Imperial Valley Area

110—HOLTVILLE SILTY CLAY, WET

Map Unit Setting

Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Holtville, wet, and similar soils: 85 percent

Minor components: 15 percent

Description of Holtville, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed sources

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low
to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 10.0

Available water capacity: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): 2w

Land capability (nonirrigated): 7w

Typical profile

0 to 17 inches: Silty clay

17 to 24 inches: Clay

24 to 35 inches: Silt loam

35 to 60 inches: Loamy very fine sand

Minor Components

Glenbar

Percent of map unit: 5 percent

Imperial

Percent of map unit: 5 percent

Indio

Percent of map unit: 3 percent

Vint

Percent of map unit: 2 percent

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 5, Jul 25, 2008

Imperial County, California, Imperial Valley Area

114—IMPERIAL SILTY CLAY, WET

Map Unit Setting

Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Imperial, wet, and similar soils: 85 percent

Minor components: 15 percent

Description of Imperial, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Clayey alluvium derived from mixed sources and/or
clayey lacustrine deposits derived from mixed sources

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Very slightly saline to slightly saline (4.0 to 8.0
mmhos/cm)

Sodium adsorption ratio, maximum: 20.0

Available water capacity: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability (nonirrigated): 7w

Typical profile

0 to 12 inches: Silty clay

12 to 60 inches: Silty clay loam

Minor Components

Glenbar

Percent of map unit: 4 percent

Meloland

Percent of map unit: 4 percent

Holtville

Percent of map unit: 4 percent

Niland

Percent of map unit: 3 percent

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 5, Jul 25, 2008

Imperial County, California, Imperial Valley Area

115—IMPERIAL-GLENBAR SILTY CLAY LOAMS, WET, 0 TO 2 PERCENT SLOPES

Map Unit Setting

Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Glenbar, wet, and similar soils: 40 percent

Imperial, wet, and similar soils: 40 percent

Minor components: 20 percent

Description of Imperial, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Clayey alluvium derived from mixed sources and/or clayey lacustrine deposits derived from mixed sources

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Very slightly saline to slightly saline (4.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 20.0

Available water capacity: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability (nonirrigated): 7w

Typical profile

0 to 12 inches: Silty clay loam

12 to 60 inches: Silty clay loam

Description of Glenbar, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water
(Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 15.0
Available water capacity: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability (nonirrigated): 7w

Typical profile

0 to 13 inches: Silty clay loam
13 to 60 inches: Clay loam

Minor Components

Holtville

Percent of map unit: 10 percent

Meloland

Percent of map unit: 10 percent

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 5, Jul 25, 2008

Imperial County, California, Imperial Valley Area

118—INDIO LOAM, WET

Map Unit Setting

Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Indio, wet, and similar soils: 85 percent

Minor components: 15 percent

Description of Indio, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed sources and/or eolian deposits derived from mixed sources

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum: 5.0

Available water capacity: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): 2w

Land capability (nonirrigated): 7w

Typical profile

0 to 12 inches: Loam

12 to 72 inches: Stratified loamy very fine sand to silt loam

Minor Components

Vint

Percent of map unit: 6 percent

Meloland

Percent of map unit: 3 percent

Holtville

Percent of map unit: 3 percent

Glenbar

Percent of map unit: 3 percent

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 5, Jul 25, 2008

Imperial County, California, Imperial Valley Area

122—MELOLAND VERY FINE SANDY LOAM, WET

Map Unit Setting

Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Meloland, wet, and similar soils: 85 percent

Minor components: 15 percent

Description of Meloland, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed sources and/or eolian deposits derived from mixed sources

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum: 13.0

Available water capacity: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability (nonirrigated): 7w

Typical profile

0 to 12 inches: Very fine sandy loam

12 to 26 inches: Stratified loamy fine sand to silt loam

26 to 71 inches: Clay

Minor Components

Imperial

Percent of map unit: 3 percent

Indio

Percent of map unit: 3 percent

Holtville

Percent of map unit: 3 percent

Glenbar

Percent of map unit: 3 percent

Vint

Percent of map unit: 3 percent

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area

Survey Area Data: Version 5, Jul 25, 2008

Imperial County, California, Imperial Valley Area

123—MELOLAND AND HOLTVILLE LOAMS, WET

Map Unit Setting

Elevation: -230 to 300 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Holtville, wet, and similar soils: 40 percent

Meloland, wet, and similar soils: 40 percent

Minor components: 20 percent

Description of Meloland, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed sources and/or eolian deposits derived from mixed sources

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum: 13.0

Available water capacity: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability (nonirrigated): 7w

Typical profile

0 to 12 inches: Loam

12 to 26 inches: Stratified loamy fine sand to silt loam

26 to 38 inches: Clay

38 to 60 inches: Stratified silt loam to loamy fine sand

Description of Holtville, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium and/or lacustrine deposits derived from mixed

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 10.0

Available water capacity: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability (nonirrigated): 7w

Typical profile

0 to 12 inches: Loam

12 to 24 inches: Clay

24 to 36 inches: Silt loam

36 to 60 inches: Loamy very fine sand

Minor Components

Glenbar

Percent of map unit: 4 percent

Imperial

Percent of map unit: 4 percent

Indio

Percent of map unit: 4 percent

Rositas

Percent of map unit: 4 percent

Vint

Percent of map unit: 4 percent

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area

Survey Area Data: Version 5, Jul 25, 2008

Imperial County, California, Imperial Valley Area

142—VINT LOAMY VERY FINE SAND, WET

Map Unit Setting

Elevation: -230 to 150 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Map Unit Composition

Vint, wet, and similar soils: 90 percent

Minor components: 10 percent

Description of Vint, Wet

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed sources and/or eolian deposits derived from mixed sources

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)

Available water capacity: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): 2w

Land capability (nonirrigated): 7w

Typical profile

0 to 10 inches: Loamy very fine sand

10 to 60 inches: Loamy fine sand

Minor Components

Indio

Percent of map unit: 5 percent

California Revised Storie Index Rating (CA)

The Storie Index is a soil rating based on soil properties that govern a soil's potential for cultivated agriculture in California.

The Storie Index assesses the productivity of a soil from the following four characteristics: Factor A, degree of soil profile development; factor B, texture of the surface layer; factor C, slope; and factor X, manageable features, including drainage, microrelief, fertility, acidity, erosion, and salt content. A score ranging from 0 to 100 percent is determined for each factor, and the scores are multiplied together to derive an index rating.

For simplification, Storie Index ratings have been combined into six grades classes as follows: Grade 1 (excellent), 100 to 80; grade 2 (good), 79 to 60; grade 3 (fair), 59 to 40; grade 4 (poor), 39 to 20; grade 5 (very poor), 19 to 10; and grade 6 (nonagricultural), less than 10.

Report—California Revised Storie Index Rating (CA)

The Storie Index is a soil rating based on soil properties that govern a soil map unit component's potential for cultivated agriculture. [Absence of an entry indicates that a Storie Index rating is not applicable or was not estimated]. For simplification, Storie Index ratings have been combined into six grades as follows: Grade 1 (Excellent): Soils that rate between 80 and 100 and which are suitable for a wide range of crops. Grade 2 (Good) Soils that rate between 60 and 79 and which are suitable for a wide range of crops. Grade 3 (Fair): Soils that range between 40 and 59. Soils in this grade may give good results with certain specialized crops. Grade 4 (Poor): Soils that rate between 20 and 39 and which have a narrow range in their agricultural potential. Grade 5 (Very Poor): Soil that rate between 10 and 19 and are of very limited agricultural use except for pasture because of adverse soil conditions. Grade 6 (Nonagricultural): Soils that rate less than 10. [The numbers in the "Limiting feature value" column range from 0.01 to 1.00. Soils with a smaller the value have a lower potential for cultivated agriculture. The table shows each of the sub-factors used to generate the Storie Index rating for each soil component].

California Revised Storie Index Rating (CA)— Imperial County, California, Imperial Valley Area				
Map symbol and soil name	Pct. of map unit	California Revised Storie Index (CA)		
		Storie index rating	Storie index grade and limiting features	Limiting feature value
110—HOLTVILLE SILTY CLAY, WET				
Holtville, wet	85	45	Grade Three - Fair	
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			Wetness, flooding, ponding, drainage, erosion	0.90
			Toxicity	0.85

California Revised Storie Index Rating (CA)– Imperial County, California, Imperial Valley Area				
Map symbol and soil name	Pct. of map unit	California Revised Storie Index (CA)		
		Storie index rating	Storie index grade and limiting features	Limiting feature value
114—IMPERIAL SILTY CLAY, WET				
Imperial, wet	85	42	Grade Three - Fair	
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			Wetness, flooding, ponding, drainage, erosion	0.90
			Toxicity	0.80
115—IMPERIAL-GLENBAR SILTY CLAY LOAMS, WET, 0 TO 2 PERCENT SLOPES				
Glenbar, wet	40	72	Grade Two - Good	
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			USDA Texture	0.95
			Wetness, flooding, ponding, drainage, erosion	0.90
Imperial, wet	40	67	Grade Two - Good	
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			USDA Texture	0.95
			Wetness, flooding, ponding, drainage, erosion	0.90
118—INDIO LOAM, WET				
Indio, wet	85	86	Grade One - Excellent	
			USDA Texture	1.00
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			Toxicity	0.97

California Revised Storie Index Rating (CA)– Imperial County, California, Imperial Valley Area				
Map symbol and soil name	Pct. of map unit	California Revised Storie Index (CA)		
		Storie index rating	Storie index grade and limiting features	Limiting feature value
122—MELOLAND VERY FINE SANDY LOAM, WET				
Meloland, wet	85	44	Grade Three - Fair	
			USDA Texture	1.00
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			Wetness, flooding, ponding, drainage, erosion	0.90
123—MELOLAND AND HOLTVILLE LOAMS, WET				
Holtville, wet	40	75	Grade Two - Good	
			USDA Texture	1.00
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			Wetness, flooding, ponding, drainage, erosion	0.90
Meloland, wet	40	44	Grade Three - Fair	
			USDA Texture	1.00
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			Wetness, flooding, ponding, drainage, erosion	0.90
142—VINT LOAMY VERY FINE SAND, WET				
Vint, wet	90	72	Grade Two - Good	
			Rated Soil Order	1.00
			Profile Group	1.00
			Nearly level to gently sloping	0.98
			USDA Texture	0.95
			Wetness, flooding, ponding, drainage, erosion	0.90

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 5, Jul 25, 2008

Meloland

Percent of map unit: 5 percent

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 5, Jul 25, 2008