

5.15 Visual Resources

This section addresses the potential impacts to visual resources of the BSEP. Visual resources are the elements of the landscape that contribute to the aesthetic character and quality of the environment. These elements are either natural or man-made. Impacts to visual resources are evaluated in terms of the extent to which changes would contrast with a particular location's existing visual character and quality. This AFC section describes the existing visual environment and uses computer simulations to support the evaluation of the potential for the Project to result in significant impacts on visual resources.

5.15.1 LORS Compliance

The Project will comply with the applicable LORS pertaining to visual resources. Table 5.15-1 summarizes the applicable Federal, State, and local LORS. Additional discussion of these LORS is provided following the table.

Table 5.15-1 Summary of Applicable Visual Resources LORS

Authority	Requirement	Where Addressed in AFC
Federal:		
None		
State:		
California Environmental Quality Act (CEQA); California Public Resources Code, Section 2100 et seq.	CEQA Guidelines require (and provide criteria for) assessment of visual resources impacts	Section 5.15.3.
California Scenic Highway Program (Streets and Highways Code Sec. 260 et seq.)	Enacted in 1963 with the goal of preserving and protecting the State's scenic highway corridors from change that would diminish their aesthetic value.	Sections 5.15.2.and 5.15.3
Local:		
County of Kern, General Plan and Planning Ordinances / Codes	Chapter 19.74 Scenic corridor Combining District requirements. General Plan requirements for regulation of land use and development along Scenic Highways	Section 5.15.3

5.15.1.1 Federal LORS

There are no Federal aesthetic/scenic/visual resources LORS that apply directly to the BSEP site.

5.15.1.2 State LORS

State LORS that apply to the BSEP are discussed below.

California Environmental Quality Act; California Public Resources Code, Section 2100 et seq.

CEQA includes the aesthetic environment as one of the resource areas to be considered in environmental assessment documents. Appendix G of the CEQA guidelines includes several criteria for determining whether a project may have a significant effect on the environment because of aesthetic impacts. As the CEC licensing process is a CEQA-equivalent process, the CEC is the administering agency.

California Scenic Highway Program.

The California Scenic Highways Master Plan designates three State highways in Kern County as "Eligible State Scenic Highway", and State Route 14 (SR-14) is included in this designation. The California Legislature initiated the California Scenic Highway Program (Streets and Highways Code Sec. 260 *et seq.*) in 1963, with the goal of preserving and protecting the State's scenic highway corridors from change that would diminish their aesthetic value. The State Scenic Highway System consists of eligible and officially designated routes. A highway may be identified as *eligible* for listing as a State scenic highway if it offers travelers scenic views of the natural landscape, largely undisrupted by development. Eligible routes advance to *officially designated* status when the local jurisdiction adopts ordinances to establish a scenic corridor protection program and receives approval from the California Department of Transportation (Caltrans). Caltrans stresses the need for citizen participation in developing the guidelines that implement these requirements (Caltrans, 2004a, 2004b). Scenic corridor protection programs are required to provide for:

- Regulation of land use and development within the scenic corridor;
- Detailed land and site planning;
- Careful attention to and control of earthmoving and landscaping activity;
- Careful attention to design and appearance of structures and equipment; and
- Control of outdoor advertising, including a ban on billboards.

5.15.1.3 Local LORS

Local LORS applicable to the BSEP include:

Kern County, Scenic Corridor Combining District.

The Scenic Corridor (SC) Combining District designation is given to areas that contain unique scenic visual resources as viewed from a major highway or freeway. The designation safeguards the scenic qualities of the natural environment by requiring the approval and review of the siting of offsite advertising signs.

Kern County, General Plan, Chapter 2 - Circulation Element, 2.3.9 Scenic Route Corridors.

Kern County has the discretion to designate local scenic routes if circumstances warrant such designation. A Scenic Route is any freeway, highway, road, or other public right-of-way, which traverses an area of exceptional scenic quality. A scenic route must be officially set as a Scenic Route by the Kern County Board of Supervisors or the State of California.

As mentioned previously, the California Scenic Highways Master Plan designates three State highways in

Kern County as "Eligible State Scenic Highway." One of the three, SR-14, is almost adjacent to the BSEP plant site. Standards for corridor protection should parallel those established by State Scenic Highway Law (1963) and outlined in State guidelines.

5.15.1.4 Agencies and Agency Contacts

The local agency involved in visual resources issues is the Kern County Planning Department. Contact information is provided in Table 5.15-2.

Table 5.15-2 Agencies and Agency Contacts

Agency Contact	Phone/E-mail	Permit/Issue
Lorelei Oviatt, Special Projects Division Chief Kern Planning Department Public Services Building 2700 "M" Street, Suite 100 Bakersfield, CA 93301	(661) 862-8600 Loreleio@co.kern.ca.us	Conformance to Scenic Corridor Combining District General Plan requirements for regulation of land use and development along Scenic Highways

5.15.1.5 Required Permits and Permit Schedule

No permits are required that are specific to visual resources.

5.15.2 Affected Environment

The following subsections discuss the visual environment in the vicinity of the Project site.

5.15.2.1 Regional Setting

The BSEP is situated in unincorporated Kern County along California SR-14, also known as the Midland Trail, in the Fremont Valley of the western Mojave Desert. The Mojave Desert is a subsection of the Basin and Range Physiographic Province, which is characterized by long, north-south-trending mountain ranges separated by broad valleys. With respect to regional geographic features, the BSEP plant site is located approximately three miles south of the entrance to Jawbone Canyon; five miles south of the entrance to Red Rock Canyon State Park; one mile east of foothills of the Piute Mountain Range lands managed by the BLM; and three miles east of Chuckwalla Mountain (BLM land). The site is approximately seven miles south of the El Paso Mountain Range; less than a mile west of the Honda Proving Center automotive test track; four miles north of the northern boundary of California City; and 17 miles northeast of Mojave.

SR-14 begins north of the Los Angeles Basin and continues to the Inyo County line. Designated a Scenic Highway by Kern County, it traverses high desert land, hilly areas, and runs along the southern Sierra Nevada Mountains. Plants indigenous to the area along the route have good scenic qualities when wildflowers are in bloom. Points of interest include 20-Mule Team Terminus (State Registered Landmark 652) in Mojave, Desert Springs (State Registered Landmark 14), and Robbers Roost. Other interesting points are Red Rock Canyon State Park, Salt beds (near Koehn Lake), and Freeman Junction (State Registered Landmark 766).

5.15.2.2 Plant Site

The BSEP plant site was formerly in agricultural use but at present is largely undeveloped. See Section 5.7, Land Use, for a description of existing land uses on and in the vicinity of the Project. The plant site does not contain significant scenic resources and its overall level of scenic quality is considered moderate to low. The site is situated at an elevation range of approximately 2,200 to 2,400 feet. As discussed in Section 5.3, Biological Resources, the plant site is comprised mainly of Fallow Agriculture-Ruderal and Fallow Agriculture-Disturbed Atriplex Scrub. The Project's transmission line route options both traverse Mojave Desert Creosote Bush Scrub community shrubs and grasses, while the natural gas supply pipeline route follows disturbed road shoulders or a disturbed electrical utility access road essentially for its entire length.

The BSEP plant site has distant views to and from the Piute Mountain Range and El Paso Mountains (beginning approximately one mile west and seven miles north, respectively). Overall, visibility of the plant site and its surrounding area is shown in Figure 5.15-1a (for the Project with transmission line Option 1) and Figure 5.15-1b (with transmission line Option 2). The greatest potential for public views of the BSEP is from SR-14, which almost borders the plant site and over which Project transmission lines would cross on the route (both options) to the Barren Ridge Switching Station. Barren Ridge is where the Project will interconnect with the regional transmission system. Local visibility of the plant site is shown in Figure 5.15-2a (transmission line Option 1) and Figure 5.15-2b (transmission line Option 2). Other viewing opportunities are from scattered rural residences and roads in the valley and recreational trails at higher elevations to the north and west of the site.

The area surrounding the plant site is very lightly populated. The nearest residence with views to the plant site is located approximately 0.3 mile to the west across SR-14. There also are several residences on the north and east sides of the site who would have views at a distance of one mile or more from the Project's power block (where the facility's largest structures and equipment would be located), and approximately one mile from the northern and eastern edges of the solar array field.

5.15.2.3 Linear Facilities Routes

Figures 5.15-2a and 5.15-2b show the location and visibility of the transmission line route options and the natural gas supply pipeline (although the pipeline will be buried and thus not visible except during a brief construction period). As with the plant site, the greatest potential for public views of the transmission line under either option is from SR-14. Other viewing opportunities are from residences and roads in the valley and from hiking trails and roads at higher elevations to the north and west. The linear features route alternatives do not contain significant scenic resources and overall levels of scenic quality are considered moderate to low.

5.15.2.4 Visual Resources Evaluation Factors and Methodology

Evaluations of visual resources in connection with the BSEP are based on field observations, area maps, 2-dimensional (2D) and 3D engineering drawings, photographs of the Project area, and computer-aided photographic simulations. These simulations present views from eight locations that were selected as Key Observation Points (KOPs) for purposes of the visual resources evaluation of the Project. KOPs are shown in Figure 5.15-3.

Scenic quality judgments are made based on professional qualifications and experience applying criteria that include the following elements:

- Landscape features, including topography, water, and vegetation;
- Cultural alterations and built structures, including roads, residences and outbuildings; and
- Visual composition, including an assessment of the vividness, intactness, and unity of patterns in the landscape¹

Landscape Scenic Quality Scale. Overall landscape scenic quality is evaluated in the range of High, Moderate, or Low, based on Buhyoff et al. (1994), U.S. Department of Transportation (DOT) Federal Highway Administration (1988); and U.S. Forest Service (1995). The elements of the rating scale are defined below:

- High Visual Quality: These landscapes contain natural and/or cultural elements of high quality scenic value. Levels of vividness, unity, and intactness are above average.
- Moderate Visual Quality: These landscapes contain natural and/or cultural elements of moderate scenic value. Levels of vividness, unity, and intactness are average.
- Low Visual Quality: These landscapes contain natural and/or cultural elements of low scenic value. Levels of vividness, unity, and intactness are below average.

Field investigations were conducted to document the visual characteristics and issues of the Project area, identify KOPs, and photograph existing visual conditions. Photography was conducted using a Nikon D200 digital sensor with standard 50-mm camera lens. Figures 5.15-4 through 5.15-11 represent the existing visual condition and visual simulations from each of the eight KOPs. In each case, the first figure in the series (e.g., Figure 5.14-4a) represents the existing visual condition. The second figure (e.g., Figure 5.15-4b) simulates the visual environment including the Project facilities with transmission line Option 1. Where the visual simulation would be different for the Project with transmission line Option 2 from that KOP, a second simulation is provided (e.g., 5.15-4c); if there would be no difference between the two transmission options (i.e., KOP-3 and KOP-5) only one simulation is provided. These various simulations portray the appearance of the Project facilities in the landscape of the site and vicinity. In addition, the without-Project photographs represent the character of the landscape in the area.

The computer-aided photographic simulations were developed as described below. Computer modeling and rendering techniques were used to produce the simulated images of the views of the BSEP site as they would appear from each KOP after the completion of Project construction. Existing topographic and engineering (ArcGIS and Microstation CAD) data were utilized to construct 3-D (eye level height 5.5 feet) digital and photographic images of the generation and linear facilities. These images were combined with the digital photography from each KOP to produce a complete computer-aided image of the power generating facility and portions of the transmission system (see also AFC Section 2.0 for photographs of existing pre-Project conditions at the plant site and at representative locations along the transmission line options and simulations with Project facilities added at these same locations). Digital visual simulation images of computer

¹ Vividness is the degree of memorability and/or distinctiveness of landscape elements in the visual pattern. Intactness is the degree of integrity of visual order and/or absence of visual encroachment from discordant elements. Unity is the degree of coherent, harmonious visual patterns among the dominant elements of the landscape. (USDOT FHWA, 1988)

renderings were combined with the digital KOP and “pre-Project” photographs. The final “hardcopy” simulation images that appear in this AFC were produced from the digital image files using a color printer.

5.15.2.5 Key Observation Points

As noted above, the approach to evaluating the visual impacts of BSEP is based on KOPs. KOPs are view receptors that are sensitive and/or considered representative. Views from these locations are the framework for analyzing existing visual conditions. In addition, KOPs serve as locations for photographic simulations of a proposed project.

In consultation with CEC Staff and representatives of Red Rock Canyon State Park, eight KOPs were selected to evaluate the Project’s existing conditions and potential visual impacts. They are as follows:

- KOP-1 A residence just west of Neuralia Road approximately one mile northeast of the plant site,
- KOP-2 Jawbone Canyon Visitor Center, three miles to the north,
- KOP-3 Northbound on SR-14 approximately one-quarter mile west of the plant site,
- KOP-4 Southbound on SR-14 approximately one-quarter mile west of the plant site,
- KOP-5 The residence nearest to the BSEP plant site located on the west side of SR-14 approximately one-third mile west of the site,
- KOP-6 A ridgeline trail, located on BLM land, nearly two miles west of the Project site,
- KOP-7 Southbound on SR-14, within Red Rock Canyon State Park, approximately five miles north of the plant site,
- KOP-8 An El Paso Mountain Range trail in Red Rock Canyon State Park, approximately seven miles northeast of the Project.

Existing visual conditions of the view from each KOP were evaluated and documented during fieldwork conducted in November 2007 and February 2008.

KOP-1 Residence to the Northeast of the Project.

KOP-1 is located approximately one mile northeast of the BSEP plant site (see Figure 5.15-1 and Figure 5.15-4a). The foreground and middleground views from KOP-1 are typical of the visual character of the valley landscape and of residences and other cultural elements in the valley. The background view is comprised of the Piute Mountain Range. The visual quality of this view is moderate to low; there are no striking or distinctive visual patterns in the view. The visual resources do not form a strong, coherent pattern, and the visual integrity in the natural and human-built landscape is minimal. The Project facilities would be visible by residents and visitors at this receptor. Because this view would be experienced by residents and visitors, the level of visual sensitivity is high to moderate.

KOP-2 Jawbone Canyon Visitor Center.

KOP-2 is located approximately 2.8 miles north of the BSEP site (Figure 5.15-5a). The foreground and middleground views from KOP-2 are typical of the visual character of the Fremont Valley landscape and of other cultural elements in the valley. The background view is comprised of the Piute Mountain Range. The visual quality of this view is moderate to low; there are no striking or distinctive visual patterns in the view, the visual resources do not form a strong, coherent pattern, and the visual integrity in the natural and

human-built landscape is minimal. The Project facilities would be visible by recreational visitors at this receptor. Because this view would be experienced by recreationists, the level of visual sensitivity is high.

KOP-3 SR- 14 Northbound.

KOP-3 is located approximately one-quarter mile west of the BSEP plant site and south of the plant site access point (Figure 5.15-6a). Both transmission line options would cross over the highway in this area. The foreground and middleground views from KOP-3 are typical of the visual character of the valley landscape and of other cultural elements in the valley. The background view is comprised of mountain ranges. The visual quality of this view is moderate; there are no striking or distinctive visual patterns in the view beyond the mountain ranges to the west and north, the visual resources do not form a strong, coherent pattern, and the visual integrity in the natural and human-built landscape is moderate. The Project facilities would be visible by travelers at this receptor. Travelers are typically local residents, commuters, or recreationists. See Section 5.13, Traffic and Transportation, for a description of roadway characteristics and operating capacity for SR-14. Because this view would be experienced by travelers of the scenic highway, the level of visual sensitivity is high.

KOP-4 SR-14 Southbound.

KOP-4 is located approximately one-quarter mile west of the BSEP site (Figure 5.15-7a). The view from KOP-4 is very similar to that described immediately above for KOP-3.

KOP-5 Residence to the West of the Project.

KOP-5 is located approximately one-quarter mile west of the BSEP plant site (Figure 5.15-8a). The foreground and middleground views from KOP-5 are typical of the visual character of the valley landscape and of other cultural elements in the valley. The background view is comprised of the valley floor. The visual quality of this view is moderate to low; there are no striking or distinctive visual patterns in the view. The visual resources do not form a strong, coherent pattern, and the visual integrity in the natural and human-built landscape is minimal. The Project facilities would be visible by residents and visitors at this receptor. Because this view would be experienced by residents and visitors, the level of visual sensitivity is high to moderate.

KOP-6 Ridgeline Trail on BLM Land.

KOP-6 is located approximately 1.8 miles west of the BSEP site (see Figure 5.15-5 and Figure 5.15-9a). The foreground and middleground views from KOP-6 are typical of the visual character of the valley landscape and of other cultural elements in the valley. The background view is comprised of the rectangular agricultural pattern of valley floor and the oval pattern of the Honda Proving Center test track. The visual quality of this view is moderate to low; there are no striking or distinctive visual patterns in the view, the visual resources do not form a strong, coherent pattern, and the visual integrity in the natural and human-built landscape is minimal. The Project facilities would be visible in an elevated situation by recreational visitors at this receptor. Because this view would be experienced by recreationists, the level of visual sensitivity is high.

KOP-7 SR- 14 Southbound in Red Rock Canyon State Park.

KOP-7 is located approximately five miles north of the BSEP site (see Figure 5.15-1 and Figure 5.15-10a). The foreground and middleground views from KOP-7 are typical of the visual character of the Fremont

Valley landscape and of other cultural elements in the valley. The background view is comprised of the mountain ranges. The visual quality of this view is moderate; there are no striking or distinctive visual patterns in the view beyond the mountain ranges to the west and south. The visual resources do not form a strong, coherent pattern, and the visual integrity in the natural and human-built landscape is moderate. The Project facilities would be visible by travelers at this receptor. Because this view would be experienced by travelers of the scenic highway within Red Rock Canyon State Park, the level of visual sensitivity is high.

KOP-8 El Paso Mountain Ridgeline Trail in Red Rock Canyon State Park.

KOP-8 is located approximately seven miles north of the BSEP site (see Figure 5.15-1 and Figure 5.15-11a). The foreground and middleground views from KOP-8 are typical of the visual character of the valley landscape and of other cultural elements in the valley. The background view is comprised of the valley and mountain ranges. The visual quality of this view is moderate; there are no striking or distinctive visual patterns in the view. The visual resources do not form a strong, coherent pattern, and the visual integrity in the natural and human-built landscape is minimal. The Project facilities would be visible in an elevated situation by recreational visitors at this receptor. Because this view would be experienced by recreationists, the level of visual sensitivity is high.

5.15.3 Environmental Impacts

The following subsections present an evaluation of the impacts on visual resources of the Project.

5.15.3.1 Impact Evaluation Criteria

The assessment of the Project's impacts is based on an evaluation of the changes to the existing visual environment that would result from Project construction and operation. For assessing impacts during Project operation, the computer-aided photographic simulations were analyzed for their contrast with the existing visual environment. Because of the temporary nature of Project construction activities, simulations were not used in the impact evaluation of that phase.

In determining the extent and implications of the visual changes, a number of factors were considered:

- The specific changes in the affected environment's composition, character, and any outstanding valued qualities;
- The context of the affected visual environment;
- The extent to which the affected environment contains places or features that have been designated in plans and policies for protection or special consideration; and
- The numbers of viewers, their activities, and the extent to which these activities are related to the visual qualities affected by proposed changes.

Significance criteria for impacts to visual resources were developed from Appendix G of the State CEQA guidelines and include the following:

- Would the project have a substantial adverse effect on a scenic vista?
- Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

- Would the project substantially degrade the existing visual character or quality of the site and its surroundings?
- Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

5.15.3.2 Project Appearance

The BSEP facilities are described in detail in Section 2.0, Project Description, which includes simulated views of the Project's power generating facilities and linear facilities. Chain link fencing will be installed around the plant site perimeter for security. An outer low-maintenance barbed wire or strand fence will be installed around a portion of the site's southern and eastern perimeter. Project equipment other than the solar arrays will have non-reflective surfaces and neutral colors to minimize their visual impacts. Table 5.15-3 presents the dimensions of major Project components that may be visible from offsite locations.

Table 5.15-3 Equipment Dimensions

Equipment	Dimensions
Steam Turbine Generator	55' (H) x 114' (L) x 45' (W)
Cooling Tower	45' (H) x 595' (L) x 55' (W)
Administration Building (power block)	50" (H) x 120' (L) x 100' (W)
Main Administration Building	35' (H) x 270' (L) x 45' (W)
SCA Fabrication Building	35' (H) x 550' (L) x 127' (W)
Warehouse	50' (H) x 70' (L) x 75' (W)
Process Water Tank	36' (H) x 120' (Dia)
Process/Fire Water Storage Tank	34" (H) x 136' (Dia)
HTF Expansion Tank	25' (H) x 70' (L) x 14' (Dia)
Deaerator (elevated)	50' (H) x 24' (L) x 8' (Dia)
Transmission Facilities	Pole Height 110' (max); 79' (avg.)

BSEP operations will require onsite nighttime lighting for safety and security. To reduce offsite lighting impacts, lighting at the facility will be restricted to areas required for safety, security, and operation. Exterior lights will be hooded, and lights will be directed onsite so that light or glare will be minimized. Low-pressure sodium lamps and fixtures of a non-glare type will be specified. Switched lighting will be provided for areas where continuous lighting is not required for normal operation, safety, or security; this will allow these areas to remain un-illuminated (dark) most of the time and thereby minimizing the amount of lighting potentially visible offsite.

Project construction activities typically will occur during normal Monday through Friday working hours, although nighttime activities may occur at certain times during the construction period depending on the Project schedule. When and if nighttime construction activities take place, illumination will be provided that meets State and Federal worker safety regulations. To the extent possible, the nighttime construction lighting will be erected pointing toward the center of the site where activities are occurring, and will be shielded. Task-specific lighting will be used to the extent practical while complying with worker safety regulations.

Construction of the Project's 230 kV transmission line will involve installation of concrete or steel power poles. The insulators will be made of a non-reflective and non-refractive material, and the conductors will be non-specular (i.e., their surfaces will have a dulled finish so that they do not reflect sunlight).

The Project's natural gas supply pipeline will be buried and thus will not be visible. During construction of the pipeline, the ground surface of the area along the alignment will be temporarily disrupted by the presence of construction equipment; excavated piles of dirt, concrete, and pavement; and construction personnel and vehicles. These effects will be minor and temporary. After construction, the ground surfaces will be restored and the pipelines will not create a long-term change to the visual environment.

The Project's effects on visual conditions during hours of darkness will be moderate. As indicated earlier, some nighttime lighting will be required for operational safety and security. There will be a small amount of additional visible lighting associated with the Project structures and open site areas. At times when lights are turned on, the lighting will not be highly visible offsite and will not produce offsite glare effects. The offsite visibility and potential glare of the lighting will be minimized by specification of non-glare fixtures and placement of lights to direct illumination into only those areas where it is needed. When viewed from nearby offsite locations, the overall change in ambient lighting conditions at the Project site will be less than significant.

To the extent feasible and consistent with worker safety codes, lighting that may be required to facilitate nighttime construction activities will be directed toward the center of the construction site and shielded to prevent light from straying offsite. Task-specific construction lighting will be used to the extent practical while complying with worker safety regulations. In spite of these measures, there may be times, when and if there is nighttime construction, when the Project site may temporarily appear as a brightly lit area as viewed from nearby locations.

5.15.3.3 Construction Phase Impacts

During the Project construction period, construction activities and construction materials, equipment, trucks, and parked vehicles, all potentially may be visible on the Project site and along linear facility routes. Construction activities will be conducted in a manner that minimizes (visible) dust emissions. The construction activities at the Project site and the activities along the linear routes near the plant site will temporarily introduce additional vehicles, materials, and equipment into the view from nearby areas. In summary, visual changes associated with construction period activities at both the plant site and along linear routes will be moderate and temporary for the plant site and minor and temporary for the linear facilities (because of the short duration of linear facilities construction). Overall, Project construction impacts on visual resources are considered less than significant.

5.15.3.4 Operations Phase Impacts

The following subsection discusses the visual resources impacts during Project operations. As described below for each of the KOPs, the BSEP will change the visual appearance of the area. When viewed from eye level, during most hours of the day, the solar field would be relatively unobtrusive, with the power block only slightly visible in the distance (if at all). From elevated locations, because of the movement of the sun and the changing orientation of the mirrors to track the sun's movement, the view would change over time. In afternoon hours when viewed from elevated locations to the west, the reflective surface of the mirror would be oriented toward the viewer. At these times, on a sunny day, the solar array would create a visual

impression that more closely resembles a body of water than a power plant or other industrial facility because the array would be reflecting the blue sky. On a cloudier day, the visual impression would appear more gray. In the morning hours viewed from the same elevated locations to the west, viewers would have the non-reflective backs of the mirrors toward them, in which case the visual contrast with the surrounding environment would be considerably less.

While the Project itself would create a substantial visual contrast for a portion of the day from certain elevated KOPs, the overall impact on visual resources would be less than significant when the Project is considered in the context of its surroundings. The presence of the Honda test track to the east of the BSEP plant site represents a preexisting modification of the natural landscape and provides a contrasting geometric shape (oval) with the rows of solar collectors of the BSEP. Both of these factors (the prior modification and the contrasting shape), diminish the potential for impact of the BSEP facilities. Furthermore, the area within which the Project would be situated has been heavily disturbed by previous agricultural activities and this rectangular-shaped disturbance (e.g., see Figure 5.15-9a) also represents a preexisting modification to the surrounding natural landscape.

Note that for certain viewers, the solar field, with its lake-like appearance at its most reflective, will present a positive and visually-interesting view because the Project furthers a widely supported societal goal of reducing greenhouse gas emissions and increasing renewable energy.

Potential impacts from the eight designated KOPs and the cooling tower plume are presented below followed by a discussion of impacts in terms of specific significance criteria.

Impacts from KOPs

KOP-1 Residence to the Northeast of the Project

Simulations of the view of the BSEP site and facilities from KOP-1 with both transmission options are shown in Figures 5.15-4b and 5.15-4c; the existing view is shown in Figure 5.15-4a. In this view, the most prominent visible features of the Project would be the BSEP plant structures and transmission line. These features would be visible in the foreground and middleground and would present a moderate level of dominance in the view. The presence of the geometric pattern of the Honda Proving Center test track east of the BSEP site would help to ameliorate the effects of the geometric features of the BSEP site.

The neutral color and non-reflective surface of the Project structures will reduce their visual contrast with their surroundings and help them to be absorbed into the overall view. Due to their distance and location in the middle of the plant site, Project transmission facilities would be minimally visible from this KOP. Therefore, the effect of the BSEP on the overall character of the view is expected to be moderate. The general level of visual quality of the view from KOP-1 would not change significantly. The presence of the Project features would increase moderately the vividness of the view, would have moderate effect on the overall intactness of the view, and would have moderate effect on the visual unity of the composition of the landscape. The overall impact of the Project facilities on visual resources would be less than significant.

KOP-2 Jawbone Canyon Visitor Center

Simulations of the view of the BSEP site and facilities from KOP-2 with both transmission options are shown in Figures 5.15-5b and 5.15-5c; the existing view is shown in Figure 5.15-5a. The view from KOP-2 would include the BSEP site from a moderately elevated position; thus, the effect of the Project on the overall

character of the view is expected to be moderate to strong. Due to the addition of mirrored reflections of the sky during the morning hours, the presence of the Project features would increase moderately the vividness of the view, would have moderate effect on the overall intactness of the view, and would have a moderate to strong effect on the visual unity of the composition of the landscape. The effect on the overall character of the view is expected to be moderate to strong. The presence of the geometric pattern of the Honda Proving Center test track to the east would help to ameliorate the effects of geometric features of the BSEP site. The overall impact of the Project facilities on visual resources would be less than significant.

KOP-3 *SR-14 Northbound*

A single simulation of the view of the BSEP plant site from KOP-3 is shown in Figure 5.15-6b because the views would be the same with either transmission option; the existing view is shown in Figure 5.15-6a. The view from KOP-3 would include the BSEP site from a slightly elevated position; thus, the effect of the Project on the overall character of the view is expected to be minimal to moderate. The presence of the Project features would increase moderately the vividness of the view, would have moderate effect on the overall intactness of the view, and would have moderate effect on the visual unity of the composition of the landscape. The presence of the geometric pattern of the Honda Proving Center test track to the east would help to ameliorate the effects of geometric features of the BSEP site. The overall impact of the Project facilities on visual resources would be less than significant.

KOP-4 *SR-14 Southbound*

Simulations of the view of the BSEP site and facilities from KOP-4 with both transmission options are shown in Figures 5.15-7b and 5.15-7c; the existing view is shown in Figure 5.15-7a. In the view from KOP-4, the visible features of the project would be the transmission line structures, which would be visible in the foreground and middleground and would represent a moderate level of dominance in the view.

Existing topography (as well as possible grading for the solar arrays in the eastern portions of the site that may raise the topography between this KOP and the Project site), would partially screen the site from this receptor. The neutral color and non-reflective surface of the power block structures and transmission line structures will reduce their visual contrast with their surroundings, and help them to be absorbed into the overall view. Therefore, the Project's impact on the overall character of the view is expected to be moderately low. The general level of visual quality of the view from KOP-4 will not change significantly. The presence of the Project features would not affect the vividness of the view, would have limited effect on the overall intactness of the view, and would have low to moderate effect on the visual unity of the composition of the landscape. The overall impact of the Project facilities on visual resources would be less than significant.

KOP-5 *Residence to the West of the Project.*

A single simulation of the view of the BSEP site from KOP-5 is shown in Figure 5.15-8b because the views would be the same with either transmission option; the existing view is shown in Figure 5.15-8a. The view from KOP-5 would include the BSEP site at eye level. In the view from KOP-5, the visible features of the Project would be the solar array and transmission line, which would be visible in the foreground and middleground only to the hikers on the trail and would present a high level of dominance in the view. The effect of the Project on the overall character of the view is expected to be moderate. The overall impact of the Project facilities on visual resources would be less than significant.

KOP-6 *Ridgeline Trail on BLM Land*

Simulations of the view of the BSEP site and facilities from KOP-6 with both transmission options are shown in Figures 5.15-9b and 5.15-9c; the existing view is shown in Figure 5.15-9a. In this elevated view, which would be experienced only by hikers on the ridgeline trail, the most prominent visible features of the Project would be the Project power block structures and solar arrays. These features would be visible in the foreground and middleground and would present a moderate to strong level of dominance in the view. Due to the addition of mirrored reflections of the sky during the afternoon hours, the presence of the Project features would increase moderately the vividness of the view, would have moderate effect on the overall intactness of the view, and would have moderate effect on the visual unity of the composition of the landscape. The presence of the geometric pattern of the Honda Proving Center test track to the east would help to ameliorate the effects of geometric features of the BSEP site.

During the morning hours, the neutral color and non-reflective surface of the Project structures will reduce their visual contrast with their surroundings and help them to be absorbed into the overall view. Due to their location on the near side of the plant site, Project transmission facilities would be more visible from this KOP. The effect of the BSEP on the overall character of the view is expected to be moderate to strong. The presence of the Project features would increase moderately the vividness of the view, would have moderate to strong effect on the overall intactness of the view, and would have moderate to strong effect on the visual unity of the composition of the landscape. The overall impact of the Project facilities on visual resources would be less than significant.

KOP-7 *SR-14 Southbound in Red Rock Canyon State Park*

Simulations of the view of the BSEP site and facilities from KOP-7 with both transmission options are shown in Figures 5.15-10b and 5.15-10c; the existing view is shown in Figure 5.15-10a. The view from KOP-7 would be similar although more distant to the view from KOP-2; thus, the effect of the Project on the view would be low to moderate. Due to the addition of mirrored reflections of the sky during the morning hours, the presence of the Project features would increase moderately the vividness of the view, would have moderate effect on the overall intactness of the view, and would have moderate effect on the visual unity of the composition of the landscape. The presence of the geometric pattern of the Honda Proving Center test track to the east of the BSEP plant site would help to ameliorate the effects of geometric features of the BSEP site. The overall impact of the Project facilities on visual resources would be less than significant.

KOP-8 *El Paso Mountain Ridgeline Trail in Red Rock Canyon State Park*

Simulations of the view of the BSEP site and facilities from KOP-8 with both transmission options are shown in Figures 5.15-11b and 5.15-11c; the existing view is shown in Figure 5.15-11a. The view from KOP-8 would be similar to KOP-6 although more distant, and similarly would be limited to the hikers on the trail; the effect of the Project on the overall character of the view is expected to be moderate to strong, as described for KOP-6. Due to the addition of mirrored reflections of the sky during the morning hours, the presence of the Project features would increase moderately the vividness of the view, would have moderate effect on the overall intactness of the view, and would have moderate effect on the visual unity of the composition of the landscape. The presence of the geometric pattern of the Honda Proving Center test track to the east would help to ameliorate the effects of geometric features of the BSEP site. The overall impact of the Project facilities on visual resources would be less than significant.

Vapor Plume Analysis

Visible plumes that occur during daylight hours have the potential for producing an impact on visual resources. The Project's cooling tower is a potential source of visible water vapor plumes and, therefore, an analysis was performed to estimate the potential size and frequency of visible plume formation during daylight hours. The Seasonal and Annual Cooling Tower Impacts (SACTI, Version 9/30/90) model was applied for this analysis. KOPs-1 through -8 would experience relatively low frequency of Project daytime plumes and the expected periodic BSEP water vapor plumes would result in a less than significant impact to visual resources.

The following subsection presents a quantitative analysis of the vapor plumes emitted from Project facilities. The modeling results for the vapor plume are shown in Table 5.15-4.

Table 5.15-4 Cooling Tower Daytime Vapor Plume Analysis Results

Plume Length Case	Length (m/ft)	Daytime Frequency (hrs/yr) ¹
Maximum	418 / 1,371	7
90 Percentile	292 / 958	128
50 Percentile	28 / 92	173
¹ Yearly average based on 3 years of data.		

The maximum predicted daytime cooling tower plume length is 418 meters (approximately 1,371 feet). A plume of this length is expected approximately seven hours per year. A more representative worst-case is the 90th percentile plume length of 292 meters (approximately 958 feet) which is estimated to occur approximately 128 hours per year. A more representative average case is the 50th percentile plume length of 28 meters (approximately 92 feet) which is estimated to occur approximately 173 hours per year. Given the 2,012-acre plant site size and the location of the cooling tower in the power block in the center of the site, the daytime cooling tower plume length would not extend beyond the site boundaries in any case.

The two meteorological factors that are most significant in determining the potential for vapor plume formation are the ambient temperature and the relative humidity. Given the dry, desert location, relative humidity tends to be low and ambient temperature warm during the daytime hours. Consequently, any visible vapor plumes will tend to form during periods with lower temperatures and high humidity such as during periods of winter precipitation. Thus, it is expected that the visual impacts of vapor plumes from the Project will be limited and concentrated during periods of inclement weather when the ambient conditions already will likely be contributing to reduced visibility.

Evaluation Against Significance Criteria

BSEP impacts were evaluated in terms of four questions (CEQA Guidelines Appendix G), each of which is presented below along with a response:

1. Would the project have a substantial adverse effect on a scenic vista?

No. SR-14 is designated as a Scenic Highway by Kern County, but impacts on the character of the views from this route are expected to be moderate. As the analysis of the views from the KOPs has established,

the Project will not affect landscapes of more than moderate visual quality, and effects to the existing visual quality of landscapes in the area are not expected to be substantial.

2. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No. BSEP facilities do not fall within the boundaries or otherwise adversely affect a designated State scenic highway. As indicated above, impacts on the quality of views from SR-14 (a Kern County-designated scenic highway) are not expected to be substantial.

3. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

No. The BSEP site is not in a designated area of natural beauty or scenic recreational area. Visual resources of the Project site and vicinity are influenced by rectangular agricultural patterns and the oval shape of the Honda Proving Center test track. The presence of the BSEP facilities will not create a substantial change in the visual quality of the landscape.

The transmission line options traverse areas of existing electrical structures. Due to the existing structures in the majority of views, the Project transmission line is not expected to substantially degrade existing visual quality and would have relatively little effect on the existing character and quality of the views. Therefore, the level of visual change brought about by the transmission line is expected to be low and impacts on the character and quality of the view are considered to be less than significant. The buried gas pipeline would affect the visual environment minimally and briefly and only during its construction period.

Visible vapor plumes from the Project will occur mainly at night or during periods of precipitation. For visible plumes that occur during the day, they will tend to be relatively small in dimensions and will tend to occur in the early morning or late afternoon when temperatures are lower and humidity is higher. Consequently, visible plumes are not expected to substantially degrade the existing visual character or quality of the site and its surroundings.

4. Would the project create a new source of substantial light and glare that would adversely affect day or nighttime views in the area?

No. As discussed earlier, Project light fixtures will be restricted to areas required for safety, security, and operations. Lighting will be directed onsite; it would be shielded from public view, and non-glare fixtures and use of switches, sensors, and timers to minimize the time that lights not needed for safety and security are on would be specified. These measures should substantially reduce the offsite visibility of BSEP lighting. To the extent feasible and consistent with worker safety codes, lighting that might be installed to facilitate possible nighttime construction activities will be directed toward the center of the construction site and shielded to prevent light from straying offsite. Task-specific construction lighting will be used to the extent practical while complying with worker safety regulations. With these measures, lighting associated with BSEP construction and operations would not pose a hazard or substantially affect day or nighttime views toward the site.

It also should be noted that the Project's largest structures will be in the power block which will be located in the center of the plant site, more than a half mile from SR-14. More than half of the approximately 2,012-acre plant site will be taken up by the solar array field which will surround the power block. The

solar collectors will track the sun's movement across the sky and focus the sun's rays on the parabolic trough collector and thus will not produce significant lighting impacts during the day. When viewed from a distance and an elevated location, the solar field at its most reflective may appear like a lake at hours of the day when the mirrors are oriented toward the viewer (e.g., looking from the west with the sun behind the viewer on a sunny afternoon); it will not produce significant glare. At night, the solar array will not be illuminated.

5.15.3.5 Cumulative Impacts

The BSEP's contribution to cumulative visual effects would be less than significant. The Project will be a large relatively low profile industrial facility near another low profile industrial-type facility (the Honda test track) in a remote lightly populated area. The Project transmission line route is located within a corridor where transmission facilities already exist, where other transmission facilities are proposed (LADWP's Barren Ridge-Castaic Transmission Project) and the level of incremental change due to the Project will be minor. The Pine Tree Wind Development Project is located approximately six miles to the southwest of the BSEP site; wind turbines are visible to travelers along SR-14, but do not affect the same viewshed as the BSEP.

5.15.4 Mitigation Measures

No significant adverse visual impacts would result from construction and operation of the BSEP. Therefore, no mitigation measures are proposed.

5.15.5 References

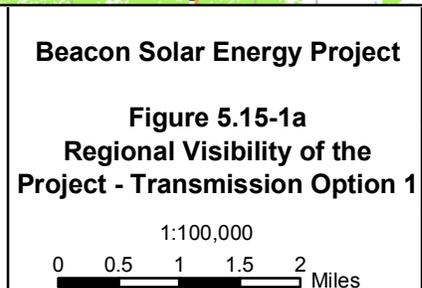
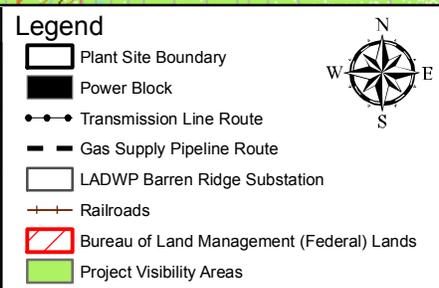
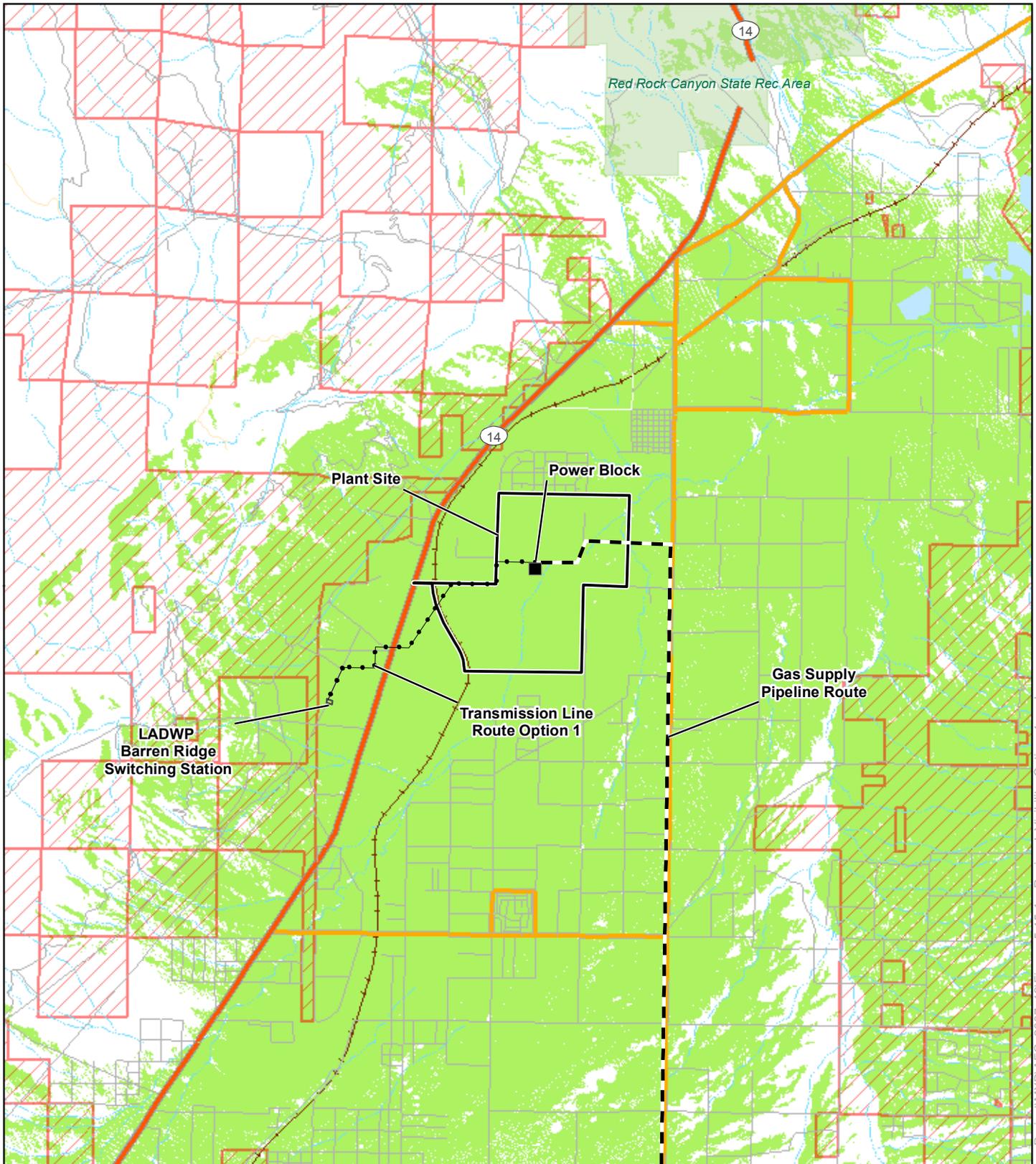
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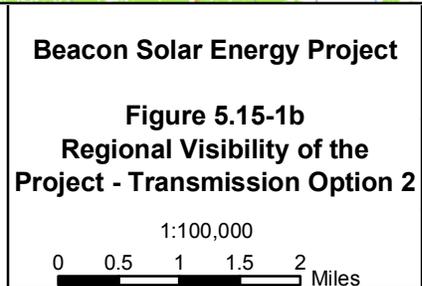
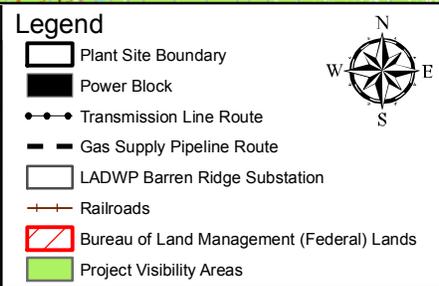
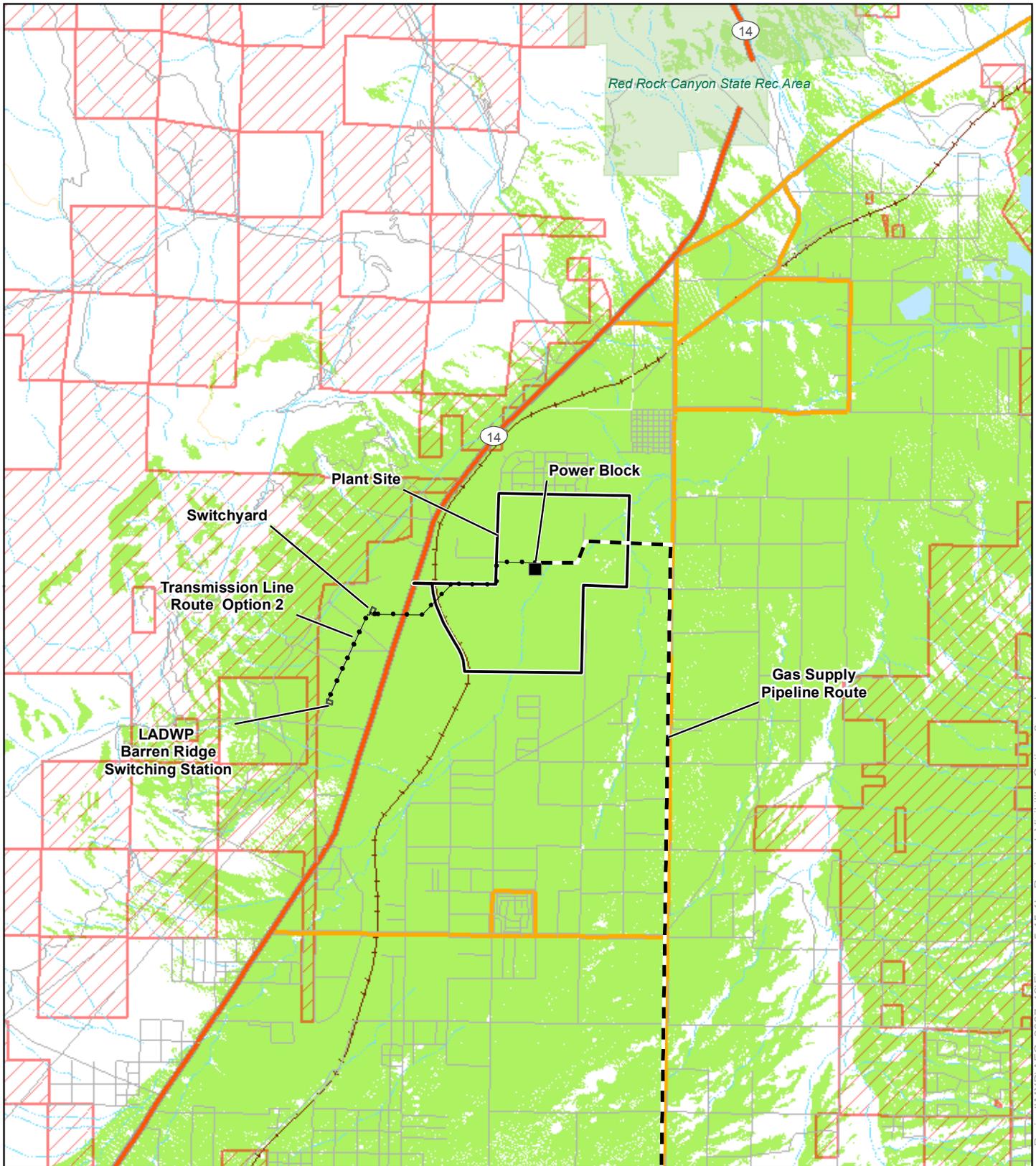


Beacon Solar

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Project: 10056-014
 Date: March 2008

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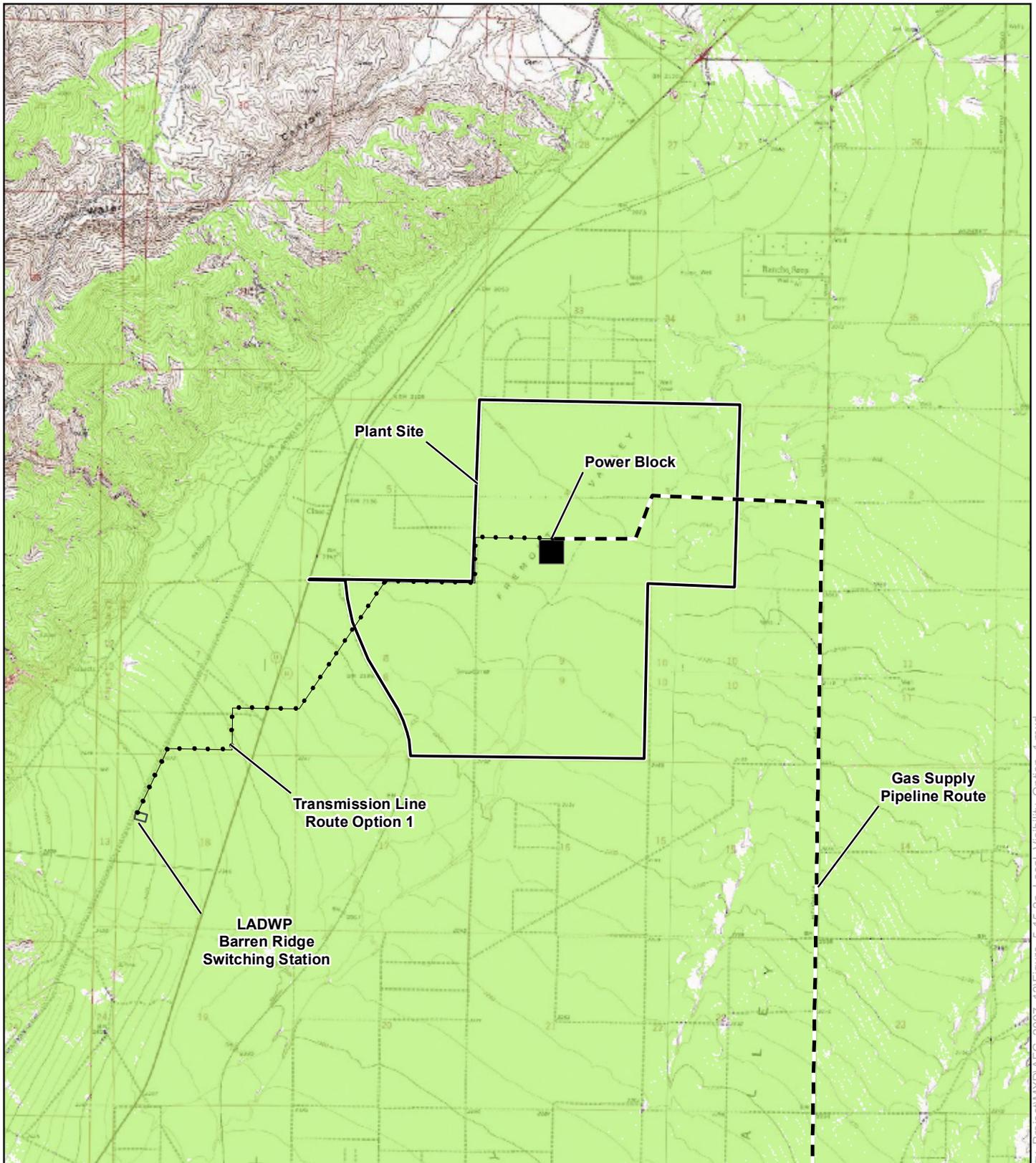


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Project: 10056-014
 Date: March 2008

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Legend

- Plant Site Boundary
- Transmission Line Route
- Power Block
- Gas Supply Pipeline Route
- LADWP Barren Ridge Substation
- Project Visibility Areas

Beacon Solar Energy Project

Figure 5.15-2a
Local Visibility of the
Project - Transmission Option 1

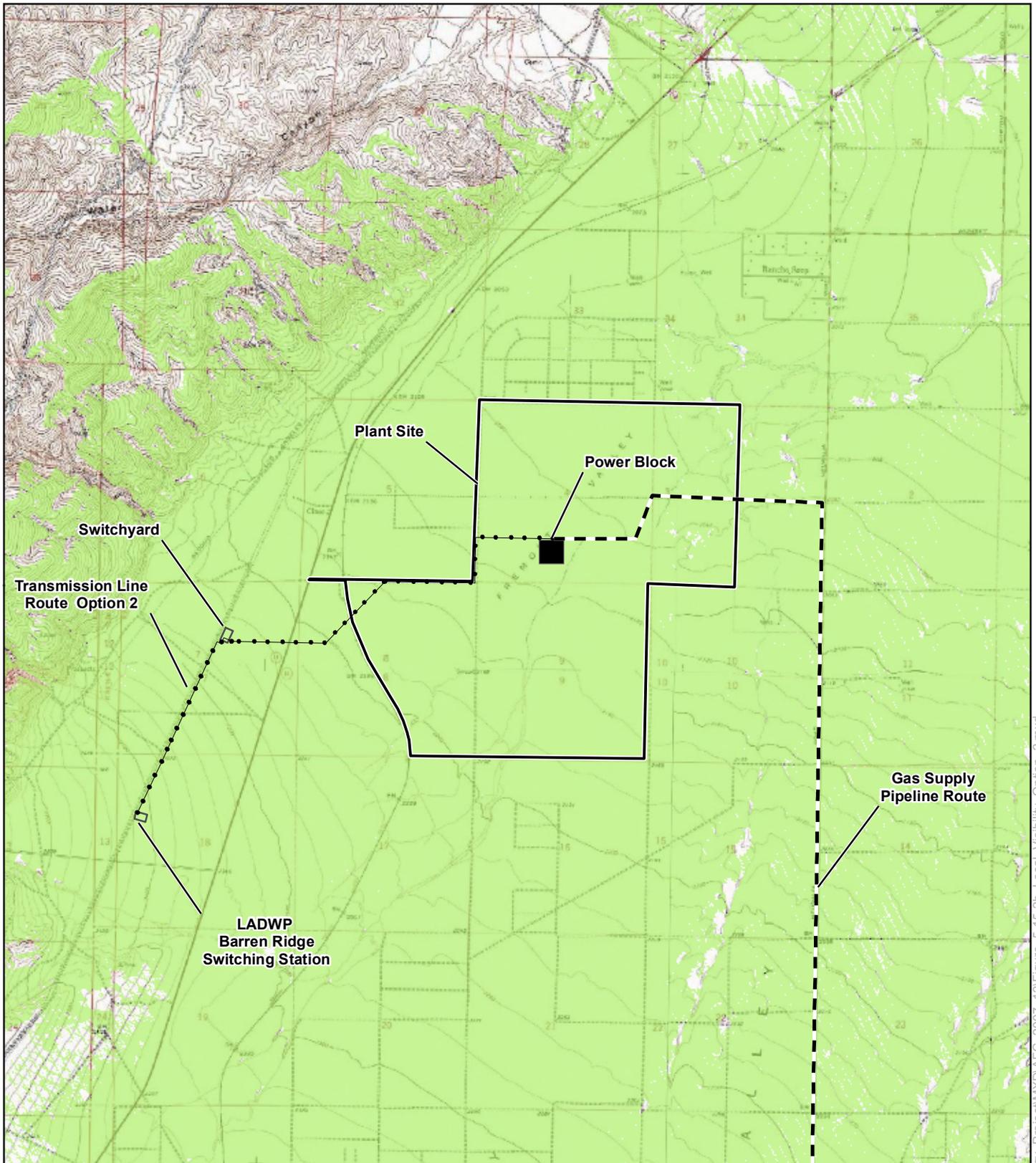
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Legend

- Plant Site Boundary
- Transmission Line Route
- Power Block
- Gas Supply Pipeline Route
- LADWP Barren Ridge Substation
- Project Visibility Areas



Beacon Solar Energy Project

Figure 5.15-2b
Local Visibility of the
Project - Transmission Option 2

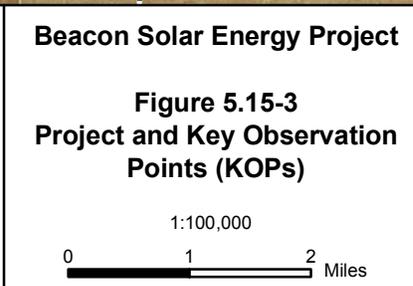
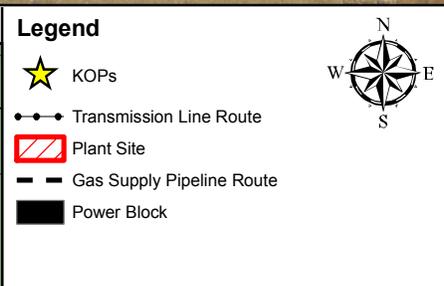
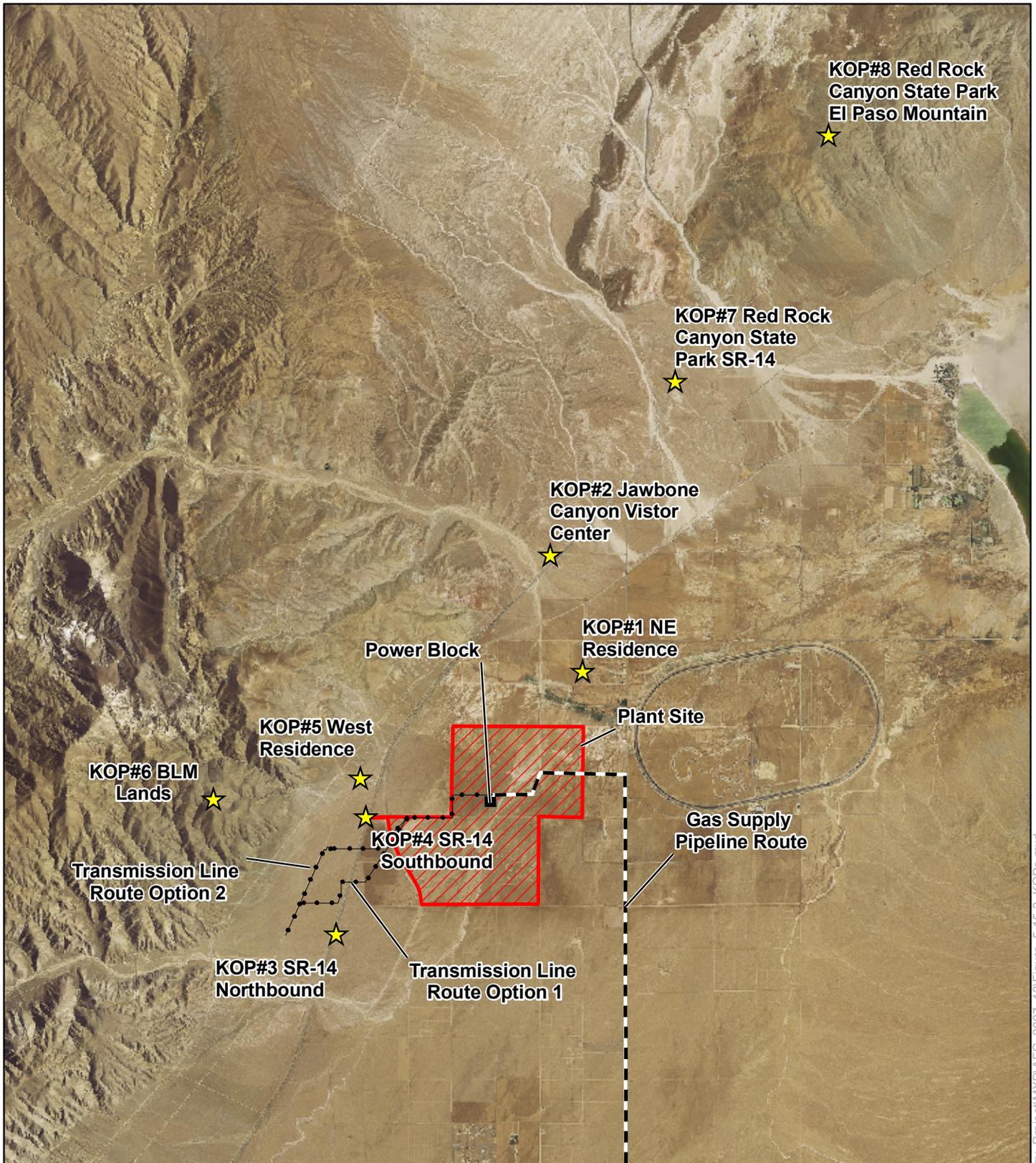
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Figure 5.15-4a View from Key Observation Point 1 - Existing Condition



Figure 5.15-4b View from Key Observation Point 1 – Simulated Condition with Transmission Option 1



Figure 5.15-4c View from Key Observation Point 1 – Simulated Condition with Transmission Option 2



Figure 5.15-5a View from Key Observation Point 2 - Existing Condition



Figure 5.15-5b View from Key Observation Point 2 – Simulated Condition with Transmission Option 1



Figure 5.15-5c View from Key Observation Point 2 – Simulated Condition with Transmission Option 2



Figure 5.15-6a View from Key Observation Point 3 - Existing Condition



Figure 5.15-6b View from Key Observation Point 3 – Simulated Condition with Both Transmission Options



Figure 5.15-7a View from Key Observation Point 4 - Existing Condition



Figure 5.15-7b View from Key Observation Point 4 – Simulated Condition with Transmission Option 1



Figure 5.15-7c View from Key Observation Point 4 – Simulated Condition with Transmission Option 2



Figure 5.15-8a View from Key Observation Point 5 - Existing Condition



Figure 5.15-8b View from Key Observation Point 5 – Simulated Condition with Both Transmission Options



Figure 5.15-9a View from Key Observation Point 6 - Existing Condition



Figure 5.15-9b View from Key Observation Point 6 – Simulated Condition with Transmission Option 1



Figure 5.15-9c View from Key Observation Point 6 – Simulated Condition with Transmission Option 2



Figure 5.15-10a View from Key Observation Point 7 - Existing Condition



Figure 5.15-10b View from Key Observation Point 7 – Simulated Condition with Transmission Option 1



Figure 5.15-10c View from Key Observation Point 7 – Simulated Condition with Transmission Option 2



Figure 5.15-11a View from Key Observation Point 8 - Existing Condition



Figure 5.15-11b View from Key Observation Point 8 – Simulated Condition with Transmission Option 1



Figure 5.15-11c View from Key Observation Point 8 – Simulated Condition with Transmission Option 2

