Appendix B

Viewshed Analysis

September 24, 2021; Revised October 14, 2021

Ms. Amy Fuller
Lockhart Solar PV II, LLC
11455 El Camino Real, Suite 160
San Diego, California 92130

Subject: Lockhart Solar PV II Project - Viewshed Analysis

PROJECT LOCATION

The Lockhart Solar PV II Project (Project) is in unincorporated Hinkley, CA, approximately 7 miles north of the intersection of Harper Lake Road and Mojave-Barstow Highway 58 (SR 58). **Exhibit 1**, *Viewshed Map*, depicts the location of the Project Site. The Project Site consists of area within three parcels, each of which contain vacant, previously disturbed land, miscellaneous concrete foundations, various electrical lines and poles, as well as existing facilities within the Shared Facilities Area. The Project Site is bordered on the south by the existing Solar Energy Generating Systems (SEGS) VIII and IX Solar Thermal Power Plants, which the County of San Bernardino (County) approved for repowering to photovoltaic (PV) solar and battery storage in 2019 as part of the Lockhart Solar I Facility (CUP Project #201900125 approved in 2019); Harper Lake Road to the southeast; Hoffman Road to the west; and vacant land to the north. Vehicular access to the Project Site is currently provided via existing access gates off of Hoffman Road at the southern end of the Shared Facilities Area, as well as an existing access gate off of Harper Lake Road at the eastern end of the Project Site.

The Project Site is located approximately 620 feet above mean sea level (amsl) along the floor of Harper Valley. Land within the Project Site and in the surrounding area are relatively flat, providing limited variation in elevational relief. Topography generally rises from the valley floor at a distance from the Project Site, with the Gravel Hills located approximately 9.3 miles to the north (3,861 feet amsl); Black Mountain approximately 8.2 miles to the northeast (3,704 feet amsl), Iron Mountain approximately 13 miles to the southeast (2,918 feet amsl), Kramer Hills approximately 9.9 miles to the to the southwest (3,346 feet amsl), and The Buttes approximately 3.3 miles to the northwest (2,307 feet amsl); refer to **Exhibit 1**, *Viewshed Map*, and **Exhibit 2**, *Scenic Highways/Key Vantage Points*.

PROJECT DESCRIPTION

The Project includes development of a utility scale, solar PV electricity generation and energy storage facility that would produce up to 150 megawatts (MW) of solar power and include up to 4 gigawatt hours (GWh) of energy storage capacity rate in a battery energy storage system (BESS)

5 Hutton Centre Drive, Suite 500 | Santa Ana, CA 92707
Office: 949.472.3505 | Fax: 949.472.8373

within the approximately 755-acre Project Site. The Project is bordered on the south by the approved Lockhart Solar I Facility site. The Project would share existing operations and maintenance (O&M) facilities (i.e., O&M building, warehouse and employee building), water and septic systems, existing switchyard and electrical transmission infrastructure, and a new collector substation (approved and to be constructed) within the Shared Facilities Area to connect the Project to the existing 13.8-mile transmission line which runs to the Southern California Edison (SCE)-owned Kramer Junction substation.

The tallest proposed structures on the Project Site would be the BESS containers within the Shared Facilities Area, which would be up to approximately 21.6 feet in height (including the height needed for heating, ventilating, and air conditioning [HVAC] systems). The batteries would be housed in open-air-style racking within its enclosed container (similar to computer racking).

EXISTING SETTING

As stated, the Project Site is bordered on the south by the existing SEGS VIII and IX Solar Thermal Power Plants. Additionally, the Abengoa Mojave Solar Project (MSP) is located further to the south of the Project Site across Hoffman Road. Harper Lake Road is located to the east; Hoffman Road to the west; and vacant land to the north. Vehicular access to the Project Site is provided via Harper Lake Road and a private road through the Lockhart Solar I Facility site. Refer also to **Exhibit 1**, *Viewshed Map*, and **Exhibit 3A**, *Surrounding Land Uses*.

Existing SEGS VIII and IX facilities within the Shared Facilities Area include the O&M building, warehouse, employee building, switchyard and other supporting facilities. The tallest existing structures associated with the existing SEGS VIII and IX Solar Thermal Power Plants are emission stack/cooling towers at a height of approximately 82 feet. Evaporation ponds are also present adjacent to the southwest boundary of the Project Site. Refer to **Exhibit 3A**, *Surrounding Land Uses*. The SEGS VIII and IX facilities were constructed in the early 1990s and have therefore been part of the existing visual landscape since that time.

The Project is largely sited on land previously approved by the California Energy Commission (CEC) for development of SEGS X, a solar thermal power facility which was never fully constructed. The Project Site has been subject to near complete surface disturbance associated with past agricultural use, grading and partial construction of the SEGS X facility, as well as construction of the Shared Facilities Area for the existing SEGS VIII and IX Solar Thermal Power Plants.

The SEGS X site itself was largely graded during initial construction of the SEGS X facility before construction was halted in the early 1990s. While the land was under alfalfa cultivation prior to grading for SEGS X, the site has sat largely undisturbed since SEGS X construction was halted and some of the historically cultivated acreage has become naturally revegetated. The Project Site

contains some vegetation with portions composed of previously disturbed land, bare ground, as well as existing facilities within the Shared Facilities Area. The Project Site currently includes several concrete foundations for the power block as well as concrete foundations for solar racking piers and various electrical lines and poles that were installed as part of the initial construction undertaken for the SEGS X facility. The previously installed SEGS X concrete foundations would be removed if the foundations conflict with installation of Project facilities; they would otherwise be left in place. Previously constructed concrete solar racking piers present in the southwestern portion of the Project Site would remain in place as newer steel foundation piles can be driven around the old piers; refer to **Exhibit 3B**, *On-site Photographs*. Additionally, the perimeter of the Project Site is currently fenced.

VIEWSHED METHODOLOGY

The California Environmental Quality Act (CEQA) Guidelines state that a project has the potential to result in a significant impact if it would (except as provided in Public Resources Code Section 21099) have a substantial adverse effect on a scenic vista; substantially damage scenic resources; or, substantially degrade the existing visual character or quality of public views of the site and its surroundings.

Public views are those that are experienced from publicly accessible vantage points. In addition, CEQA Guidelines Section 15064(b) states "…the significance of an activity may vary with the setting…an activity which may not be significant in an urban area may be significant in a rural area." Thus, the degree of visual change in public views experienced by a viewer as a result of development occurring in a rural setting may have a different visual effect as compared to the same project located in an urbanized environment.

This evaluation is intended to identify where views of the Project from public vantage points (i.e., scenic highways, public trails, etc.) may potentially be afforded. Consideration for viewer exposure (i.e., length of time views may be experienced) and viewer sensitivity (i.e., local resident versus area visitor, familiarity with the existing setting, etc.) was also given in assessing viewer response (how a viewer may respond to a change in the visual setting) following Project implementation.

The viewshed is the geographical area that is visible from a particular location. This includes all surrounding points that are in line-of-sight with that location and excludes points that are beyond the horizon or obstructed by terrain and other features (e.g., buildings, topography, trees). A viewshed map (in graphic form) portrays the visible and non-visible areas of a project feature or element within a given radius. A viewshed analysis is intended to aid consideration of potential areas from which a proposed project could be visible.

Landform, land cover, and atmospheric conditions are generally considered to physically constrain views within the viewshed. Landform is the most basic constraint and is most likely not

to be modified, or modified only at a localized level, during construction of a project. Landform provides perspective for a viewer, while also having the potential to obscure views. Land cover consisting of vegetation and/or structures can also represent potential obstacles, thereby obscuring views. Atmospheric conditions such as smoke, dust, fog, or precipitation can further influence visibility.

Additionally, the extent to which a project is visible is further constrained by the physiological limits of human sight. Location, proximity, and light are key factors in influencing the physiological limits of what a viewer is able to see.[1]

Views are also influenced by the distance between the viewer and the resource being viewed. Typically, the closer a resource is to the viewer, the more visually dominant the resource is. Generally, distance zones (or the position of the viewer in relationship to the landscape) are defined as follows:[2]

- Foreground: 0.25-0.5 mile from the viewer
- Middleground: Extends from the foreground zone to 3-5 miles from the viewer
- Background: Extends from the middleground zone to the limit of visibility

As described in the U.S. Department of Transportation's *Guidelines for the Visual Impact Assessment of Highway Projects* (January 2015), within the foreground, a viewer is generally able to see greater details that are immediately available, allowing the viewer to understand relative scale based on the relation of the viewer's size to surrounding landscape elements.

Within the middleground, adequate distance is provided to allow a viewer to relate individual visual elements to the surrounding landscape in order to gain an understanding of context in which the foreground lies. The middleground provides the visual context where discernible project elements would be most visible within the landscape and interpreted by viewers. However, visual features within the foreground and middleground can interfere with, or even obscure, background views.

Within the background, the perceived mass and visibility of project elements are reduced by distance and are less dominant within the visual landscape as details are lost. Within the background, project elements may visually blend in scale and color with other elements within the existing landscape so that views are dominated by broad forms, large-scale patterns, and muted colors of the surrounding landscape.[3]

[1] *Guidelines for the Visual Impact Assessment of Highway Projects.* U.S. Department of Transportation. January 2015.
[2] Ibid.
[3] Ibid.

VIEWSHED ANALYSIS

A viewshed analysis has been performed for Project elements including the solar PV panels, BESS, and associated infrastructure. The viewshed analysis considered the height of the various structures proposed as part of the Project and the potential visibility of such components within the visual landscape. As noted above, the tallest proposed structures are the BESS containers (approximately 21.6 feet in height, inclusive of HVAC systems) which was considered as part of the viewshed analysis to evaluate a "worst-case" scenario (i.e., structural element of greatest visibility to off-site viewers).

Generally, viewers cannot ascertain details at distances greater than three miles; therefore, the viewshed has been created for a three-mile radius from the Project Site boundaries using Geographic Information System technology, elevation data from Project engineering plans (received in July 2021), and 2006 Digital Surface Model (DSM) data. The Project plans and DSM data were then merged together to form a simulated condition of the Project in which to perform the viewshed analysis.

As depicted in **Exhibit 1**, *Viewshed Map*, Project elements may be intermittently visible as one travels along the valley floor in close proximity to the Project Site (i.e., Harper Lake Road, Hoffman Road, Lockhart Ranch Road). As illustrated in **Exhibit 1**, and **Exhibit 3F**, *Off-site Photographs*, potential visibility of Project elements within the viewshed, particularly when viewed from areas to the north and south of the site, would be reduced as distance increases.

The following is a description of existing public views in the Project area and an assessment of potential viewer response to a change in existing public views following project implementation.

> **Local Roadways**. No designated scenic views/vistas are present along local roadways in the vicinity of the Project Site (i.e., Harper Lake Road, Hoffman Road, and Lockhart Ranch Road), as identified in the County General Plan. Refer also to State Scenic Highways, below.
>
> As stated above, the Project Site is comprised of previously disturbed land with portions containing existing miscellaneous concrete foundations and various infrastructure within the former SEGS X portion of the Project Site, as well as an existing O&M building, warehouse and employee building, and electrical transmission infrastructure and poles within the Shared Facilities Area; refer to **Exhibit 3A**, *Surrounding Land Uses*; **Exhibit 3B**, *On-site Photographs*; and **Exhibits 3C** to **3E**. No resources having scenic value or mature vegetation are present on the Project Site. Following Project implementation, travelers along local public roadways may experience intermittent views of Project elements, depending on viewer location along the roadway, proximity to the Project Site, and intervening topography or other development. Harper Lake Road to the southeast, Lockhart Ranch Road to the north, and Hoffman Road to the west/north have a County roadway classification of Controlled/Limited Access Collectors with estimated volumes of

200-300 average daily vehicle trips. Although these public roads are predominately used by local residents who may be more sensitive to a change in visual conditions on the Project Site, such viewers would be limited in number and views experienced would be brief and intermittent.

Additionally, as the Project Site is bordered to the south by the SEGS VIII and IX Solar Thermal Power Plants as well as MSP further to the south across Hoffman Road, installation of Project elements would not introduce new physical elements into the visual landscape that would substantially differ from existing development already present in the vicinity. Visibility of the Project from these local roadways along the valley floor would be further reduced as views would occur at a similar elevation as the Project Site (i.e., flat viewing plane).

As previously stated, the tallest existing structures associated with the SEGS VIII and IX solar facilities are emission stack/cooling towers having a height of approximately 82 feet. It should be noted that, as the tallest Project structure would be approximately 21.6 feet, structural elements on the Project Site would be substantially shorter than existing solar-related components on adjacent lands, and therefore, would be less visible than existing features within the visual landscape when viewed from SR-58 or other area roadways discussed below.

For the reasons stated above, viewer response to a change in the visual environment due to Project implementation is considered to be low. The Project would not substantially alter existing public views experienced from local roadways or adversely affect designated scenic views or vistas.

State Scenic Highways. State Scenic Highways are highways that are either officially designated by the California Department of Transportation (Caltrans) or are eligible for designation. Designation of a highway as "scenic" is dependent upon the visibility of the natural landscape to travelers, the aesthetic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. Refer to **Exhibit 2**, *Scenic Highways/Key Vantage Points*, which identifies eligible and designated State scenic highways of the state highways system. Refer also to **Exhibit 3F**, *Off-site Photographs*, which shows representative views from area scenic roadways.

- State Route 58 (SR-58) Motorists. According to the Caltrans *California State Scenic Highway System Map*, SR-58 is eligible for listing.[4] As shown on **Exhibit 2**, *Scenic Highways/Key Vantage Points*, at the closest vantage point, views from SR-58 would be distanced approximately seven miles to the southwest of the Project Site. Due to

[4] California Department of Transportation, *California State Scenic Highway System Map*, August 2019, https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways, accessed July 6, 2021.

such viewing distances, Project elements would not be readily visible within the visual landscape; refer to **Exhibit 3F,** *Off-site Photographs.* Although brief and intermittent views to the Project Site may be afforded at various points as one travels along the roadway, the addition of Project elements within the visual landscape would not substantially change existing public views from SR-58. Direct views from SR-58 to the Project Site would be largely obscured by the existing SEGS and MSP facilities. Visibility of the Project would be further influenced by intervening topography and elevational differences (i.e., flat viewing plane versus elevated vantage points along the roadway).

It should be noted that, upon intended future repower of the SEGS VIII and IX Solar Thermal Power Plants, which the County approved for repowering to PV solar and battery storage in 2019 as part of the Lockhart Solar I Facility, construction of future Lockhart Solar I Facility structures would also obscure views to Project facilities from SR-58.

Additionally, as SR-58 traverses the valley floor in an east/west orientation in the vicinity of the Project Site, views would generally be oriented east/west, rather than north toward the Project Site (i.e., requiring the viewer to consciously turn his/her head northward to experience views to the Project). As such, readily available views toward the Project from SR-58 would not occur.

Therefore, existing views from SR-58 to the Project Site would not be substantially changed with Project implementation. Viewer response to a change in the visual environment due to Project implementation is considered to be low.

- Route 66 Byway Motorists. According to the Caltrans *California State Scenic Highway System Map*, Route 66, which trends to the southeast of the Project Site, is an official Federal Byway;[5] refer to **Exhibit 2**, *Scenic Highways/Key Vantage Points*. Motorists traveling along the Route 66 Byway [along Interstate 15 (I-15) and Route 40] would generally be distanced from the Project Site by over 15 miles. Due to the overall distance from the Project Site, combined with intervening topography located in between this highway and the Project Site, Project elements would not be discernable within the visual landscape from this roadway. Additionally, views of the Project from the roadway would be obstructed by existing facilities within the MSP and the SEGS facilities.

  Therefore, existing views from Route 66 to the Project Site would not be substantially changed with Project implementation. Viewer response to a change in the visual environment due to Project implementation is considered to be low.

[5] Ibid.

- Interstate 15 (I-15) Motorists. According to the Caltrans *California State Scenic Highway System Map*, I-15 (eastward from its intersection with SR-58) is eligible for listing; refer to **Exhibit 2**, *Scenic Highways/Key Vantage Points*.[6] I-15 is situated greater than 15 miles to the south/southeast of the Project Site at its closest point. Due to the overall distance from the Project Site, combined with intervening topography and other existing large-scale solar facilities in between this highway and the Project Site, it is not anticipated that travelers along this roadway would experience readily available views to the Project Site; refer to **Exhibit 3F** which provides a representative view of the Project Site and vicinity. Although the Project Site itself may be discernible within the visual landscape from certain vantage points along I-15, the introduction of Project elements would not substantially degrade or alter existing public views. Viewer response to a change in the visual environment due to Project implementation is considered to be low.

- State Route 247 (SR-247) Motorists. According to the Caltrans *California State Scenic Highway System Map*, SR-247 is eligible for listing; refer to **Exhibit 2**, *Scenic Highways/Key Vantage Points*.[7] SR-247 is located more than 20 miles to the southeast of the Project Site at its closest point. Similar to public views experienced from I-15, as described above, motorists traveling along this roadway are not anticipated to readily view Project elements within the visual landscape, due to the overall distance from the Project Site and relative height and scale of the Project components. Potential views to the Project Site from this road would be further influenced and/or reduced by intervening topography and other existing development.

  Therefore, existing public views from SR-247 to the Project Site would not be substantially changed with Project implementation. Viewer response to a change in the visual environment due to Project implementation is considered to be low.

Recreational/Public Lands. No existing views of the Project Site from public recreational areas, including public trails, are afforded. Based on the Policy Map NR-2, Parks and Open Space Resources, of the Draft County General Plan, the Project Site is not located within proximity to any regional or state parks, national parks or preserves, national forests, or off-highway vehicle areas. Additionally, the Project is not situated near a non-motorized transportation plan area (e.g., Rim of the World, Big Bear Valley, or Morongo Basin). The nearest public non-motorized pathway is situated greater than 11 miles southwest, along SR-58 near the town of Hinkley.

However, according to County of San Bernardino Draft General Plan Policy Map N-2, Parks & Open Space Resources, the site is surrounded by lands designated as Bureau of Land Management (BLM) Areas of Critical Environmental Concern. Additionally, according to Policy Map N-2, Parks & Open Space Resources, lands designated as BLM California Desert

[6] Ibid.
[7] Ibid.

National Conservation Land are located approximately 6 miles to the northeast; lands designated as BLM Wilderness Land are located further to the northeast. Limited views to the Project Site may be afforded from intermittent locations within these lands; however, as previously described, due to distance, proposed height of the Project elements, intervening topography, and adjacency to similarly developed solar facilities to the south, the introduction of the Project into the existing visual landscape is not anticipated to adversely affect or change existing views from these areas.

Based on the above-described conditions, viewer response to a change in the visual environment as experienced from any area recreational uses, as a result of Project implementation, is considered to be low.

CONCLUSION

As discussed above, there are no designated vistas or scenic views in the vicinity of the Project Site per the County General Plan; therefore, there would be no existing public views that would be adversely affected or otherwise substantially altered as the result of Project implementation. Additionally, existing public views from dedicated parks or open space resources in the vicinity to the Project Site would not be adversely affected by the proposed development.

Potential views to the Project Site from the nearest designated scenic highway and/or eligible scenic highway would occur at a distance of approximately 7 miles or greater. Due to such distances, combined with intervening topography and/or development, as well as elevational differences, views of Project elements would be greatly diminished and/or obscured from any such roadways identified as having scenic value. Furthermore, the tallest element of the Project would be the BESS containers, which would be up to approximately 21.6 feet in height (including HVAC), as compared to the 82-foot emission stack/cooling towers associated with the SEGS VIII and IX solar facilities. Additionally, local roadways (i.e., Harper Lake Road, Lockhart Ranch Road, and Hoffman Road) in proximity to the Project Site support low traffic volumes due to their rural nature, and therefore, do not offer a substantial viewer population that would experience a change in the visual setting with Project implementation.

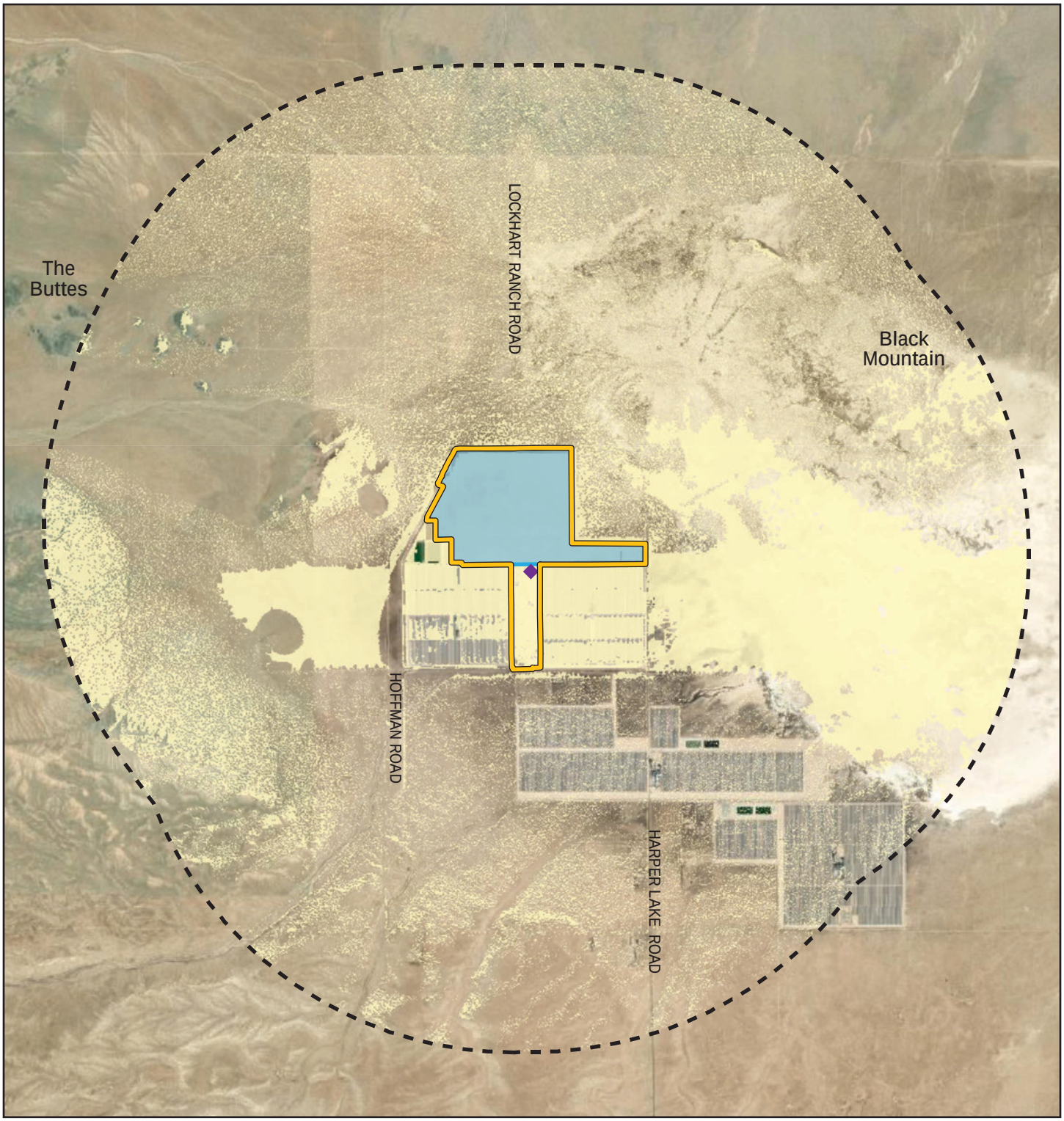
As described under the *Viewshed Analysis* heading above, although a change in public views experienced from these local roads would occur following Project implementation, such views would be brief and intermittent and/or obscured altogether by intervening development. As a result, viewer response to the change in the visual setting is anticipated to be low due to the degraded visual nature of the Project Site and immediate surroundings, and given a lack of any area resources having scenic value. As previously noted, upon intended future repower of the SEGS VIII and IX Solar Thermal Power Plants, which the County approved for repowering to PV solar and battery storage in 2019 as part of the Lockhart Solar I Facility, construction of future Lockhart Solar I Facility structures would further obscure views to Project facilities from SR-58. Therefore, viewer response to the change in the visual setting with Project implementation would be further diminished due to the adjacency of the existing utility-scale SEGS VIII and IX

facilities and the MSP located to the south of the Project Site. Additionally, local roadways (i.e., Harper Lake Road, Lockhart Ranch Road, and Hoffman Road) in proximity to the Project Site support low traffic volumes due to their rural nature, and therefore, do not offer a substantial viewer population that would experience a change in the visual setting with Project implementation. Therefore, existing public views to the Project Site from designated or eligible scenic roadways, or from local roadways, would not be adversely affected or otherwise substantially degraded as the result of Project implementation.

Based on the discussion provided herein, preparation of a visual resources impact analysis, inclusive of photo-realistic "before and after" simulations is not warranted. No further evaluation of the Project's potential effects on visual resources is required.

This page left blank intentionally.

EXHIBITS



LEGEND

- Project Site
- 3-mile Radius From Project Site
- Visible
- Solar Array Field
- Battery Energy Storage System (BESS)
  - Location shown is approximate

NOT TO SCALE

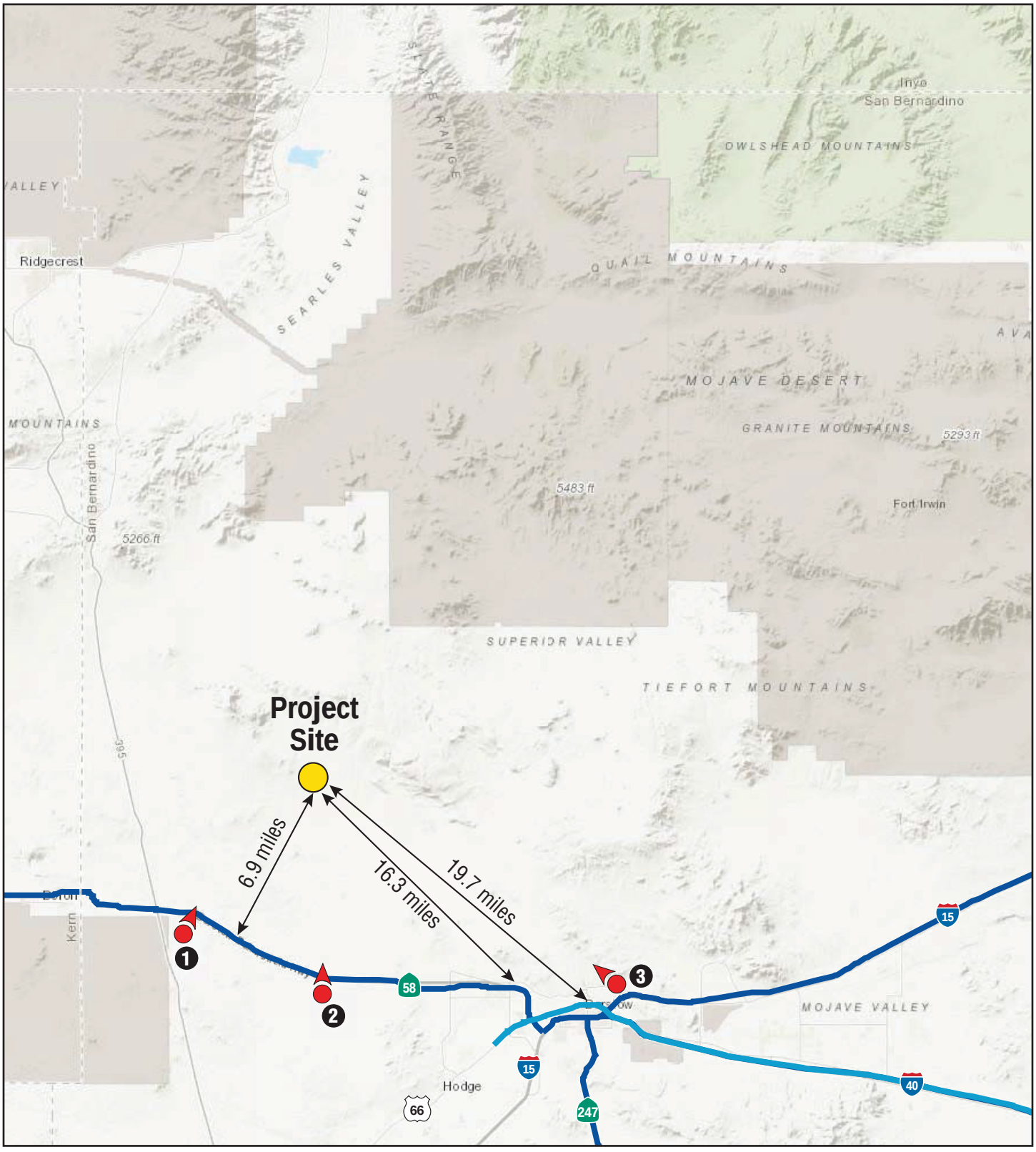
Michael Baker INTERNATIONAL

08/2021 JN 184779

LOCKHART SOLAR PV II PROJECT

Viewshed Map

Exhibit 1



Eligible State Scenic Highway
Official Federal Byway

Photograph Location (Approximate); refer to Exhibit 3F

NOT TO SCALE

Michael Baker INTERNATIONAL

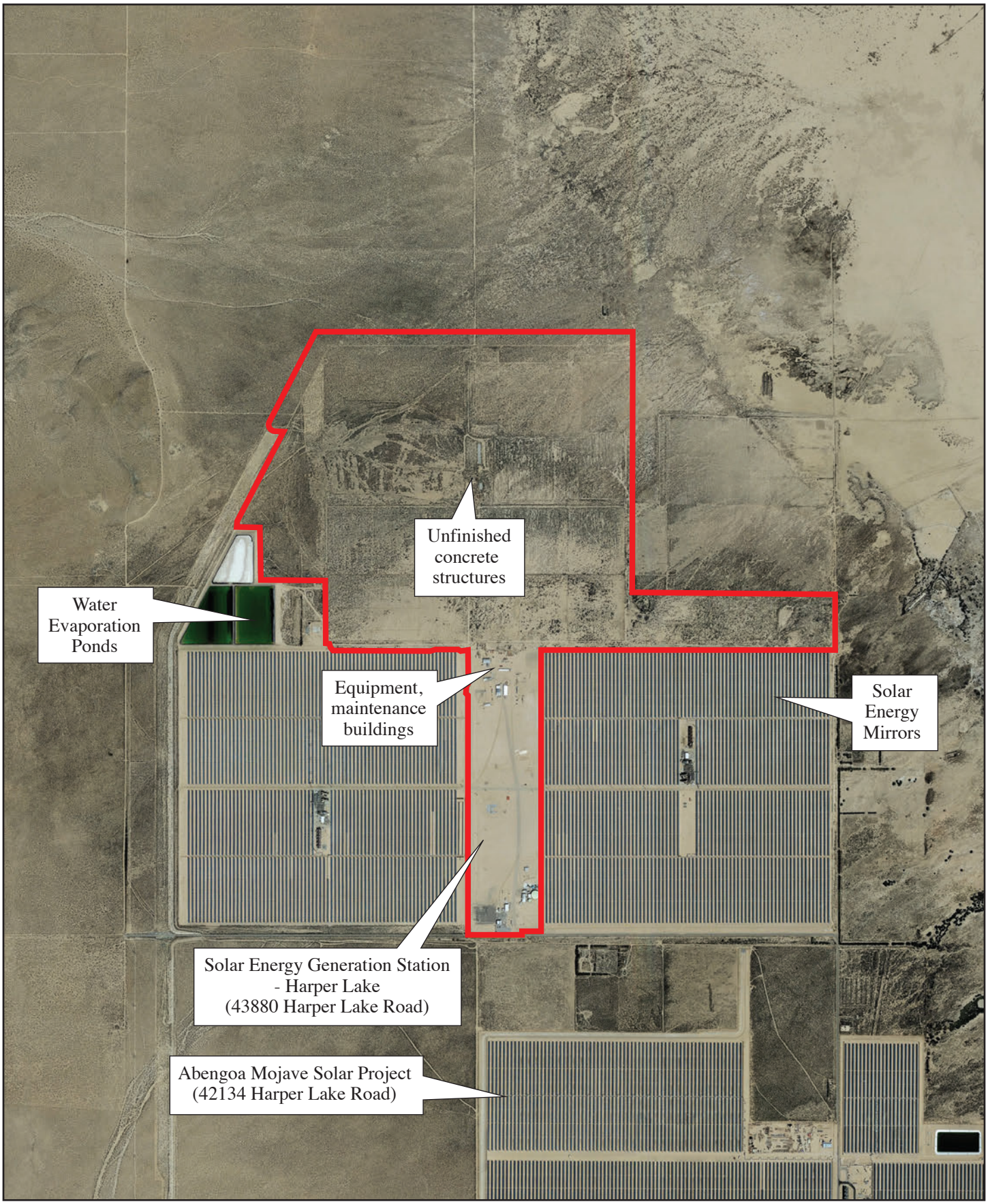
Note: Distances noted are approximate.

08/2021 JN 184779

LOCKHART SOLAR PV II PROJECT

Scenic Corridors

Exhibit 2



NOT TO SCALE

Michael Baker INTERNATIONAL

SUBJECT PROPERTY

08/2021 JN 184779

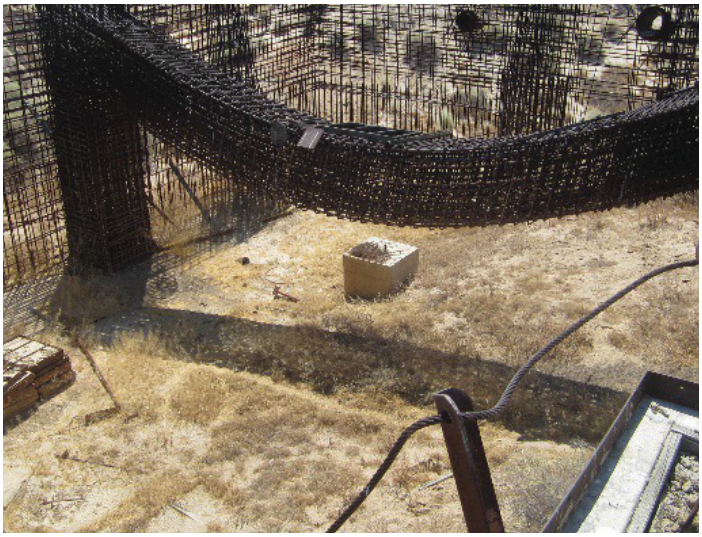
LOCKHART SOLAR PV II PROJECT

Surrounding Land Uses

Exhibit 3A

View of existing concrete foundations intended to support solar panel arrays in the southwest portion of Project Site.

View of previously constructed SEGS X structures in the central portion of the Project Site.



View of existing on-site SEGS X structures.

View of existing on-site SEGS X structures.

View of existing on-site SEGS X structure foundations.

View of existing on-site SEGS X structures.

NOT TO SCALE

Michael Baker INTERNATIONAL

08/2021 JN 184779

LOCKHART SOLAR PV II PROJECT

On-site Photographs

Exhibit 3B

View looking east along the southern side of the Project Site.

View of abandoned structure adjacent to the southwest corner of the Project Site.

View of the SEGS IX solar fields adjacent to the south of the Project Site.

View of dry evaporation pond adjacent to the southwest of the Project Site.

View of existing SEGS VIII and IX maintenance facilities within the Shared Facilities Area.

View of the SEGS IX solar fields adjacent to the south of the Project Site.

NOT TO SCALE

Michael Baker INTERNATIONAL

08/2021 JN 184779

LOCKHART SOLAR PV II PROJECT

Area Photographs

Exhibit 3C

View of the evaporation pond at the western end of the Project Site, looking northeast.

View of the bare ground at the southwestern end of the Project Site, looking east.

Facing southeast from within the CUP #3 area. This photo was taken in 2018 for the Lockhart Solar I Project.

Facing north from within the Shared Facilities Area.

Photograph 1: View looking northeast from SR 58 towards project site.

Photograph 2: View looking slightly northwest from SR 58/Harper Lake Road towards project site.

Photograph 3: View looking northwest from Interstate 15 just southwest of Soapmine Road towards project site.

NOT TO SCALE

Michael Baker INTERNATIONAL

07/2021 JN 184779

LOCKHART SOLAR PV II PROJECT

Off-site Photographs

Exhibit 3F