Victorville 2 Hybrid Power Project
BIOLOGICAL ASSESSMENT ADDENDUM

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BIOLOGICAL ASSESSMENT ADDENDUM

1.0 INTRODUCTION

This biological assessment (BA) addendum has been prepared by AMEC Earth & Environmental, Inc. (AMEC) on behalf of ENSR Corporation for the City of Victorville and Inland Energy, Inc. concerning the proposed Victorville 2 Hybrid Power Project (Project), located in the City of Victorville, San Bernardino County, California (Figure 1). The purpose of this document is to provide the U.S. Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (FWS) and the California Department of Fish and Game (CDFG) with additional site-specific analyses regarding species protected under the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA), as well as other special status species that may be affected by the Project.

A draft Biological Assessment (BA) was previously submitted to the above agencies, pursuant to an ESA Section 7 and CESA Section 2081 consultation regarding EPA's issuance of a Prevention of Significant Deterioration (PSD) permit for the Project (Proposed Action) under the federal Clean Air Act. The following addendum incorporates specifics of the Project modified since the draft BA was prepared, provides additional analysis regarding these modifications and addresses FWS comments contained in a December 12, 2007 letter to EPA.

The focal species addressed herein are the state and federally listed-threatened desert tortoise (*Gopherus agassizii*), the state listed-threatened Mohave ground squirrel (*Spermophilus mohavensis*) and the western burrowing owl (*Athene cunicularia hypugea*). The latter avian species is a CDFG-designated Species of Special Concern protected by both the California Fish and Game Code and the federal Migratory Bird Act.

2.0 PROJECT MODIFICATIONS

Two modifications to the Project have been identified since the draft BA was prepared and submitted for agency review. These include a revision of the planned vehicular access route and a revision of potable water source for Project operations (Figure 2). Both of these modifications are discussed below.

Revised Site Access Route

The VV2 Project will use existing roads for construction and operations site access -- Adelanto, Colusa and Helendale Roads. This access route would be paved along its four-mile length prior to VV2 Project construction activities, but no other roadway modifications are proposed. Temporary desert tortoise exclusion fencing will be installed, under the oversight of qualified biologists, along the currently disturbed roadway shoulders prior to paving and will be removed when Project construction activities are completed.

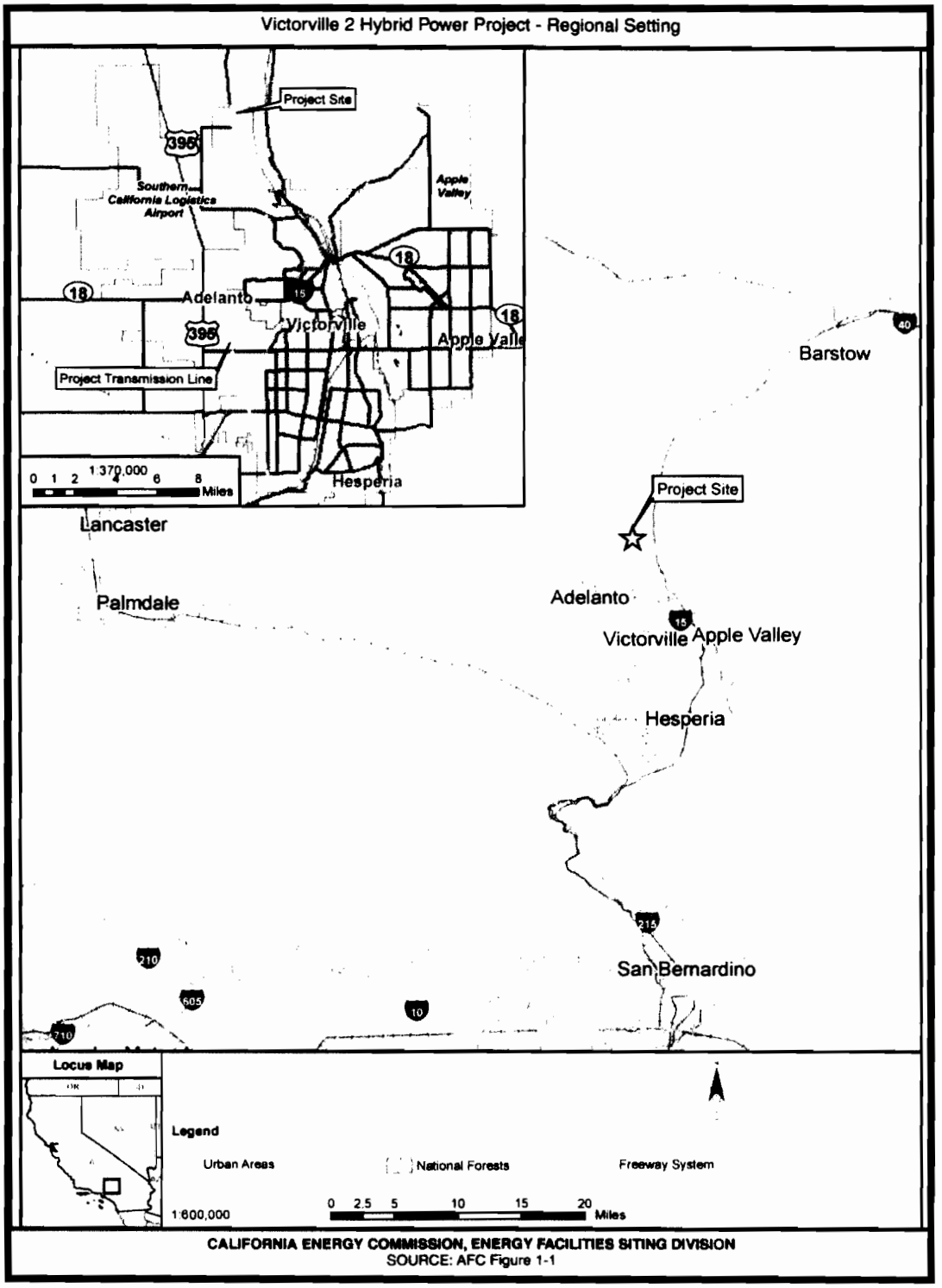

Figure 1. Regional map of the Victorville 2 Hybrid Power Project.

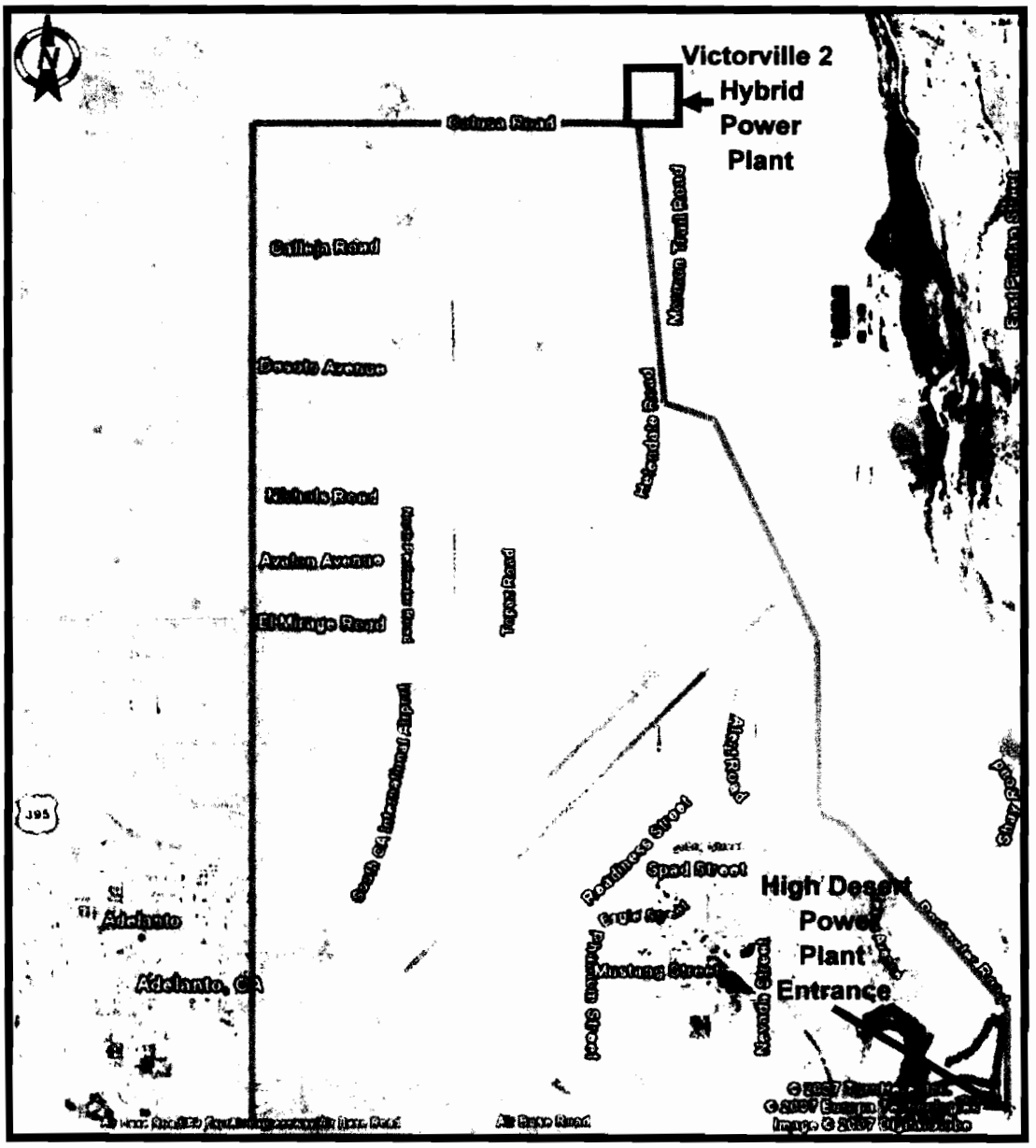

Figure 2. Project modifications map. Revised vehicular access route for the VV2 Hybrid Power Project (highlighted in blue), from Airbase Road in Adelanto California. The planned potable water pipeline placement (highlighted in red) largely follows Perimeter Road to connect with the existing City of Victorville water distribution system near the entrance of the High Desert Power Plant.

Revised Potable Water Source

Rather than excavating an onsite well to supply potable water for the Project, as initially analyzed in the draft BA, an approximate three-mile-long potable water pipeline will be installed. This pipeline will be placed in a 15,000-foot-long by 85-foot-wide right-of-way following the route of the existing Perimeter Road for part of the way, and the route of the City's planned future extension of Perimeter Road for the remainder of the three-mile pipeline route between the Project and the entrance to the High Desert Power Project.

3.0 ENVIRONMENTAL CONSEQUENCES OF THE MODIFIED PROJECT

3.1 Temporary and Permanent Impacts

The following analysis focuses only on environmental consequences of the Project as modified by the revised vehicle access route and planned potable water pipeline installation described above. Affected resource descriptions and environmental consequence analysis specific to all other aspects of the Project have been provided in the previously prepared draft BA.

Small numbers of desert tortoise are known to occur in the immediate vicinity of both the modified vehicle access route and the planned potable water pipeline alignment. Some of this acreage has been assumed by the Project Applicant as occupied by unknown numbers of the Mohave ground squirrel, although this species has not been sighted or trapped in the immediate Project area (AMEC 2007). This habitat may be used periodically by small numbers of western burrowing owl, Le Conte's thrasher and loggerhead shrike. Habitat situated immediately adjacent to Adelanto, Colusa, Helendale and Perimeter Roads has been degraded to varying degrees due to regular vehicle traffic occurring along these roads, which have been used by a small number of residents and maintained by the County of San Bernardino for several years.

No additional surface disturbance is anticipated to occur as a result of installing desert tortoise exclusion fencing or subsequent paving of the revised access route. However, an estimated 30 acres of surface disturbance within the Project's linear utility segment 1 is anticipated to occur as a result of potable water pipeline installation.

Habitat for the desert tortoise and Mohave ground squirrel within the potable water pipeline alignment is considered a temporary disturbance because it will be revegetated according to a plan prepared by the Project applicant. However, it is recognized that the return of impacted habitat to pre-disturbance values would take several years.

Implementation of Project modifications would thus result in temporary impacts to 30 acres of native plant communities (Creosote Bush Scrub, Saltbush Scrub, and Mojavean Juniper Woodland and Scrub) suitable for use by the desert tortoise, Mohave ground squirrel, western burrowing owl, Le Conte's thrasher, and loggerhead shrike (Tables 1-3).

Table 1. Temporary impacts (in acres) per affected vegetation community and Project component, incorporating modifications addressed in this addendum.

Vegetation Community	Power Plant Site	West Staging Area	South Staging Area	Linear Utility Feature Segments			TOTAL
				1	2	3	
Creosote Bush & Saltbush Scrub	0	30.0	20.0	39.2	2.2	31.8	123.2
Pinyon-Juniper Woodland	0	0	0	0	0	23.2	23.2
Total	0	30.0	20.0	39.2	2.2	55.0	146.4

Table 2. Permanent impacts (in acres) per affected vegetation community and Project component, incorporating modifications addressed in this addendum.

Vegetation Community	Power Plant Site	West Staging Area	South Staging Area	Linear Utility Feature Segments			TOTAL
				1	2	3	
Creosote Bush & Saltbush Scrub	285.0	0	0	6.7	0.1	0.1	291.9
Pinyon-Juniper Woodland	0	0	0	0	0	0.2	0.2
Non-native Grassland	3.0	0	0	0	0	0	3.0
Disturbed & Developed Areas	50. 0	0	0	3.6	0	0	53.6
Total	338.0	0	0	10.3	0.1	0.3	348.7

Table 3. Temporary and permanent Covered Species impacts (in acres) per plant communities considered suitable for habitation, incorporating modifications addressed in this addendum.

Vegetation Community	Power Plant Site	West Staging Area	South Staging Area	Linear Utility Feature Segments			TOTAL
				1	2	3	
Creosote Bush & Saltbush Scrub	285.0	30.0	20.0	45.9	2.3	31.9	415.1
Pinyon-Juniper Woodland	0	0	0	0	0	23.4	23.4
Total	285.0	30.0	20.0	45.9	2.3	55.3	438.5

The Project, as modified, has the potential for incidental take of desert tortoises, Mohave ground squirrels (if present), western burrowing owls, as well as other bird nestlings in the vicinity of the vehicle access route and potable water pipeline alignment. This incidental take, i.e., animal harassment, harm or mortality, could result from general surface disturbance (e.g., earth movement, vegetation removal), heavy machinery operation, vehicle collisions with undetected animals and/or the crushing of animals within occupied burrows. Various activities, such as heavy equipment operation and vehicle use, also have the potential to generate disturbance offsite, adjacent to the Project area during the initial construction phase. Some bird species may abandon nests if nearby noise levels are excessive.

In general, initial Project construction activities could result in the temporary reduction of wildlife use on lands adjacent to these two modified project component areas, as the result of construction dust, human activity and noise. Wildlife use of these adjacent lands would be expected to return to pre-construction levels following the completion of construction activities.

Increased traffic on access roads associated with the Project both during the initial construction phase and during routine operations and maintenance poses the potential for increased vehicle-related wildlife mortality. Roadkills could potentially enhance food provisioning opportunities for the common raven and other potential predators of the desert tortoise, Mohave ground squirrel, western burrowing owl and other bird species. However, temporary fencing on the construction site access route and the use of biological monitors on all aspects of the Project would greatly minimize the potential for increased vehicle-related tortoise mortality.

The temporary loss of approximately 30 additional acres of desert tortoise habitat associated with the potable water pipeline and the potential "take" of the federally listed desert tortoise constitutes a "may affect" determination of effect with regard to the Project, as modified, under the ESA. Similar to the Project prior to modification, ESA Section 7 consultation and incidental take authorization would be required. The temporary disturbance of this same 30 acres supporting Mohave ground squirrel habitat and the potential "take" of state-listed animals (desert tortoise and Mohave ground squirrel), also necessitates incidental take permitting under CESA Section 2081. Project modifications will result in temporary impacts to 30 acres of suitable covered species habitat (Tables 1-3).

As a result of data collected during previous zone-of-influence tortoise/western burrowing owl surveys, no desert tortoises, Mohave ground squirrel or western burrowing owl are believed to occur in either the access route road shoulders or along the potable water pipeline alignment. However, the desert tortoise, the Mohave ground squirrel and western burrowing owl are known to occur in the general vicinity. The Project modification areas are also known to support suitable habitat for these species. While Project modification areas will be surveyed prior to all planned surface disturbance work per mitigation measures previously specified in the draft BA (AMEC 2007), the removal of tortoises from harm's way along the access route may become necessary. Similarly, the removal of desert tortoises, Mohave ground squirrel or western burrowing owl from the potable water pipeline alignment during the Project is considered a possible impact.

Four state and/or federally listed species occur in the Project area, but would not be affected by the Project: least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and Swainson's hawk (*Buteo swainsoni*). Likewise, there would be no effects to federally designated critical habitat for southwestern willow flycatcher. While there is potentially suitable nesting (and roosting) habitat within the Mojave River situated east of the potable water pipeline alignment, there is a substantial distance between the Perimeter Road shoulder where pipeline installation would occur and the river corridor. None of the above listed avian species has been reported as nesting in this proximal portion of the Mojave River and these species' migration travels tend to remain largely in the immediate river corridor. No surface disturbance associated with the Project as modified would occur in proximal Mojave River riparian habitat.

While small amounts of salts will be present in evaporative mist emitted by the proposed power plant's cooling tower, these salts are unlikely to adversely affect habitat used by the least bell's vireo, southwestern willow flycatcher, Swainson's hawk or western yellow-billed cuckoo over the short or long term. This conclusion is based on the project's air quality impact assessment finding that only a very small amount of salt (<0.09 $\mu g/m^3$) would potentially reach that portion of the Mojave River situated closest to the project. A virtually undetectable amount of evaporative mist salt (<0.01 $\mu g/m^3$) would potentially reach habitat federally designated as critical habitat for the southwestern willow flycatcher.

Even on a long-term basis, only a very small amount of salt from the proposed cooling tower would be deposited within the Mojave River. As the limited and deciduous vegetation occurring in this reach of the Mojave River is known to be adapted to the natural salt deposition/buildup produced by in an arid riparian environment, it can be concluded that this aspect of the project is unlikely to adversely affect habitat used by the above listed avian species.

Project emissions are also expected to contain minute amounts of nitrogen. The power plant would emit approximately 111.9 tons of nitrogen per year as a waste product during its operation; additional nitrogen would also be produced during construction. A small degree of nitrogen deposition on soils situated immediately adjacent to the power plant cooling towers is expected to occur over time. Desert substrates are generally poor in nitrogen; an increased level of nitrogen could further promote the growth and spread of non-native species of plants, which are generally adapted to a higher level of soil nitrogen than native species. The proliferation of weedy species can compromise the value of local habitat supporting the desert tortoise and Mohave ground squirrel (if it occurs), and potentially increase wildfire fuel sources.

While nitrogen deposition may benefit non-native annual grasses occurring in the immediate vicinity of the Project to a trace degree, this deposition is not expected to extend very far from the power plant cooling tower itself or substantially benefit non-native growth to the detriment of native plant species occurring in the area. Therefore the value of local habitat for the desert tortoise and Mohave ground squirrel is not expected to be compromised. The trace amounts of nitrogen emissions anticipated as a result of Project operations are not expected to reach the Mojave River in amounts that would affect vegetative growth in associated riparian habitats.

A degree of increased noise over ambient sound levels would be expected during installation of the potable water pipeline. However, as the pipeline alignment occurs on the shoulder of an infrequently used road, at somewhat of a distance from Mojave River riparian habitat, this temporary noise increase is not anticipated to substantially affect any species of concern.

3.2 Indirect Impacts

In addition to outright vegetation removal along the potable water pipeline alignment, the operation of heavy equipment and vehicle use may also indirectly affect habitat potentially suitable for the desert tortoise, Mohave ground squirrel (if present), Le Conte's thrasher, San Diego coast horned lizard (*Phrynosoma coronatum blainvillei*) and San Diego pocket mouse (*Chaetodipus fallax pallidus*) by providing a source for non-native or invasive plant species seed germination. Any resulting change of annual plant surface cover which reduced native plants and animals used by these species, or which detract from these species' foraging/survival, would be considered an indirect impact.

The introduction of non-native, as well as some invasive native, plant species sometimes occurs along roadsides that contain disturbed soils. These non-native and/or invasive plants often provide little or reduced nutritional value to native herbivores and can out-compete native plants in some situations. Lands affected by the Project already contain several non-native invasive plant species that also likely will establish themselves in soils disturbed by the Project. An effective revegetation of the potable water pipeline alignment soil disturbance area as currently planned, which re-establishes native perennial plants in soil disturbance areas, would reduce the amount of surface soils susceptible to non-native and invasive plant establishment.

Some non-native grass and mustard species, when established, can also alter natural wildfire regimes by increasing fuel connectivity and/or fuel loads, influencing wildfire severity and periodicity. Although no recent wildfire evidence was observed in the area, a high potential for wildfire in the region was noted in the several wildlife surveys undertaken for the Project.

Any creation or enhancement of wildfire fuel sources as a result of installing the potable water pipeline would indirectly add to the general threat of wildfire ignition in the affected area, which could affect habitat for the mammal and reptile species mentioned above. As mentioned above, several non-native and invasive plant species already occur in the Project area that will likely establish themselves in soils disturbed by the Project. An effective revegetation of the potable water pipeline alignment soil disturbance area, incorporating the removal of certain non-native plant species (i.e., *Salsola tragus* and *Brassica* spp.) during the immediate post-construction timeframe, would reduce potential wildfire fuel loading impacts.

Project operations are anticipated to generate varying levels of dust and ambient noise adjacent to the proposed power plant. Periodic maintenance and operation of proposed utility features are also expected to generate small degrees of dust, lighting and ambient noise.

3.3 Cumulative Impacts

Impacts associated with a single action, when considered individually, may not be considered significant. However, when considered collectively with other past, present, and future actions in the region, impacts of such actions may contribute incrementally to the loss of occupied/suitable habitat or individual special-status species. Cumulative impacts for the Project have been assessed in the previously-prepared BA and have not appreciably changed with the modifications discussed in this addendum.

4.0 IMPACT MINIMIZATION AND MITIGATION

Conservation measures previously incorporated into the Project apply to the vehicle access route and potable water pipeline installation modifications discussed in this addendum.

The following measures have been incorporated into the Project to address the modifications:

- A biological resource monitor will monitor the installation of all desert tortoise exclusion fencing along Adelanto, Colusa and Helendale Roads. A qualified biological resource monitor will similarly be onsite or on call during Project construction to address issues that emerge relative to possible desert tortoise entry onto fenced portions of these roads. If necessary, vehicle traffic/project work will be halted or safely directed around desert tortoises entering fenced access route roadways until such time as the affected animal leaves the area on its own accord.

- A 25 mph speed limit will be established for vehicular traffic associated with the Project along the Adelanto-Colusa-Helendale vehicle access route; as well as along Perimeter Road during potable water pipeline installation work.

- Biological resource monitors will monitor all potable water pipeline installation activities.

- Prior to any proposed vegetation removal or surface disturbance along Adelanto, Colusa, Helendale and Perimeter Roads, a western burrowing owl survey will be conducted according to established guidelines. If this species is detected as at-risk in areas where Project work will be occurring, protocol outlined by the CDFG and specified in the BA prepared for the Project will be followed.

- Prior to any proposed vegetation removal or surface disturbance along Adelanto, Colusa, Helendale and Perimeter Roads in the regional avian nesting season (February through June), an avian presence survey will be conducted by a qualified biologist(s). If no at-risk nesting bird use is detected, planned surface-disturbing activities would proceed. If nesting birds are found and determined to be at-risk, Project work would be halted in a 300-feet circumference non-disturbance buffer area until the affected bird(s) is no longer present.

4.1 Surface Disturbance Revegetation

Upon completion of construction of the potable water pipeline, associated soil disturbance areas will be planted with native species in accordance with a revegetation plan to be approved by USFWS, CDFG and CEC. This revegetation plan will include, but not be limited to: (1) the transplanting of all Joshua Trees occurring within the surface disturbance footprint of the potable water pipeline that are judged suitable for transplanting/adoption to appropriate habitat within the Project area or adopted out to appropriate entities in accordance with City of Victorville Joshua Tree Ordinance direction; (2) "vertical mulching", involving the placement or "planting" of shrubs salvaged during surface clearing of the pipeline, as well as large rocks/vegetative debris, into the soil disturbance area; (3) the hand-broadcasting of locally-collected native vegetation seed into the soil disturbance area; and (4) a focused removal of targeted non-native, invasive plants (*Salsola tragus* and *Brassica* spp.). All proposed revegetation of the potable water pipeline will be monitored by a qualified biologist to minimize impacts upon special status species potentially occurring in the vicinity of the Project.

5.0 CONCLUSION

This addendum has analyzed a modified vehicle access route for the Victorville 2 Hybrid Power Project using Adelanto, Colusa and Helendale Roads; and installation of an approximate three-mile-long potable water pipeline. These project modifications will result in an additional 30 acres of surface disturbance. Thirty (30) acres of desert tortoise and Mohave ground squirrel habitat would be temporarily impacted as a result of these Project modifications, raising the total temporary and permanent habitat disturbance of the Project to 438 acres. Impact minimization measures previously prescribed for the Project also mitigate the potential impacts of these modifications, and additional impact minimization and mitigation measures prescribed herein have been incorporated into the Project design.

6.0 LITERATURE CITED AND REFERENCES

AMEC Earth & Environmental, Inc. (AMEC). 2007. Draft [accepted as final] Victorville 2 hybrid power project biological assessment. City of Victorville Planning Department, Victorville California.