

BLYTHE ENERGY PROJECT BIOLOGICAL ASSESSMENT

**Submitted to:
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ATTACHMENTS

- Attachment 1: Biological Resources Chapter from PSA / Draft EA (09/01/00)
- Attachment 2: Survey of Biological Resources (Technical report)
- Attachment 3: Biological Resources Mitigation Implementation and Monitoring Plan
- Attachment 4: Biological Evaluation (California Supplement)

BIOLOGICAL ASSESSMENT BLYTHE ENERGY PROJECT

1.0 PURPOSE OF BIOLOGICAL ASSESSMENT

This Biological Assessment has been prepared to address effects of the Blythe Energy Project on Federally listed, proposed, or candidate wildlife and plants. The Western Area Power Administration (Western) is the lead Federal agency for the project and is responsible for preparing this Biological Assessment and the determinations in it.

This Biological Assessment and the U.S. Fish & Wildlife Service's (FWS) Biological Opinion will also be employed by the California Department of Fish and Game (CDFG) for issuance of a 2081.1 Consistency Determination for potential take of state-listed species. Therefore, a Biological Evaluation has been prepared to assist the California Department of Fish and Game to fulfill its requirements under the California Endangered Species Act (CESA), (see Attachment 4). The Biological Evaluation addresses State listed, proposed, or candidate species under CESA that could be affected as a result of the construction and operation of the Blythe Energy Project.

2.0 SUMMARY OF PROPOSED PROJECT

Blythe Energy, LLC is proposing to develop the Blythe Energy Project on privately owned lands located near Interstate 10 and the Blythe Airport about five miles west of the City of Blythe, in Riverside County, California. Figure 1 shows the proposed location of the project. The Blythe Energy Project will be a 520 Megawatt (MW) natural gas-fired combined-cycle power plant comprising two "F Class" advanced technology combustion turbines, two Heat Recovery Steam Generators (HRSGs), one steam turbine, and supporting equipment. The combined-cycle power plant is designed to be a highly efficient and clean burning electric generation system. The gas turbines use state-of-the-art technology to efficiently burn natural gas with reduced NO_x and CO emissions using Selective Catalytic Reduction (SCR) to meet all current State and EPA air quality standards.

The water supply would be developed from underlying groundwater obtained from up to three wells located on the plant site. Approximately 3000 acre-feet per year would be required to supply cooling and other operational needs of the plant. Brine discharge water would be managed on site in a 16-acre, lined evaporation pond. The project proposes to interconnect with the regional electric transmission grid at the existing Blythe Substation.

Insert Figure 1 here.

The Blythe Substation is owned and operated by Western and connects five existing 161-kV transmission lines serving the region. The Blythe Energy Project interconnection will be accomplished through upgrades at the Blythe Substation, a project switchyard constructed adjacent to the power plant on the 76-acre site and two, short transmission lines extending about 450-feet and 650-feet respectively from the edge of the project property.

The Project is located in close proximity to two major interstate natural gas lines, which will provide the power plant's fuel supply. Natural gas will be supplied from these pipelines to the project via one of two optional natural gas interconnections. One would connect the Blythe Energy Project with the El Paso Natural Gas Company interstate pipeline system on the Arizona side of the Colorado River approximately 11.5 miles east of the Project site (Figure 1). The other option would involve connecting with Southern California Gas Company (SoCalGas) pipelines located south of the Interstate 10 corridor and 0.80 mile south of the Project site.

Crossings of waterways, including the Colorado River, West Side Drain, four unnamed canals, Lovekin Drain, Goodman Slough, East Side Drain, and Borrow Drain will be drilled under the water ways using a horizontal directional drilling technique.

3.0 EXISTING ENVIRONMENT

3.1 LAND USES

Existing land uses for the project site, surrounding lands and along the proposed natural gas interconnection line route are described in the following sections.

3.1.1 Plant Site and Transmission Line. The plant site is located in southeastern Riverside County, approximately five miles west of Blythe, California. The proposed Project will occupy two parcels with a total land area of approximately 76-acres of privately owned land. The legal description is the northwest quarter of Section 33 in Township 6 South, Range 22 East, San Bernardino Baseline and Meridian. Table 1 presents the county assessor's parcel information for the subject parcels; additional Assessor's information for all affected parcels and surrounding lands is provided in the Blythe Energy Project's *Application For Certification* (March 2000). The proposed plant site is unimproved land, with the exception of a mobile home site at the southeastern corner. Two high voltage electric transmission lines cross the property in a northeast to southwest direction and an east to west direction.

Land use along the proposed transmission line route consists exclusively of agricultural land, currently under cultivation as a lemon orchard.

3.1.2 Adjacent Plant Site Land Uses. Land use in the vicinity of the project site is primarily agricultural. To the west of the site within the upper mesa area are inoperative irrigated agricultural fields. The surrounding areas include the Blythe Airport approximately one-mile to the west and zoned for industrial use, a small sewage treatment facility one-quarter (0.25) mile to the west, the Interstate 10 corridor approximately one-quarter (0.25) mile to the south, fallowed agricultural fields to the north and west, and a citrus orchard bordering the eastern edge of the project property.

TABLE 3-1 BLYTHE ENERGY PROJECT ASSESSOR'S PARCEL INFORMATION		
Location	Riverside County Parcel Number	Acres
Sect. 33, Township 6 S, Range 22E	APN 824-101-10	53.05
Sect. 33, Township 6 S, Range 22E	APN 824-101-11	22.88
Total		75.93

The Blythe Substation lies about 2,000 feet directly east of the project site. A small industrial area is located north of the site. Other land uses near the project site and north of Hobsonway are the U.S. Border Patrol (over one mile to the west) and the Blythe Trap Shooting Club and the Riverside County Animal Shelter, both about one-mile to the west. No residences are located within the site boundaries. The nearest residence to the Blythe Energy Project is approximately 0.75 miles southwest of the power plant location, north of Interstate 10 and south of Hobsonway.

3.1.3 Natural Gas Pipeline. The natural gas pipeline will extend east from the power plant site along Hobsonway to Arrowhead Blvd., then south to 16th Avenue, all Riverside County Roads. The pipeline will follow 16th Avenue east to Intake Boulevard at which point it will travel north to Riviera Drive and proceed east to the El Paso metering yard. A majority of the proposed pipeline will be installed in the existing road rights-of-way, with the exception of the single Colorado River crossing, which will be drilled beneath the river a minimum of 50-feet below the bottom of the channel.

3.1.4 Adjacent Natural Gas Pipeline Land Uses. The proposed pipeline corridor will be placed within the shoulder of existing roads for a majority of the route. Land uses adjacent to the gas pipeline route consist of agricultural land (9 miles), residential areas (1 mile), and commercial and industrial areas (1 mile). The majority of industrial and residential areas along the proposed pipeline route occur north and south of 16th Avenue between Neighbors Boulevard and Intake Boulevard. Sewage disposal ponds are to the north of 16th Avenue between Lovekin Boulevard and C and D Boulevards. A petroleum pipeline and a fiberoptic line already exist to the north of 16th Avenue.

3.1.5 Local Agricultural Resources. Agriculture is the predominant land use in the Palo Verde Valley. There are currently about 104,000 acres of land in agricultural production within the Palo Verde Valley, and additional acreage (up to 16,000 acres) on the adjacent mesa. The Blythe Energy Project site is located on the mesa above the Palo Verde Valley floor, where citrus orchards are dominant. Directly east and south of the Blythe Energy Project site, the Sunworld Corporation cultivates about 481-acres of lemons.

3.1.6 Local Transportation Corridors. Interstate 10, a major east-west freeway route serving points between the greater Los Angeles metropolitan region and Phoenix, Arizona, is located about one-quarter mile south of the Blythe Energy Project site. State Route 78 (SR 78), a regional highway, providing access north and southwest, is located about 1.5 miles east of the project site. U.S. Route 95 intersects with Interstate 10 about 6.5 miles east of the Blythe Energy Project site.

3.2 BIOLOGICAL RESOURCES

The City of Blythe lies within the 100-year flood plain of the Colorado River Basin, which is made up of river bottoms and terraces approximately 29 miles in length and ranging in width out to 15 miles. The lower Palo Verde Valley and surrounding terraces have been transformed into a large agricultural area, which produces more than 30, high-value cash crops.

3.2.1 Regional Vegetation. The desert region outside of the river basin is commonly called Sonoran Desert or "Colorado Desert", and includes the area between the Colorado River Basin and the Coast Ranges south of the Little San Bernardino Mountains and the Mojave Desert. Rainfall amounts average less than 3.7 inches per year and typically restricted to the winter months. Due to low elevations, temperatures are extreme. As a consequence of these climatic variables, vegetation is drought-adapted and typically simple and sparse. Few cacti are present within the plant communities found in this region.

3.2.2 Plant Site. The site lies on a nearly flat mesa (slope <1 %) at an elevation of approximately 330 feet. The soil is soft sand with an approximately 60 % fine-gravelly substrate. The vegetation community is low diversity Sonoran Creosote Bush Scrub. Aspect-dominant shrub species are creosote bush (*Larrea tridentata*) and burro bush (*Ambrosia dumosa*); galleta grass (*Pleuraphis rigida*) is present in areas with the loosest sand. Shrub cover was estimated visually at approximately 15-18 %. Site drainage by channeling is not apparent; swales and the high sand component of the soil suggest that percolation is responsible for the elimination of surface water.

3.2.3 Transmission Line. Habitat at the switchyard is characterized by that, for the remaining plant site. East of the plant site, the transmission line route lies entirely within a currently-farmed lemon orchard.

3.2.4 Natural Gas Pipeline. Habitat adjacent to the pipeline route primarily consists of currently farmed agriculture, typically alfalfa and row crops, with citrus orchards adjacent to the site. There are a few residences, businesses and small patches of ruderal habitat, especially along Hobsonway. Immediately south of the site, along the Hobsonway and alternative pipeline routes, is a small patch of disturbed and regrowing creosote bush scrub, dominated by creosote bush, burro bush, and cheesebush (*Hymenoclea salsola*).

Eighteen irrigation canals and drainages are crossed (Goodman Slough is crossed twice). Most are shallow, actively cleared of vegetation and offer little to no wildlife habitat. All are bordered by roads and active agriculture. The following drains offer moderate habitat:

- Borrow Pit Drain - This several-yard-deep and -wide slough is densely vegetated with arrow-weed (*Pluchea sericea*), quailbush (*Atriplex lentiformis*), and cattail (*Typha* sp.); tamarisk (*Tamarix parviflora*) is common.
- East-side Drain - The banks of this several-yard-deep drain have been periodically and recently cleared. Shrub vegetation includes arrow-weed, quailbush, cattail, and tamarisk; complex algae, duckweed (*Lemna* sp.) and rabbit's foot grass (*Polypogon* sp.) are common aquatic associates. The water depth is a few feet deep in the center and the flow is moderate.
- Goodman Slough Drain (Intake Blvd.) - The east side of the road has been periodically and recently cleared and currently has relatively sparse and small arrow-weed. West of the road, the drain is broad and well-vegetated with arrow-weed, quailbush and tamarisk.
- Goodman Slough Drain (16th St.) - The drain on both sides of the road is moderately disturbed by clearing and activities from an adjacent residence; the north side is less disturbed. The drain is vegetated with arrow-weed, quailbush, cattail and tamarisk.
- Central Drain - This drainage has not been recently cleared and is cattail-choked. Quailbush is a common shrub and small narrow-leafed willow (*Salix exigua*) is occasional.

The Colorado River crossing lies between the northern edge of a trailer park and Interstate 10. Both the trailer park and the El Paso metering facility on the east side of the river are paved and/or cleared, fenced and the adjoining shoreline cleared. On the western side of the river, the vegetation at the river crossing consists of remnant riparian

scrub, including tamarisk and arrow-weed. The actual staging area for the boring is in the California Department of Transportation (CalTrans) right-of-way and is cleared, but planted with pruned oleander trees. In general, the native riparian habitat in this area of the river is patchy and has been heavily disturbed by elimination and other human activities.

3.2.5 General Wildlife. Most of the wildlife species found within the Project area have wide distributions, but are found specifically where their preferred habitat is present. Species diversity is low within most desert communities. The greatest diversity of plants and animals occurs in riparian and wetland areas. Wildlife observed at the site included songbirds, reptiles, raptors, and signs of various mammals, such as tracks, scat, burrows, and nests (see Attachment 1 for complete species list).

4.0 POTENTIAL IMPACTS TO SPECIAL-STATUS SPECIES

A total of 57 special-status species that are known from the project region were sought during surveys conducted by the applicant's consulting biologist (see Attachment 2 for species list and survey methods). Special-status species include species that are formally listed as threatened or endangered, candidate species, state and federal Species of Concern and plants from Lists 1A, 1B, and 2 of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (CNPS; 1994). Such species have been determined to be uncommon in at least some portions of their range and/or their viability is questionable due to past and foreseeable impacts. Frequently, they have an inherently limited geographic range and/or limited habitat. Species listed as threatened or endangered are protected from further threats to their viability by federal and state law.

The project site, including the plant and ancillary facilities, has been sited to minimize impacts to special-status wildlife and plant species. It is, however, possible that federal special-status species inhabit the proposed project site or adjacent areas and might be minimally affected by project construction and operation. No evidence of these species was observed during surveys, possibly due to rarity, behavior, or poor germination or growth as a result of poor rainfall in the winter of 1999-2000.

Western evaluated the effects of the proposed action on the following Federally listed, proposed and candidate species:

- Bonytail chub (*Gila elegans*)
- Desert pupfish (*Cyrinodon macularis*)
- Razorback sucker (*Xyrauchen texanus*)
- Gila topminnow (*Poeciliopsis occidentalis occidentalis*)
- Desert Tortoise (Mojave population) (*Gopherus agassizii*)

- Bald Eagle (*Haliaeetus leucocephalis*)
- California Brown Pelican (*Pelicanus occidentalis*)
- Mountain Plover (*Charadrius montanus*)
- Southwestern Willow Flycatcher (*Empidonax traillii extimus*)
- Yuma Clapper Rail (*Rallus longirostris yumanensis*)

4.1 LISTED SPECIES

4.1.1 Bonytail Chub - Endangered - The bonytail chub (*Gila elegans*) is reported to have occurred in the lower Colorado River. However, it is believed to be extirpated in the wild below Lake Havasu (<http://www.lcrmscp.org> 1999). The chub uses mid-channel currents in calm reaches of rivers and the deep, open waters of reservoirs, such as Lake Mead. Impacts to the Bonytail chub include water resource development activities and competition with and predation by non-native species.

The power plant and electric transmission lines associated with the Blythe Energy Project will not affect the bonytail chub. Gas pipeline borings under the Colorado River will also not affect the species. Finally, water wells on the project site will not affect the species by reducing flows in the Colorado River. The Colorado River lies approximately ten miles east of the project wells and is unaffected by the groundwater system on the Palo Verde Mesa. Rather, flows are managed via releases from upstream dams. The Palo Verde Irrigation District (PVID), which covers 104,000 acres of the valley floor between the plant site and the river, diverts an average of about one million acre-feet at the northern end of the valley, of which about half returns to the Colorado River channel through agricultural drains and subsurface seepage. The Blythe Energy Project's maximum annual well water depletions of 3,000 acre-feet represent only 0.06 % of the regional Colorado River volume and about 0.3 % of total local annual water diversions.

Conclusion: The Blythe Energy Project will not affect the bonytail chub.

4.1.2 Desert Pupfish - Endangered - The desert pupfish (*Cyprinodon macularius*) historically occurred in the Colorado River basin from Needles, California to the Gulf of California (<http://www.lcrmscp.org> 1999). The species prefers shallow springs, small, slow-moving streams, marshes and the shallow water margins of large rivers. Impacts to the pupfish include interactions with non-native species, including both fish and amphibians (the bullfrog (*Rana catesbiana*) and habitat degradation. Although the pupfish is tolerant of adverse environmental conditions, such as high temperature, high salinity and low oxygen levels, (Lowe et al. 1990) habitat degradation has become a limiting factor.

The power plant and electric transmission lines associated with the Blythe Energy Project will not affect the desert pupfish. Gas pipeline borings under the Colorado River will also not affect the species. Finally, water wells on the project site will not affect the species by reducing flows in local springs or the Colorado River. Groundwater

evaluations have demonstrated that groundwater extraction from the project wells will produce no interference with the groundwater levels under the Palo Verde Mesa or Palo Verde Valley (Blythe Energy Project Application for Certification 2000). The Colorado River lies approximately ten miles east of the project wells and is unaffected by the groundwater system on the Palo Verde Mesa. Rather, flows are managed via releases from upstream dams. The Palo Verde Irrigation District (PVID), which covers 104,000 acres of the valley floor between the plant site and the river, diverts an average of about one million acre-feet at the northern end of the valley, of which about half returns to the Colorado River channel through agricultural drains and subsurface seepage. The Blythe Energy Project's maximum annual well water depletions of 3,000 acre-feet represent only 0.06 % of the regional Colorado River volume and about 0.3 % of total local annual water diversions.

Conclusion: The Blythe Energy Project will not affect the desert pupfish.

4.1.3 Razorback Sucker - *Endangered* - The razorback sucker (*Xyrauchen texanus*) is reported to occur in the lower Colorado River above Parker Dam. Most suckers in the lower Colorado River are in Lake Mohave, between Hoover Dam and Davis Dam (<http://www.lcrmscp.org> 1999). The species is a bottom feeder, inhabiting both riverine and lacustrine systems. Impacts to the sucker include water resource development and competition with and predation by non-native species.

The power plant and electric transmission lines associated with the Blythe Energy Project will not affect the razorback sucker. Gas pipeline borings under the Colorado River will also not affect the species. Finally, water wells on the project site will not affect the species by reducing flows in the Colorado River. Groundwater evaluations have demonstrated that groundwater extraction from the project wells will produce no interference with the groundwater levels under the Palo Verde Mesa or Palo Verde Valley (Blythe Energy Project Application for Certification 2000). The Colorado River lies approximately ten miles east of the project wells and is unaffected by the groundwater system on the Palo Verde Mesa. Rather, flows are managed via releases from upstream dams. The Palo Verde Irrigation District (PVID), which covers 104,000 acres of the valley floor between the plant site and the river, diverts an average of about one million acre-feet at the northern end of the valley, of which about half returns to the Colorado River channel through agricultural drains and subsurface seepage. The Blythe Energy Project's maximum annual well water depletions of 3,000 acre-feet represent only 0.06 % of the regional Colorado River volume and about 0.3 % of total local annual water diversions.

Conclusion: The Blythe Energy Project will not affect the razorback sucker.

4.1.4. Gila topminnow - *Endangered* - The Gila topminnow is not known to occur in the Colorado River above the inlet of the Gila River.

Conclusion: The project will not affect the Gila topminnow.

4.1.5 Desert Tortoise - Threatened - The desert tortoise (*Gopherus agassizii*) is one of four species of tortoises belonging to the genus *Gopherus*, all of which inhabit North America. The Mojave population of the desert tortoise occurs east and north of the Colorado River, from southern Utah into Mexico. The tortoise is usually found in creosote bush scrub, with a preferred habitat including scattered shrubs with a sufficient herbaceous understory to provide sustenance (<http://www.lcrmscp.org> 1999). Impacts to the tortoise include loss of habitat, traffic mortality, increased predation due to poor waste disposal activities and upper respiratory tract disease syndrome.

The nearest designated critical habitat for the tortoise is in the Chuckwalla Mountains, approximately 40 miles west of the Project. There is some marginal habitat for the Mojave Desert tortoise on the plant site and along the gas pipeline and high voltage transmission line rights-of-way. However, surveys undertaken by Dr. Alice Karl on April 24 and June 2-5, 2000 (Karl 2000) in accordance with desert tortoise survey protocols, found no tortoises, burrows, scat or other sign to indicate their presence. (Additional regional information on the Mojave desert tortoise can be found in Attachment 3.) In spite of the fact that the site is considered poor quality habitat for the Mojave desert tortoise, the following measures will be implemented to minimize impact to any individuals that may come into the area.

Fencing around the 76-acre power plant site will be prior to construction. The fence will be of chainlink, approximately six feet in height, with three strands of barbed wire extending from the top. A section of desert-tortoise proof fence (half-inch to one-inch mesh hardware cloth) three-feet tall will be extended below ground at least two feet or extend outwards, just below the ground surface, about two feet from the fence perimeter.

Any equipment storage areas or staging areas outside the fenced plant site will be temporarily fenced to exclude tortoises.

Collection, holding, and translocation of tortoises (see Designated Biologist below) will comply with the following protocol:

Tortoises will be translocated to a shaded burrow immediately following their capture if the daily surface temperature maximum remains below 109° F(43° C)

If temperatures are warmer than 109° F (43° C), then tortoises should be held in the shade, at air temperatures between 77° and 86°F (25° and 30° C). In the late afternoon of the capture, after ground temperatures have dropped below 108° F (42° C) the tortoises will be released to a shaded burrow within 1,640 feet (500 meters) of the point of capture

If a tortoise is still in a burrow (e.g., found in winter), the tortoise will be removed by carefully excavating the burrow from the mouth to the tortoise and then removing the tortoise

Juvenile tortoises will not be released at dusk, but instead at dawn
If no adequate translocation site is found, an artificial burrow will be dug, but this should be a last resort

Tortoises shall be handled smoothly, quickly, and with clean techniques. Clean techniques will include the use of disposal surgical gloves and disinfecting (bleach or alcohol) all instrumentation coming into contact with tortoises

If held, the tortoises will be put in a sterilized tub. Tubs should be padded and vehicle speed minimized on dirt roads if tortoises need to be transported by vehicle.

Annual surveys of the fence for integrity will be done and the fence will be repaired as needed

Western has determined that the desert tortoise may be affected but is not likely to be adversely affected by the Project. This is based on the absence of tortoise sign and any other indication of their presence in the vicinity of the proposed action, and the measures taken to minimize impacts to the species should it come onto the site.

4.1.6 Bald Eagle - *Threatened* - Most of the bald eagles in western Arizona and southeastern California are winter residents. Wintering birds occur along the Colorado River and its major tributaries and may forage in the project area (<http://www.lcrmscp.org>, 1999). A few nesting records exist but none are known in the vicinity of the project area. Habitat for the bald eagle consists of secure nesting sites, diurnal perches, winter roosts, and foraging areas usually associated with large lakes or rivers. Bald eagles prefer multi-layered, mature or old growth forest stands removed from human disturbance for nesting. Nest sites are usually along shorelines adjacent to open water. Bald eagles prefer large trees and snags for nests and perches (Finch 1992).

Potential impacts to bald eagles include loss of habitat, disturbance during brood rearing and at winter roost sites, collisions and electrocutions. Preferred habitat for nesting, foraging or wintering does not occur in the project area. Collisions with transmission lines are unlikely for raptors, but they are known to happen. There is no history of raptor collisions in the vicinity of Western's Blythe substation. If any existing lines would be upgraded, the same size or larger conductor would be used to maintain or increase visibility. Construction and operation of the gas pipelines will have no affect on the eagle. The design of all of Westerns transmission lines meets or exceeds the criteria of the Raptor Research Foundation for minimizing electrocutions.

Conclusion: The Blythe Energy Project will not affect the bald eagle.

4.1.7 California Brown Pelican - *Endangered* - The brown pelican is known to occur in the Salton Sea and the Gulf of California, including the Colorado River delta. It is

rarely seen as far inland along the Colorado River as Lake Mead (<http://www.lcrmscp.org> 1999), and those individuals that do come inland are thought to be juveniles. Impacts to the brown pelican include interaction with manmade devices such as fishing lines and hooks, pesticides and environmental contaminants. Although it is uncommon, brown pelicans have been electrocuted on power lines (Rick Williams, Duke Engineering, personal communications 2000) and collisions with overhead lines and other manmade objects do occur.

The existing high voltage transmission lines have been designed to minimize electrocutions of large birds. Collisions may occur, and if they do, the appropriate spans will be marked with state of the art devices, such as swan diverters or bird "flappers" to reduce the potential for collisions. Because brown pelicans rarely occur in the Project area, the power plant and the rest of the associated facilities will not affect the pelican.

4.1.8 Southwestern willow flycatcher - *Endangered* - The flycatcher breeds in dense riparian habitats in all or part of seven southwestern states. Habitat requirements include riparian communities with dense stands of willows (*Salix* sp.), tamarisk (*Tamarix* sp.), *Baccharus* sp. or *Pluchea* sp., preferably over water (USFWS 1993). Impacts to the flycatcher include loss and/or fragmentation of habitat and nest parasitism by the brown-headed cowbird (USFWS 1993).

The power plant and electric transmission lines associated with the Project are not likely to affect the flycatcher or its habitat. The possibility of collisions with electric facilities, is remote, especially since most of the lines are already up. If collisions occur, the appropriate spans will be marked with state of the art devices, such as swan diverters or bird "flappers" to reduce the potential for collisions. Hydrological studies have demonstrated that water wells on site will not reduce flows in the Colorado River and therefore will not affect southwestern willow flycatcher habitat. The gas pipeline will be bored under the Colorado River and based on its location will not disturb or fragment flycatcher habitat. Construction will be timed to avoid the nesting season, May 1 to August 1, and any impacts will be short-term and localized. Because of the lack of suitable habitat in the project area and the mitigation measures described, the Project will not affect the southwestern willow flycatcher.

4.1.9 Yuma Clapper Rail - *Endangered* - This rail is known to occur in the Salton Sea, Topock marsh, along the Gila River and the lower Colorado River and associated wetlands. Historically they have been found as far north as Headgate Rock Dam near Parker, AZ (Todd 1986). The rail prefers freshwater marshes with stable water levels supporting mature cattails and bulrushes. It nests on dry hummocks or in small shrubs, just above the water (Lowe et al 1990). Impacts to the rail include loss of nesting and foraging habitat and water quality, primarily increased selenium levels, and unstable water levels. The possibility of collision with overhead lines is present but unlikely due to the flight characteristics of the bird.

The power plant and electric transmission lines associated with the Project will not affect the Hydrological studies have demonstrated that water wells on site will not reduce flows

in the Colorado River and therefore will not affect habitat for the Yuma clapper rail. Because of the lack of sufficient suitable habitat in the project area the Project will not affect the Yuma clapper rail, rail or its habitat. The gas pipeline will be bored under the Colorado River and all other watercourses, drains and sloughs.

4.1.10 Mountain Plover - *Proposed Threatened* - The mountain plover was proposed for listing as a threatened species, February 16, 1999 (USFWS 1999). While this bird is typically associated with short grass prairies of the West, it is "an uncommon transient and irregular winter resident" in the lower Colorado River (<http://www.lcrmscp.org> 1999). Rosenberg et al. (1991) report that it does winter in cultivated lands in and around Blythe, California. Impacts to the species include conversion of breeding and wintering habitat to cropland (<http://www.lcrmscp.org> 1999) and urbanization (USFWS 1999b). The mountain plover may also collide with overhead lines.

Construction of the plant may result in the loss of some poor quality, wintering habitat for the mountain plover. Additionally, there is a possibility that the species may collide with new or existing electric transmission facilities. The applicant will conduct winter surveys for the mountain plover to ensure the species is not present on the site. Because of the poor quality habitat and the lack of cultivated lands involved, loss of wintering habitat for the mountain plover would be minimal. The possibility of collisions with electric facilities is remote, especially since many lines are already up. If collisions occur, the appropriate spans will be marked with state of the art devices, such as bird- or swan-flight diverters or bird "flappers" to reduce the potential for collisions. Because of the small amounts of poor quality wintering habitat in the vicinity of the proposed action, the Project will not affect the mountain plover.

5.0 MITIGATION AND COMPENSATION

The Blythe Energy Project plan of construction and operation incorporates several mitigation and compensation measures to decrease or eliminate direct and net impacts to special-status species. Specific measures are described in detail in the Applicant's Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) (Attachment 2). These measures are summarized below and discussed relative to their anticipated success at reducing or eliminating impacts.

5.1 LISTED SPECIES

5.1.1. Desert Tortoise. The following mitigation strategies will decrease the already-low likelihood of an incidental take.

- 1) The plant site will be fenced prior to construction with tortoise-proof fencing. This fencing is three-foot tall, half-inch to one-inch mesh hardware cloth attached to the site's chain link fence and buried to a depth of two feet. Alternatively, the lower 1.5 feet may be bent at a right angle from the outside of the chain link fence just below the ground surface. The plant site gates will include identical tortoise fencing attached to the lower portion of each chain-link gate and extending to the ground. All

gates will remain closed, except during entry by vehicles. The project owner will conduct maintenance monitoring of the desert tortoise exclusion fencing on a monthly basis and complete repairs within one week of a problem being identified.

- 2) Any equipment storage areas or staging areas outside the fenced plant site will be temporarily fenced to exclude tortoises.
- 3) Following fencing, a trained tortoise biologist will search the interior of the fenced area for tortoises. Tortoises found on the construction site will be removed. Tortoises will be relocated a short distance away (i.e., in their home range) and monitored during construction to ensure their safety. Alternatively, tortoises may be temporarily removed to a climate-controlled area until construction is completed.
- 4) A trained biologist will monitor construction on the natural gas pipeline, on that portion that extends south from the plant site to the Southern California Gas Pipeline through creosote bush scrub under the following conditions:
 - For construction that occurs from March 1 through November 15, during tortoise activity periods, the biologist will accompany construction crews to insure that no tortoises are harmed.
 - Between November 15 and March 1, the biologist will search the construction area and adjacent 200 feet immediately prior to construction, to insure that no burrowed or minimally-active tortoises are harmed. Any tortoises found will be avoided by temporary fencing and monitoring. If a tortoise cannot be avoided, it will be translocated as specified in the BRMIMP.
- 5) Collection, holding, and translocation of tortoises will comply with the following protocol:
 - Tortoises will be translocated to a shaded burrow immediately following their capture if the daily surface temperature maxima remains below 109 F (43 C).
 - If temperatures are warmer than 109 F (43 C), then tortoises should be held in the shade, at air temperatures between 77 and 86 F (25 and 30 C). In the late afternoon, on the day of capture, after ground temperatures have dropped below 108 F (42 C) the tortoises will be released to a shaded burrow within 1,640 feet (500 meters) of the point of capture.

If a tortoise is still in a burrow (e.g., found in winter), the tortoise will be removed by carefully excavating the burrow from the mouth to the tortoise and then removing the tortoise.

 - Juvenile tortoises will not be released at dusk, but will be held and released at dawn.

- If no adequate translocation site is found, an artificial burrow may be dug, but, only after all other options are exhausted.
 - Tortoises will be handled smoothly, quickly, and with clean techniques. Clean techniques will include the use of disposable surgical gloves and all instrumentation coming into contact with tortoises will be disinfected with either bleach or alcohol.
 - If held, the tortoises will be put in a sterilized tub. Tubs will be padded and vehicle speed minimized on dirt roads if tortoises need to be transported by vehicle
- 6) Compensation for habitat lost will occur at a ratio of 1:1. This totals to 77.25 acres, 76 acres for the plant site and 1.25 acres for the pipeline alternative. Compensation funds will be applied to the development of a preserve in the Chuckwalla Mountains, managed and developed by a non-profit organization, probably the Desert Tortoise Preserve Committee. Costs for compensation will include the purchase price per acre, estimated at \$500, plus an endowment fee for acquisition and management, estimated at \$580, based on identical endowment fees for the Lokern Natural Area, a preserve managed by the Center for Natural Lands Management. The total compensation funds would then be \$83,210.

5.1.2. Southwestern Willow Flycatcher and Yuma Clapper Rail. Southwestern willow flycatcher (SWFL) and Yuma clapper rail are known from the project region, although there is no apparent nesting habitat for SWFL on the pipeline right-of-way and the limited rail habitat consists of the least disturbed drainages and canals. To avoid any disturbance to nesting birds, only seasonal construction will take place at the Borrow Pit Drain, Goodman Slough Drain at Intake Boulevard, and the Colorado River crossing. This season of construction will occur between September 1 and April 1.

5.1.3. Bald Eagle and California Brown Pelican. To eliminate the potential for bird collisions with transmission lines, new transmission lines will be installed following Avian Power Line Interaction Committee Guidelines (APLIC 1994). If any existing transmission lines are upgraded, the same size or larger conductors would be used to maintain or increase visibility. Selected electrical equipment with the potential to electrocute wildlife within the substation shall be covered with appropriate UV-resistant material. Finally, if collisions are found to occur, the appropriate spans will be marked with state-of-the-art bird diverters, including swan diverters and "flappers".

5.1.4. Mountain Plover. The project owner will complete winter surveys to ensure that the species is not present on the site. To eliminate the potential for bird collisions with transmission lines, new transmission lines will be installed following Avian Power Line Interaction Committee Guidelines (APLIC). If any existing transmission lines are upgraded, the same size or larger conductors would be used to maintain or increase visibility. Selected electrical equipment with the potential to electrocute wildlife within the substation shall be covered with appropriate UV-resistant material. Finally, if collisions are found to occur, the appropriate spans will be marked with state-of-the-art bird diverters, including swan diverters and "flappers".

5.2 GENERAL MITIGATION MEASURES

5.2.1 Designated Biologist. A Designated Biologist will be appointed for the project and approved by the Energy Commission Compliance Project Manager (CPM). During construction and operation, the Designated Biologist will advise the Construction Manager on mitigation, supervise or conduct mitigation, conduct monitoring and other biological resources compliance efforts, and notify the project owner and the CPM of non-compliance with any of the mitigation measures. The Construction Manager will act on the advice of the Designated Biologist to ensure conformance with mitigation measures. If directed by the Designated Biologist, the Construction Manager will halt all construction activities in sensitive areas to assure that potentially significant biological resource impacts are avoided. The Designated Biologist will inform the project owner of any necessary remedial measures and when to resume construction. The Designated Biologist will also advise the Energy Commission CPM what remedial measures are needed or have been instituted.

5.2.2 Construction Monitoring at Borings. At all borings underneath drainages and underneath the Colorado River, a biologist will be present to monitor construction activities and impacts to wildlife and plants.

5.2.3 Worker Environmental Awareness Program. The project owner will develop and implement a CPM-approved Worker Environmental Awareness Program (WEAP) in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or related facilities during construction and operation, are informed about the sensitive biological resources associated with the project area, their responsibilities, and relevant mitigation measures. The WEAP will consist of an on-site or training center presentation in which supporting written material is made available to all participants. The program will be administered by the Designated Biologist or a competent individual(s) authorized by the Designated Biologist.

5.2.4 Evaporation Ponds. Evaporation ponds will be monitored weekly by power plant personnel for bird and wildlife losses. Any specimens found will be placed in plastic bags, labeled, logged into a database, and then frozen for potential future identification and tissue assessment. If a substantial number of bird and wildlife are found dead during any year, as determined by the CPM or Designated Biologist, then measures will be identified and implemented that will substantially reduce or eliminate the problem. In addition, water quality and invertebrates will be monitored for toxic levels and live bird counts will be conducted.

5.2.5 Weed Reduction Program. A comprehensive exotic species control program will be implemented at the plant site. In addition, only native species will be used for landscaping the plant site. This program will be implemented until such time that the adjacent land use on the north and west sides is no longer a natural community or is

agriculture, or until the plant is permanently closed. At the Colorado River, this exotic control program will be implemented until the Caltrans ROW is replanted and established.

6.0. LITERATURE CITED

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