

**HABITAT CONSERVATION PLAN FOR THE  
LAMONT PUBLIC UTILITY DISTRICT  
EFFLUENT DISPOSAL SITE EXPANSION,  
KERN COUNTY,  
LAMONT, CALIFORNIA**

**For submittal to the  
US Department of the Interior  
Fish and Wildlife Service  
Sacramento, California**

**for**

**Lamont Public Utility District  
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**November 2004**

## EXECUTIVE SUMMARY

The Lamont Public Utility District (LPUD) proposes to construct an effluent disposal site expansion on a 160 acres site south of Lamont, Kern County, California. The project will permanently affect about 19 acres of habitat occupied by Tipton kangaroo rats (*Dipodomys nitratoides nitratoides*). Tipton kangaroo rats were documented to occur on the site in low densities as determined by trapping for identification documented in December 1995. Because of high flooding conditions during 1998, the United States Fish and Wildlife Service directed that the Tipton kangaroo rats be trapped and removed from the site. Threatened individuals were relocated to a protected area at California State University, Bakersfield. The project site was also known habitat for Hoover's woollystar (*Eriastrum hooveri*) and the San Joaquin kit fox (*Vulpes macrotis mutica*). Hoover's woollystar, formerly listed as threatened, was found on the project site in 1986 (Taylor) and 1995 (Wolfe). Old scat and potential San Joaquin kit fox dens were observed on the location. However, during the past few years no kit fox have been reported from the project site or adjacent areas during the site surveys. However, it is a highly mobile species that could range through the site.

Earth-moving activities for the project construction and maintenance, periodic flooding and/or irrigation and crop farming will result in the potential "take" of the Tipton kangaroo rat and for potential "harassment" of the San Joaquin kit fox. Take is defined as "to harass, harm, pursue, hunt..." and is prohibited under the federal Endangered Species Act (Act). Consequently, this Habitat Conservation Plan (HCP or Plan) has been developed in accordance with Section 10(a) of the Act to obtain a permit for the LPUD project to proceed while providing for take avoidance, minimization of impacts, mitigation and compensation for the endangered Tipton kangaroo rat, San Joaquin kit fox and sympatric species that may also potentially occur on the project site. In addition, Tipton kangaroo rats or San Joaquin kit fox could move back onto the site during or following construction, or may move onto the disturbed site from adjacent roadside habitats or small nearby habitat fragments.

This Conservation Plan describes the project actions and its impacts on the endangered Tipton kangaroo rat, San Joaquin kit fox, and western burrowing owl (covered species). The western burrowing owl has been included as a species of concern because the HCP will be cosigned by the California Department of Fish and Game (CDFG) and a petition has been submitted to CDFG to list it.

The principle biological goal of this HCP is to help the long term continued existence and to contribute to the recovery of the Tipton kangaroo rat and the San Joaquin kit fox. This goal is consistent with the Recovery Plan for Upland Species of the San Joaquin Valley (USFWS 1997). This goal will be fulfilled by the following objectives: First, obtain suitable habitat contiguous with other habitat for conservation in perpetuity; second, minimize the level of incidental take of covered species within the project site through take avoidance measures, and third, educate the staff and

contractors that enter the project site. The primary overall biological objective by which the principle goal will be attained is to protect a portion of existing high quality land that is on a preserve. The “Cole’s Levee Ecological Preserve” site helps to protect habitat and in some cases improve moderate quality habitat necessary for the continued existence of the species. This site also provides contiguous occupied habitat and allows for the movement of wildlife from one location to another. The Plan also delineates the take avoidance, minimization and mitigation measures for the effects of the project on these species. The HCP includes the Implementing Agreement and incorporates, by reference, the California Department of Fish and Game Incidental Take Permit, both of which are designed to ensure that the Plan is properly conducted. The specific biological objectives are as follows:

- 1) The HCP provides the means by which habitat loss will be compensated for, either through conservation credits or direct payment for acquisition and long-term management of an off-site parcel of prime Tipton kangaroo rat habitat through the Coles Levee Ecological Preserve or other approved location.
- 2) The HCP requires that the project minimize the level of incidental take of covered species within the project site through take avoidance measures that are detailed in Sections 5.3 and 5.4, respectively.
- 3) The HCP requires the development and implementation of a training program for employees and contractors that shall be conducted by a qualified biologist prior to construction to educate all workers on identifying threatened and endangered species along with providing them the knowledge of the mitigation measures and reporting requirements of the Section 10(a) permit.

The information collected from the baseline studies conducted by various biological consultants will serve as the basis for monitoring the effectiveness of mitigation. These evaluations will assist in determining any necessary adaptive management changes that may be needed to maintain the construction and operation of the project in compliance with the HCP.

The length of the permit term being requested is for 50 years, which is the typical viable life of an effluent disposal site (Clint Stewart, personal communication). Unless there are significant technological changes, the project and permit are anticipated to be required throughout the life of the Town of Lamont. The facility in fact, likely would be enlarged and upgraded during that time period. Concomitantly, during that time period, under the auspices of the Recovery Plan (USFWS 1997), the planned implementation of the Kern County Valley Floor Habitat Conservation Plan (KCVFHCP), the Kern Water Bank Habitat Conservation Plan, and the contiguous Metropolitan Bakersfield Habitat Conservation Plan (MBHCP), populations of the San Joaquin kit fox (SJKF) may be expected to stabilize, or even more likely, increase. These improvements would result in the continuing need for a permit that extends throughout the operation life of the facility, or until such time as the San Joaquin kit fox and Tipton kangaroo rat have recovered to the extent that they are delisted.

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## 1 INTRODUCTION AND BACKGROUND

The Lamont Public Utilities District (LPUD), a small local agency in Kern County, California, is planning to design and implement a sewage effluent disposal site expansion project because of local growth patterns and the agricultural demographics. Operation of the proposed effluent disposal proposal project is contracted to Community Recycling and Resource Recovery Inc. However, it may be operated directly by LPUD or another contractor in the future.

The Lamont Public Utilities District is responsible for sewage treatment and handling of wastewater disposal for the unincorporated town of Lamont. They are presently using irrigation of alfalfa, infiltration and evaporation for the treatment of effluent from their sewage treatment ponds. Sewage typically enters a treatment plant site in pipelines. It is screened to remove coarse materials and is then pumped into ponds where natural biological processes treat the material. The materials may be re-circulated in additional treatment ponds or discharged to be sprayed or flooded onto agricultural fields for leaching and evaporation. Laws and regulations strictly limit potential uses of sewage effluent. It cannot be used on any agricultural crop destined for human consumption (Clint Stewart, personal communication, 2003), but is allowed for use on livestock forage crops, like winter wheat, corn, and alfalfa.

The effluent disposal expansion project of the Lamont Public Utilities District is being conducted in cooperation with the Regional Water Quality Control Board (RWQCB) because of increasing population with a concomitant capacity need for increased effluent disposal capacity. Regulations require a 30-year capacity for spreading grounds. Although a small town of about 3900 families, most of whom are farm workers, Lamont is experiencing steady growth. In contrast to general population statistics, in Lamont, often several working farm families will reside together in a single dwelling. This type of living arrangement increases sewer usage above what would typically be experienced for a single family dwelling. The sewage treatment facility is presently in an expansion mode, with public hearings being conducted. Existing operations have received several violations from the Regional Water Quality Control Board; consequently, implementation of this expansion is extremely important.

The LPUD initiated irrigation on a site that supports some habitat for threatened and endangered species. Consequently, this Habitat Conservation Plan (Plan) was developed by M.H. WOLFE *and Associates* ENVIRONMENTAL CONSULTING INC. (MH Wolfe & Associates) at the request of LPUD with concurrence of and in coordination with the US Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG). Those persons involved in the preparation of the Plan are listed in Appendix 10.1.

## 1.1 LOCATION

The project site is located on approximately 160 acres in the SE 1/4, Section 25, T31S, R28E, Weedpatch Quadrangle, Mt. Diablo, Base and Meridian, Kern County, California. It is about 2.5 miles directly south of the town of Lamont, adjacent to the west side of Wheeler Ridge Road (State Highway 184) which borders the eastern property boundary as shown in Figure 1. Dirt roads for farm access run alongside the northern and southern boundaries of the project site. The western side is bound by land operated by the Community Recycling and Resource Recovery Inc., for composting. Bear Mt. Boulevard, State Highway 223, runs east and west about .5 miles north of the project site. The existing LPUD sewage treatment ponds are located in the same section to the northwest of the proposed project spreading site. (See Figure 1: general location of project area.)

## 1.2 EXISTING ENVIRONMENT

The site is located on the northern part of the alluvial plains which used to drain runoff into Kern Lake from the Sierra Nevada. The primary stream flow across the area originated from Caliente Creek. Aerial photography indicates that former ephemeral drainage channels crossed the property and the vegetation is interspersed with small alkali flats. These areas are periodically inundated temporarily by sheet flooding from Caliente Creek. As most of the creek channels or drainages have been eliminated on surrounding properties, flooding is likely worse than under natural conditions. As with the loss of natural channels, water flows in the roadways, like rivers. Based on records from the Kern County Office of Emergency Services, Caliente Creek floods significantly about every ten years on the average. Some of these years, waters also flood the Town of Lamont and adjacent areas. The project area is within a 500-year floodplain. (See Figure 2. Existing Site Condition.)

Prior to disturbance, the project area likely supported alkali sink and valley saltbush scrub habitat types. Over the years it has become completely isolated from adjacent habitat, and is entirely surrounded by agricultural and industrial land uses. Presently, the project site has been irrigated and disked repeatedly and is a degraded and disturbed piece of habitat. Community Recycling and Resource Recovery, Inc., which composts a variety of used materials for recycling, is located west of the site. Kern County operates the Arvin landfill to the southeast of the site. Vineyards are to the south and rotating annual crops, like cotton, have been planted on the north and east, north of the Kern County landfill. The site is fenced with a barbed-wire livestock fence. The site is north of Paradise Lake, several other water ski lake developments and former gun clubs. A biological review of the site biota was completed by Pruett and Lawrence (1993). Later, Bio-Environmental Associates (1995) walked transects and conducted kangaroo rat trapping to verify the species of kangaroo rat inhabiting the project site. These reports are included in Appendix

10.2. M.H. Wolfe and Associates (1999, 1996) have walked transects on the site to verify former surveys and later, to trap kangaroo rats for removal at the direction of the USFWS. Figure 2 shows the existing site conditions. The habitat that has been indicated in the map key represents the overall potential kangaroo rat habitat that was destroyed on the property. A substantial amount of this site was dense vegetation and therefore not likely to have had any Tipton kangaroo rats present. Other areas are subjected to regular inundation and do not support burrows.

The site has apparently been grazed by sheep and a corral has been present on the site for many years. Numerous surface scatters of solid waste disposal and debris reported by Pruett and Lawrence (1993) also were on the site. Two underground pipeline rights-of-way and a power transmission utility right-of-way criss-cross the property. These are also illustrated on the map in Figure 2. These rights-of-way all have dirt access roads associated with them. Historically, parts of the site have been disked to help ensure water infiltration from sprinkler and flood irrigation. During a reconnaissance survey on 19 December 1996, the site was being irrigated and contained numerous pockets of effluent collecting in low areas and disk furrows. Numerous small dikes had been constructed and strips of soil across the site had been disked to enhance infiltration. The project site has had a firebreak maintained by disking around the perimeter of the acreage. In addition, strips of land on the site have been disked to enhance water infiltration into the soil. Consequently, the site is comprised of areas of strips of disturbed habitat, alternating with barren disked areas. Community Recycling and Resource Recovery Inc., located west of the site, has several piles of organic materials on the site being composted and loaded for transportation for use as mulches and soil treatment materials. Office trailers and a parking area are also located in the northwest corner of the property. A small pond had filled up alongside the northern access route, and ponded water was bermed in the farthest most southwest corner of the project location to prevent its flow onto adjacent lands. Apparently a 12-foot differential in elevation occurs on the site, causing water to flow in that direction. In addition, ephemeral flow channels observed from aerial photography indicate a similar northeast to southwest flow pattern.

### 1.2.1 Vegetation

Pruett, Lawrence and Associates (1993) described the project site as degraded valley saltbush scrub habitat (Holland 1986). Desert saltbush (*Atriplex polycarpa*) is the dominant perennial shrub. Dense growth of alien annual grasses, such as red brome (*Bromus madritensis rubens*) and foxtail fescue (*Festuca megalura*), dominate the under story along with *Atriplex hastata*. Vegetation in the former drainage channels is much denser than on the uplands and alkali scalds, which are mostly void of vegetation in average or dry years. Based on fieldwork and review of aerial photography, likely,

prior to disturbance, the site is actually more of an alkali sink habitat type, than valley saltbush scrub habitat type. Hundreds of small alkali scalds dot the landscape. A rare plant survey was conducted by Taylor and Davilla (1986) that encompassed the area. Hoover's woolly-star, a formerly listed threatened plant species, was documented.

### 1.2.2 Soils

The soil mapping units illustrated for the project site identify Kimberlina fine sandy loams and Weedpatch clay loams with associated inclusions (NRCS 1996). The soils on the site are not particularly permeable, having low to moderately-low permeability. That is why the general area is so well suited to the numerous water ski lakes constructed nearby. The soils seal themselves, making excellent ponds for evaporation, as percolation is limited. They also tend to be saline-sodic in some areas, as reflected by the presence of many alkali "scalds".

### 1.2.3 Wildlife

Pruett and Lawrence (1993) identified potential dens and San Joaquin kit fox scat on the site. No San Joaquin kit fox have been seen in the area in many years based on anecdotal reports from field workers and other biologists. Biological surveys on the nearby Paradise Lakes project identified no San Joaquin kit fox evidence (Wolfe 1991). BioEnvironmental Associates (1995) identified the presence of Tipton kangaroo rat, badger, western burrowing owl and Hoover's woollystar species on the project site. During a reconnaissance visit to the site in December, 1996, none of the endangered species burrow locations previously flagged by Tabor (1996) still supported active small mammal burrows. However, two active potential Tipton kangaroo rat burrows were observed in the southeast quadrant of the site. Prior to becoming highly disturbed, habitat on this site also may have been expected to also support the San Joaquin antelope squirrel (*Ammospermophilus nelsonii*) and the Bakersfield cactus (*Opuntia basilaris*) but none were reported or found to occur on this site. Migratory waterfowl forage is present and some species of waterfowl and shorebirds may nest on the project site.

## 2 PROJECT DESCRIPTION

On the northwest corner of the site two ponds will be constructed on approximately twenty (21) acres which are shown on the site plan in Figures 3 (Proposed Project Site Layout) and 4 (Proposed Project Design for Ponds). This pond construction is to be located in unoccupied and primarily disturbed areas as reported by trapping reports (BioEnvironmental 1995) and may occur as the first phase of the project, prior to completion of the permit

documents. Many activities already occur in this area such as composting and agriculture. The remainder 139 acres of the property will be graded for access roads and leveled. The east side of the property including the power line right-of-way will be planted in corn, alfalfa, or another forage crop that can be irrigated and harvested periodically through standard cultivating and harvesting techniques.

A series of terraced benches may be constructed on the east side of the site, which is designated for agricultural use, which currently surrounds most of the project site. Effluent would be spread aurally onto the benches, which would be about 600 feet wide, with approximately a four-foot gently-sloped drop between each bench. The terraced leaching benches would be used sequentially. This will allow evaporation and infiltration of the effluent into the soil while water is being spread on other benches. The effluent will be spread on each pad, as needed. Following the completion of infiltration and drying, each bench will be disked several times per year to maintain the highest levels of permeability and percolation. Winter wheat, corn, alfalfa or another forage crop may be planted on the benches and harvested periodically.

### 3 SPECIES OF CONCERN ON THE PROJECT SITE

Table 1. Species of Concern

Species	Status: Federal/State/CNPS <sup>a</sup>
<u>Plants</u>	
<i>Opuntia basilaris treleasei</i> (Bakersfield cactus)	Endangered/Endangered/ List 1B <sup>b</sup>
<i>Stylocline masonii</i> (Mason's neststraw)	FSC <sup>d</sup> /-/List 1B
<i>Delphinium recurvatum</i> (Recurved larkspur)	FSC/-/List 1B
<i>Lembertia congdonii</i> (San Joaquin wooly-threads)	Endangered/-/List 1B
<u>Mammals</u>	
San Joaquin antelope squirrel ( <i>Ammospermophilus nelsoni</i> )	-/Threatened/-
San Joaquin kit fox ( <i>Vulpes macrotis mutica</i> )	Endangered/Threatened/-
Tipton kangaroo rat ( <i>Dipodomys nitratooides nitratooides</i> )	Endangered/Endangered/-
Tulare grasshopper mouse	-/CSC <sup>e</sup> /-

(*Peromyscus maniculatus anacapae*)

Western burrowing owl  
(*Athene cunicularia*)

MBTA/CSC/-

### Reptiles

Blunt-nosed leopard lizard  
(*Gambelia silus*)

Endangered/Endangered/-

California horned lizard  
(*Phrynosoma coronatum frontale*)

-/CSC/-

- 
- a CNPS - California Native Plant Society list
  - b List 1B - CNPS; plants considered rare or endangered in California or elsewhere
  - c List 4 - CNPS; plants of limited distribution, a watch list
  - d FSC - Federal Species of Concern (formerly Candidate Category 2 Species)
  - e CSC - California Department of Fish and Game "Species of Special Concern"
  - f MBTA - Protected by the federal Migratory Bird Treaty Act
  - g EPA - Protected by the Eagle Protection Act
  - h CDF: sensitive - California Department of Forestry and Fire Protection "sensitive species"
  - i FPT - Federally Proposed Threatened
  - j FP - "Fully Protected" by the California Department of Fish and Game

Table 1 lists potential species of concern that could occur on habitat in the project area. Most of these will not be considered species to be covered by this Habitat Conservation Plan because it is unlikely they will occur on the property. Most of these were not reported to have been observed, either during surveys conducted by Pruett and Lawrence (1993) or by Tabor (BioEnvironmental Associates 1995). Some species such as the San Joaquin or Nelson's antelope squirrel (*Ammospermophilus nelsoni*) and the blunt-nosed leopard lizard (*Gambelia silus*) would be expected to occur on a similar site but only prior to disturbance. The blunt-nosed leopard lizard can be found throughout the San Joaquin valley and surrounding foothills where vegetation is sparse and is disturbance is low. Habitat on the project site will be lost; however, blunt-nosed leopard lizards rarely inhabit small pieces long term isolated and fragmented habitat. CNDDDB reports on the site, dated 4 March 1993 and 8 August 2002, show no blunt-nosed leopard lizards on the site. The nearest occurrence of blunt-nosed leopard lizards was many miles northeast of the project site (CNDDDB 1993, 2002). Therefore, the Service has requested that the blunt-nosed leopard lizard not be included in this HCP.

The Bakersfield cactus (*Opuntia basilaris treleasei*) would be expected to occur on a similar site, but only prior to agricultural activities. Twisselman (1967) reported Bakersfield cactus to occur extensively on the Caliente Creek alluvial flood plain prior to agricultural development. This area is periodically inundated temporarily by sheet flooding from Caliente Creek. But none of these species have been identified on the site during any of the work over the past two years, nor have they been reported to the California Natural Diversity Data Base. Previous biological surveys were conducted by Pruett and Lawrence (1993), BioEnvironmental Associates (1995) and Taylor and Davilla (1986) conducted a plant

survey. The documented results of their work are illustrated on Figure 5 (Biological Survey Results).

### 3.1 COVERED SPECIES

#### 3.1.1 Tipton Kangaroo Rat

The Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*) is listed as endangered by both the federal government and the State of California because of loss of most of its habitat, largely from agricultural developments. Mineral development, urban sprawl, off-road vehicle use, wildfire, utility corridor construction and highway maintenance also contribute to loss of habitat. The historical range of the Tipton kangaroo rat was estimated to cover approximately 1,716,480 acres within the San Joaquin Valley and as of 1979 about 96 percent of the former Tipton kangaroo rat habitat has been lost (Williams 1985).

The California aqueduct is generally accepted as the east/west boundary between the ranges of the Tipton kangaroo rat and short-nosed kangaroo rat. Although BioEnvironmental Associates (1995) states the argument that the population of kangaroo rats on this site may in fact be short-nosed kangaroo rats, considering the ecology of the site, that seems unlikely. Short-nosed kangaroo rats tend to occupy higher elevation sites, which do not tend to be periodically flooded, as those on the valley floor are. The elevation of the project site ranges from 345 to 363 feet, which is more typical of the valley floor habitats occupied by the Tipton kangaroo rat. More importantly, the project site is in an area, which historically became at least partly flooded. Numerous potholes and channels used to occur in the region between this site and the edge of the Kern Lake bed, which is only about 2.5 miles distant to the southwest, which is also the direction of flow across the project site. Other local isolated populations remain on private lands adjacent to several water ski lakes to the south of the project site. In the southern part of the San Joaquin Valley, a genetic complex of Tipton and short-nosed kangaroo rats is believed to occur because of the lack of any physical or geographical barriers (Germano, personal communication, 1991; Williams, personal communication, 1991).

The Tipton kangaroo rat primarily inhabits the alkali sink vegetation type. The dominant plant species in this community are allenrolfea, inkweed and saltgrass. Tipton kangaroo rats also live in saltbush scrub and valley grassland habitats in the valley floor. Their burrows are commonly on mounds or other elevated places such as near the base of shrubs, which helps prevent flooding of the burrows during the rainy season. However, when

populations are high, they also may burrow on alkali scalds and alkali vernal pools, which in some years may be flooded. Where much of their habitat has been eliminated, remnant populations may occupy road banks and facility berms in the oil fields and fallow agricultural lands.

The Tipton kangaroo rat lives in small burrows in the ground which are about 1.5 inches in diameter. Densities of the Tipton kangaroo rat in alkali sink vegetation have been estimated at 1.4-2.6 /ha (Clark et al. 1982) and 2/ha (Hafner 1979). The Tipton kangaroo rat eats mostly seeds, but insects and greens are included in its diet. They store seeds in vertical burrows in the ground or inside their burrows. Kangaroo rats do not require water, which makes them very adapted to a desert environment. Similar to other kangaroo rats, the Tipton kangaroo rat is nocturnal. Its predators include the fox, badger, coyote and many birds of prey.

Tipton kangaroo rats experienced a significant population decline during the winter of 1994-1995, a winter of above average precipitation. It is theorized that wet years are extremely hard on Tipton kangaroo rats because of their small size and narrow temperature control ability. Their shallow burrows easily become saturated and wet, which may contribute to their rapid demise (Single, Germano and Wolfe 1996).

A biological trapping survey of the site revealed that some of the small mammal burrows on the site were inhabited by the endangered Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*) (BioEnvironmental Associates 1995). A copy of this report is included in Appendix 10.2. The Tipton kangaroo rat was determined to be the only threatened or endangered wildlife species currently found to inhabit the proposed project site. The Tipton kangaroo rat was first identified to occur on the project area during trapping surveys conducted in November 1995 by BioEnvironmental Associates (1995). Locations of potential burrows were also mapped during the trapping effort.

Trapping success was not high; being only 14 percent of the traps set captured any mammals (BioEnvironmental Associates, 1995). Similarly, trapping conducted for the Champagne Shores (later renamed Paradise Lakes) Habitat Conservation Plan in Section 1, T32S, R28E, also reflected low densities of Tipton kangaroo rats. In fact, on 85 acres of the Paradise Lake project, about 25 acres, or 29 percent, were found to be occupied by the Tipton kangaroo rat (Wolfe 1991).

About 76 acres of natural habitat were measured to occur on this project site (Figure 5). The acreage of occupied habitat was determined by mapping the

survey results (BioEnvironmental Associates 1995) on an aerial photo of the site taken in May, 1994, with a scale of one inch equal to 200 feet. A systematic point sampling process using a dot grid was used to determine the total remaining occupied habitat acreage on the site at that time. Densely vegetated drainages and disturbed areas were not considered to be habitat. On the proposed project site about 19 of the 76 acres of habitat, or 25 percent of the site supported habitat that appears to have been occupied at or about the time of the biological survey work. The kangaroo rat burrows are located in the dashed enclosure areas with sparse vegetation, but not those which are flooded on the project site as shown on Figure 5 (Biological Survey Results).

The Tipton kangaroo rat is listed as endangered by both the federal government and the State of California because of loss of most of its habitat, largely from agricultural developments. However, mineral development, urban sprawl, off-road vehicle use, wildfire, utility corridor construction and highway maintenance also contribute to loss of habitat. As of 1979, about 96 percent of the former Tipton kangaroo rat habitat has been lost (Williams 1985) and habitat loss is continuing. However, development of habitat conservation plans by Kern County, the City of Bakersfield, Kern Water Bank Authority for the Kern Fan Element Project, established the Coles Levee Ecosystem Preserve. Implementation of other habitat loss compensation measures have already led to the development of major refuges for endangered species, including the Tipton kangaroo rat and San Joaquin kit fox. These include additions to Allensworth, the Kern Wildlife Refuge, the establishment of the 6,059 acre Coles Levee Ecosystem Preserve and the Lokern Preserve which is under development.

### 3.1.2 San Joaquin Kit Fox

The San Joaquin kit fox (*Vulpes macrotis mutica*) is a very small, finely boned canid, with a sharp, narrow snout and disproportionately large ears. An adult is about 20 inches long, with a black-tipped tail. A full size male adult may weigh about five pounds. The San Joaquin kit fox is listed as state threatened and federal endangered. They are largely nocturnal, but may be out in the early morning or later afternoons on cool or overcast days. They utilize underground dens, with one to many entrances. They also may use a variety of dens throughout the year, from one to 20 at different locations across a home range, which averages one to two square miles. Their primary foods depend upon availability, but is most typically lagomorphs, being replaced with kangaroo rats and other rodents or birds when lagomorphs are not available. In the northern most parts of its range, in degraded habitats, it subsists primarily upon ground squirrels (*Spermophilus beechyii*). This forced change in prey base requires the fox to forage during the day, increasing its exposure to predation by the coyote.

Although no active San Joaquin kit fox dens were located on the project site. During their biota report studies, Pruett and Lawrence (1993) reported the presence of scat and "probable" dens. However, their report did not state where on the 160-acre site these were found. Scat of the San Joaquin kit fox and two potential fox dens were identified on the adjacent Arvin Landfill site (Biosystems Analysis 1991). BioEnvironmental (1995) reported active badger dens on the LPUD site; however, none were identified to occur on the Paradise Lakes site about one mile south of the proposed project (Wolfe 1991).

The San Joaquin kit fox is known to inhabit old badger dens (C.E. Harris, personal communication 1987) and pipes, both of which were located on the project area. A highly mobile species, the endangered San Joaquin kit fox may range through and/or periodically use the project site for foraging or denning. Numerous coyotes and wild dogs have been reported on the project site by CR&RR staff. Their presence may be effectively minimizing or eliminating the San Joaquin kit fox from the area. Packs of feral dogs were observed on the site by M.H. Wolfe (1998, 1999). Coyotes have been documented to be a significant mortality factor for the San Joaquin kit fox. Regionally, following a long period of decline, San Joaquin kit fox populations in the southern San Joaquin Valley may have stabilized at their current level (Berry et al. 1987).

### 3.2 OTHER COVERED SPECIES OF CONCERN

Besides the western burrowing owl, no other wildlife species of concern were identified on the project site (Bioenvironmental Associates, 1995; Pruett and Lawrence 1993). With water ponding on the site, it may be possible that bird species of special concern could be attracted to the site. Although, shallow ponded water is not anticipated to remain on the site once the lands have been terraced and planted, a series of actual ponds will be constructed on the west side of the site. Although migratory waterfowl may use this ponded effluent during the winter, new nesting or nesting attempts by waterfowl or shorebirds are anticipated once a combination of ponds and fields are established. No nesting waterfowl were observed on the site during the reconnaissance or were documented by the previously completed reports (Pruett and Lawrence 1993; Bio Environmental 1995); although killdeer and black-necked stilt often nest alongside canals and roadways in this region (Wolfe unpublished notes).

#### 3.2.1 Western Burrowing Owl

Numerous sightings of the western burrowing owl (*Athene cunicularia hypogea*), a small owl of open habitats which resides in burrows in the ground were noted during the surveys conducted in 1995 (BioEnvironmental Associates 1995). The adult feathers are barred and spotted. It may hunt day or night, and subsists mostly on insects and small mammals. Habitat loss and squirrel control is noted to be prime causes for its decline (Erlich, Dobkin and Wheye 1992). A number of active burrowing owl burrows were identified by BioEnvironmental Associates (1995) during transects they walked in preparation for their kangaroo rat trapping effort. These findings were similar to those found at the Paradise Lake site in Section 1, T32S, R28E, south of the project area (Wolfe 1991). Burrowing owls were also observed by MH Wolfe & Associates (1998) during the survey conducted for the kangaroo rat trapping on this site.

#### 4 EFFECTS OF THE PROPOSED ACTIONS ON THE COVERED SPECIES

##### 4.1 COVERED SPECIES

###### 4.1.1 Tipton Kangaroo Rat

During project construction, take of the Tipton kangaroo rat could not be avoided, as re-grading of the entire project site will be required to establish the project benches, terraces and ponds, resulting in the loss of about 19 acres of occupied Tipton kangaroo rat habitat. During the initial earth moving activities, Tipton kangaroo rats may be killed by being crushed or buried in their burrows. Disoriented and displaced individuals may die while dispersing or be subject to exposure or increased predation common around construction sites where earthmoving displaces and kills small mammals. Individuals fleeing across Wheeler Ridge Road may be run over by vehicles. Loss of habitat or forage may further result in the death of additional individuals.

Once the benches for the agricultural fields have been constructed, the potential exists during the life of the project that kangaroo rats could reoccupy the out-slopes of the property or fence lines and be affected by road and/or fence line maintenance, weed and rodent control activities or harvesting activities. Vehicles traveling to the development may also run over kangaroo rats in search of food or dispersing from adjacent fragmented habitat in the night. Improper use of rodenticide on the project area could result in take.

Adjacent properties appear to contain additional fragmented and disturbed Tipton kangaroo rat habitat as well. Ongoing activities at adjacent properties

likely result in an ongoing take and loss of habitat. Loss of the habitat on the project area represents a loss of an immigration site for individuals dispersing from adjacent habitat. Loss of habitat on the project area would impact the species as a cumulative loss of Tipton kangaroo rat habitat. However, the property represents fragmented and degraded habitat (BioEnvironmental Associates 1995). Compensation for the project has resulted in the guaranteed acquisition of habitat on a large contiguous wildlife refuge or planned preserve. The preservation of large contiguous areas of habitat is likely to help ensure the long-term continued existence of the species and its ability to move to new habitats.

#### 4.1.2 San Joaquin kit fox

Take of the San Joaquin kit fox is not likely during construction, as it does not occur on the site at this time. However, because it could range through the area, harassment could potentially occur. Consequently, the possibility should be addressed. Potential for take of the San Joaquin kit fox following construction would likely be less than during construction, unless they inhabit the agricultural fields. To our knowledge, fox have not been documented to den in actively cultivated areas; although, they do den in pipes and burrow in highly disturbed areas and in the midst of human activities such as on road sides. Kit fox may burrow in project roadsides, possibly the terraces, if they are not farmed, and pond banks berms located on the project site. They could persist in these areas following project construction, but if the coyote and wild dog populations remain high, it is not likely due to the observation of large numbers of dogs on the project.

## 4.2 OTHER COVERED SPECIES OF CONCERN

### 4.2.1 Western burrowing owl

Burrowing owls may occupy ground squirrel burrows adjacent to agricultural fields or along canal and road ditches and berms. They are also known to inhabit pipes and culverts. Consequently, although they use the site now, they also may use the site following the completion of construction. Rodenticide use, grading, blading or disking may adversely affect any remaining owls.

## 5 PLANNED AVOIDANCE, MINIMIZATION AND MITIGATION MEASURES

Acquisition of compensation acreage for this project is the primary mitigation measure planned and implemented for this project. To assist conservation and enhancement for the Tipton kangaroo rat, the LPUD already has acquired 57 acres of compensation credits, which have been designated on the Coles Levee Ecosystem Preserve. In addition, the compensation

acreage at the Coles Levee Ecosystem Preserve supports all the other listed species, covered species, and sympatric species that may be affected by this project.

Specific take avoidance and mitigation measures described in Section 5.4 will be implemented to minimize take and associated potential adverse impacts of the construction to listed and covered species. The compensation property is one of several refuges established and necessary to help ensure the continued existence of species of concern in the San Joaquin Valley. The Implementing Agreement among the USFWS, CDFG and LPUD (Appendix 10.5) and CDFG Incidental Take Permit, therein incorporated by reference, describe the responsibilities of LPUD with respect to the implementation of the compensation and mitigation measures.

## 5.1 FIVE POINT POLICY

### 5.1.1 Public Participation

In compliance with United States Fish and Wildlife Service policy, the public will have a sixty - day period to review, analyze, and critique the aspects of this habitat conservation plan as they are being developed. In addition, the United States Fish and Wildlife Service will also seek to announce the availability of habitat conservation plans in local newspapers and in electronic format.

### 5.1.2 Biological Goals and Objectives

The principle biological goal of this HCP is to obtain alternative and suitable long-term off-site habitat for the Tipton kangaroo rat on the project site. This goal is consistent with the Recovery Plan for Upland Species of the San Joaquin Valley (USFWS 1997).

Specific biological goals are to:

- a) Obtain suitable long-term habitat that will be enhanced by the management.
- b) Minimize the level of incidental take of covered and related species within the project site through take avoidance measures.
- c) Educate the staff and contractors that work on the project site.

The overall biological objective by which the principle goal will be attained is to protect a substantial proportion of remaining high quality lands in a preserve. The Coles Levee Ecological Preserve is being used.

The Preserve will also protect, and in some cases, improve habitat quality necessary for the long term continued existence of the species and will provide contiguous occupied habitat for the movement of the wildlife.

Specific biological objectives are to:

- a) Provide the means by which habitat disturbance can be mitigated either through conservation credits or direct payment for acquisition and management in perpetuity of an off-site parcel of prime Tipton kangaroo rat habitat through the Coles Levee Ecological Preserve.
- b) Minimize the level of incidental take of covered species within the project site area through specific take avoidance and mitigation measures that are detailed in Section 5.3 and 5.4.
- c) Develop an employee training program that shall be conducted by a qualified biologist prior to construction to educate all workers on identifying threatened and endangered species along with the mitigation measures and the reporting requirements of section 10(a) permit.

### 5.1.3 Monitoring

Monitoring of the project site covered by this HCP will be performed by a qualified biologist. This biologist will monitor specific duties that are spelled out in the minimization and mitigation section of this report (5.4).

The objectives of monitoring program will be to monitor the:

- a) Amount of incidental take of the Tipton kangaroo rat and natural lands developed;
- b) Amount of incidental take in the form of harassment of the San Joaquin kit fox;
- c) Compliance and effectiveness of the take and mitigation measures; and
- d) Success of the environmental education program.

The information collected will also be the basis for the monitoring for effectiveness of the mitigation program as a whole. A review of the effectiveness of mitigation

measures will in turn indicate where and when changes or adaptations are needed to remain in compliance or may indicate how to improve the mitigation approaches.

#### 5.1.4 Adaptive Management

The HCP describes an approach for ensuring that mitigation is provided for the activities for the discussed species on the project site. For this an actual adaptive management plan in the fullest sense of the meaning is not entirely appropriate as the property is to be completely developed. There will however, be a process of continually improving management policies and practices for the compensation acreage purchased at the Coles Levee Ecological Preserve, which was used as a compensatory site.

LPUD has developed mitigation measures to reduce the potential of take during the construction and operation of the project and these measures will be evaluated through a monitoring process under the oversight of the DFG.

a) Coles Levee Ecological Preserve

The overall goal of adaptive management of the Coles Levee Ecological Preserve is to ensure the protection of natural lands for the covered designated species.

Management plans have been prepared for Coles Levee Ecological Preserve that was established to offset natural land disturbance. Those plans have been prepared by the entity managing the preserve. Consequently, it will be the responsibility of the land management entity to prepare annual management plans and to adapt and revise those plans as needed in coordination with the agencies.

b) Lamont Public Utility District effluent disposal site

The implementation of the mitigation measures on the LPUD project site will be monitored for effectiveness and compliance. The effectiveness of the educational and training programs and the level of compliance or cause of noncompliance of the mitigation measures will be submitted in a report to Service no later than February 28 of each year. If noncompliance is determined, the cause of the noncompliance will be reviewed and adjustments made accordingly to remedy the situation. If the implementation of the take avoidance and mitigation measures is not effective, or part fails, the measures will be revised and monitored to determine if the inadequacies have been corrected.

### 5.1.5 Permit Duration

The length of the permit term being requested is for 50 years. This is the viable operational life of an effluent disposal site for the Town of Lamont. During the permitting period it is likely, it will be necessary to upgrade and enlarge the facility as needs arise. If the Recovery Plan is effective, kit fox populations should increase over time, creating a continued need for take protection.

## 5.2 COMPENSATION

LPUD has already acquired and transferred 57 acres of compensation acreage to the CDFG for the 19 acres occupied habitat that was determined as described in section 3.1.1. LPUD also provided an endowment sum of \$375 per acre or \$21,375 (Twenty-one thousand three hundred seventy-five dollars) for 57 acres and also provided CDFG \$100 per acre or \$5,700 (Fifty-seven hundred dollars) to fence and provide clean up of 57 acres. The compensation credits were obtained and the endowment and management funds provided to CDFG prior to completion of the permit documents.

## 5.3 TAKE AVOIDANCE

In accordance with CDFG and USFWS recommendations, LPUD shall conduct preconstruction surveys and provide the agencies with a minimum 30 days notice prior to construction so that the agencies can decide the disposition of the Tipton kangaroo rats. Alternatives include that they may be live-trapped prior to earth moving and either relocated or salvaged for scientific study. An environmental preactivity survey was conducted of the areas that were not already inundated. Flooding was wide spread and the soils were saturated in most areas. This survey was completed, but only two active kangaroo rat burrows were identified, and they contained the only scat observed on the site.

In the winter of 1998, extensive flooding in the Lamont area spurred the US Fish and Wildlife Service and California Department of Fish and Game to request the removal trapping of the Tipton kangaroo rats on site. Trapping was conducted for eight days and 14 individuals were removed and held. This number of individuals for only two active burrows was unusual. The Tipton kangaroo rats were held by Dr. David Germano until direction was obtained from the USFWS to relocate them at a site on the California State University of Bakersfield campus where they would be studied (Appendix 10.3).

If determined to be necessary, re-trapping will be conducted until no individuals are trapped for two consecutive nights. If it still appears active burrows are present, these

burrows will be excavated by hand and the animals captured for disposition as requested by the CDFG and US Fish and Wildlife Service.

#### 5.4 MINIMIZATION AND MITIGATION

To minimize potential take during the project construction and operation, the LPUD shall implement the following mitigation measures.

- 1) No more than 60 days after completion of construction, applicant shall prepare and deliver to USFWS and CDFG a construction compliance report. This report will include documentation of the implementation of mitigation measures, and incidents of non-compliance, all available information about project-related take of species named in the Section 2081(b) Permit, and an evaluation of the effectiveness of the mitigation measures in minimizing and mitigating impacts on the species.
- 2) Applicant shall submit, no later than February 28 of each year, a status report on implementation of mitigation measures and all available information about project-related take during the preceding year. Reports shall include a copy of the table from the Mitigation Monitoring and Reporting Program of the Section 2081 permit with notes indicating the status of each mitigation measure.
- 3) Applicant shall fully cooperate with the Department in its efforts to verify compliance with or effectiveness of mitigation measures.
- 4) A specific individual shall be designated in writing as contact representative between LPUD, CDFG and USFWS to oversee compliance with the Biological Opinion and the Conservation Plan.
- 5) Applicant shall hire a qualified biologist approved by the USFWS and CDFG to perform specific monitoring duties and other biological work as required below.
- 6) Prior to any construction, a qualified biologist shall conduct an environmental pre-activity survey of the project site no more than 30 days prior to construction to assess endangered species presence and distribution.
- 7) If Tipton kangaroo rats are present, applicant shall provide an estimation of numbers to the Service and the Department and the two agencies will determine whether Tipton kangaroo rats are to be trapped, salvaged, or relocated and will provide their direction to LPUD in writing.

- 8) In addition, all potential kangaroo rat burrows shall be hand excavated to ensure their removal.
- 9) Any potential San Joaquin kit fox dens will be tracked in accordance with standard agency guidelines to determine if they are active. If they are inactive, the dens will be closed. If they are active, the resource Agencies will be contacted to determine the appropriate course of action.
- 10) Project boundaries, dens/burrows or buffer zones to be avoided during construction shall be flagged and posted as necessary to prevent straying of vehicles and equipment into adjacent areas where take could occur. The applicant shall consult with a qualified biologist to determine the necessity and extent of flagging and posting.
- 11) All construction equipment, staging areas, materials and personnel shall be restricted to the project site or previously disturbed off-site areas that are not habitat for listed species.
- 12) A 25 mile-per-hour or less speed limit shall be enforced on the project site.
- 13) All garbage and foodstuffs shall be contained and removed from the site regularly to prevent attraction of predators, such as dogs, coyotes or San Joaquin kit fox, to the project area where they may injure or increase harassment of the Tipton kangaroo rat, or result in the potential for incidental take of the San Joaquin kit fox.
- 14) Employees or contractors shall be prohibited from using firearms on, or bringing dogs or other pets to the project site, unless confined or leashed.
- 15) The applicant shall consult with the USFWS and DFG prior to application of any rodenticide on the project area during construction and operation of the proposed facility. Rodenticide use shall be in accordance with Federal Insecticide, Fungicide, Rodenticide Act (FIFRA) requirements being implemented under FIFRA Biological Opinion through the Kern County Agricultural Commissioner's office.
- 16) Any spills of petroleum products or other chemicals, which may represent a hazard to wildlife, shall be cleaned up promptly and in accordance with appropriate laws and regulations.
- 17) All steep-walled pipeline and utility trenches shall be inspected in the mornings to prevent entrapment of kangaroo rats and/or San Joaquin kit fox, or shall be provided escape ramps as determined by a qualified biologist. All

trenches shall be inspected prior to back-filling and a qualified biologist shall remove any entrapped wildlife or allow animals to escape voluntarily prior to resuming construction.

- 18) All pipe, culverts, or similar structures on-site with a diameter of 2-24 inches shall be inspected for endangered species prior to moving or welding, and shall be capped or otherwise covered if sections cannot be inspected to prevent the entry and potential loss of wildlife. If an endangered species is discovered inside a pipe, the animal shall be safely removed by a qualified biologist. The pipe segment shall not be moved until the animal has escaped, or the pipe segment shall be moved a single time out of the path of construction. Alternatively, stored pipe may be kept capped at all times until used during construction.
- 19) To minimize disturbance of adjacent wildlife and the potential for increased night-time predation, the facility lighting shall be directed toward the facility and shielded in a manner as to minimize artificial lighting of the listed species on adjacent agricultural lands. Landscaping will also be of a type to reduce or shield light from adjacent lands.
- 20) Any dead, sick or injured threatened or endangered species shall be reported within 48 hours to the Sacramento office of the USFWS and the Fresno office of the CDFG.
- 21) If the incidental take of the Tipton kangaroo rat occurs during construction, the causative action shall cease immediately, and the USFWS and CDFG shall be contacted immediately for further guidance. Consultation may be reopened as necessary.
- 22) The potential for kill and harm of San Joaquin kit fox is very low due to the amount of activity in the surrounding area (Newman 2002). While modification habitat to the existing project site would have an adverse effect to the San Joaquin kit foxes, it would not significantly impair breeding, feeding, or sheltering. If an incidental take of the San Joaquin kit fox occurs during construction the causative action shall cease immediately, and the USFWS and CDFG shall be contacted immediately for further guidance. Consultation may be reopened as necessary.
- 23) An employee training program shall be conducted by a qualified biologist prior to construction to educate all workers on identifying threatened and endangered species along with the mitigation measures and the reporting requirements of the Section 10(a) permit.

- 24) Applicant shall include in all construction contracts a requirement that the contractor comply with the mitigation requirements of USFWS and DFG. If compliance with this requirement is not possible, LPUD shall explain in writing to the USFWS and CDFG why this measure can not be fully implemented.
- 25) A qualified biologist shall be present on site during the initial land clearing to insure implementation of the mitigation measures.
- 26) The applicant shall provide the DFG and USFWS access to the project site during construction, mitigation and monitoring to ascertain project progress and compliance.
- 27) The applicant has permanently protected 57 acres of suitable habitat for the listed species in the Coles Levee Ecological Preserve, easement established by a 1992 agreement between Arco Western Energy and California Department of Fish and Game (Appendix 10.5 – Notice of Compensation Agreement). These Habitat Management lands are permanently protected by a conservation easement approved by USFWS and CDFG. The applicant has also provided CDFG \$27,075.00 to establish an endowment to fund management of the conservation lands in perpetuity.
- 28) The applicant may proceed with ground-disturbing project activities before fully performing the HM Lands requirement only if applicant first secures its performance by establishing a pledged savings account, irrevocable letter of credit or other trust account acceptable to DFG. The security shall be in an amount that the DFG agrees is sufficient to fund the HM Lands and endowment requirements.

## 6 FUNDING MECHANISMS FOR MITIGATION MEASURES

The LPUD is a small local utility district. Its fiscal responsibility is based upon revenues from about 3,900 residences. The cost of this project ultimately will be assessed to the property owners which are served by the LPUD. The LPUD has an arrangement with the Community Recycling and Resource Recovery Inc. (CR&RR) to operate and manage the effluent disposal site. The long-term economic backing for completion of this project and mitigation during site construction will come from the CR&RR. LPUD has purchased compensation acreage credits in the amount of 57 acres, for a total cost of \$34,200.00 (Thirty-four thousand two hundred dollars). Purchase of the compensation credits was made from ARCO at the Coles Levee Ecosystem Preserve (Preserve) in advance of completion of the permits. LPUD also provided the sum of \$27,075.00 (Twenty-seven thousand seventy-five dollars) to CDFG to ensure for the fencing and a long-term endowment for management of the compensation lands as detailed in Section 5.2 of this Plan. This amount is based upon

a cost of \$100/acre for fencing and enhancement and \$375/acre for the management endowment, standard CDFG management charges.

The Preserve has areas of very similar habitat to the proposed project site and supports all the listed and covered plant and wildlife species found on the project site. The Preserve also has, particularly on the southern portion, numerous alkali scalds similar, to those found on the project site.

## 7 CHANGING CONDITIONS AND CIRCUMSTANCES

### 7.1 “NO SURPRISES” POLICY

“No surprises” encompasses a policy of commitment by the DOI and Service that they will honor their agreements under an approved HCP for which the permittee is implementing the HCP terms and conditions in good faith.

This policy protects the permittee against the chance of additional conditions compensation, funds or mitigation except under unforeseen circumstances. Although the permittee may voluntarily agree to additional measures, if unforeseen circumstances do require additional measures, that obligation will not rest with the HCP permittee.

### 7.2 CHANGED CIRCUMSTANCES, UNFORESEEN CIRCUMSTANCES AND HABITAT CONSERVATION PLAN ASSURANCES

Section 10 regulations [50 CFR 17.22 (b)(2)(iii)] require that an HCP specify the procedures to be used for dealing with unforeseen circumstances that may arise during the implementation of the HCP. In addition, the Habitat Conservation Plan Assurances (“No Surprises”) Rule [50 CFR 17.21(b)(5)-(6) and 17.22(b)(5)-(6); 63 F.R. 8859] defines “unforeseen circumstances” and “changed circumstances” and describes the obligations of the permittee and the USFWS. No Changed or Unforeseen Circumstances will be described within this proposed HCP because the project impacts are being mitigated by the purchase of land credits in a USFWS-approved off site preserve prior to a permit decision from the USFWS. The preserve is an operating conservation bank with its own approved plan for management and changed circumstances.

Consistent with the final rule regarding Habitat Conservation Plan assurances, in the event of unforeseen circumstances affecting species adequately covered by this HCP, applicant will not be required to provide the commitment of additional lands, additional financial compensation, or additional restrictions on lands or other natural resources otherwise available for development or use without the consent of the permittee. However, applicant will cooperate with the Service with regard to

adaptive management and/or monitoring of the project site, as appropriate, in the event of unforeseen circumstances.

Should a species that is not covered in this HCP be listed under the Federal ESA during the term of the Section 10 permit, and the newly-listed species be affected by activities covered by the HCP, the Section 10 permit will be reevaluated and the HCP-covered activities may be modified, as necessary, to ensure that the activities covered under the HCP are not likely to jeopardize or result in the take of the newly-listed species, or adversely modify any critical habitat that is designated for the species.

The permittee shall implement the modifications to the HCP-covered activities identified by the Service to avoid likely jeopardy to the species or any adverse modifications to critical habitat, and/or to avoid take of the newly-listed species. The permittee shall continue to implement such modifications until such time as the permittee has applied for and the Service has approved an application to amend the Section 10 permit, in accordance with applicable statutory and regulatory requirements. Such measures are necessary in order to cover activities prohibited by Section 9 of the ESA, until the Service notifies the permittee in writing that the modifications to the HCP covered activities are no longer required to avoid the likelihood of jeopardy to the newly-listed species (or adverse modifications to any critical habitat that might be designated). The applicant recognizes that changes to avoidance and minimization measures may be warranted in the future pursuant to the implementation of adaptive management.

### 7.3 MONITORING

Monitoring of the project site covered by this HCP will be performed by a qualified biologist. This biologist will monitor specific duties that are spelled out in the minimization and mitigation section of this report (5.4).

The objectives of monitoring program will be to monitor the:

- a) Amount of incidental take of the Tipton kangaroo rat and natural lands developed;
- b) Amount of incidental take in the form of harassment of the San Joaquin kit fox;
- c) Compliance and effectiveness of the take and mitigation measures; and
- d) Success of the environmental education program.

The information collected will also be the basis for the monitoring for effectiveness of the mitigation program as a whole. A review of the effectiveness of mitigation measures will in turn indicate where and when changes or adaptations are needed to remain in compliance or may indicate how to improve the mitigation approaches.

Annual monitoring reports shall be provided regarding implementation of the mitigation measures on the project area. These reports will be due to the Service and CDFG within 60 days following the end of the calendar year.

## 8 ALTERNATIVES

Alternatives to the proposed action are few. A summary of the analysis of these alternatives and their impacts follows. Only four alternatives were considered: (1) the Proposed (Preferred) Action; (2) Construction of a complete effluent recycling plant with zero discharge; (3) effluent disposal on another site and (4) No Project.

### 8.1 THE PROPOSED (PREFERRED) ACTION

The Proposed Action is the expansion of the effluent discharge area onto 160 acres in Section 25, T31S, R28E, under the terms of a Section 10(a) permit of the Federal Endangered Species Act. The incidental take permit would authorize the development of 19 acres of known habitat of the Tipton kangaroo rat and 76 acres of San Joaquin kit fox and incidental take in the form of harassment of the endangered Tipton kangaroo rat and San Joaquin kit fox and other covered species on the 160 acres during the construction and operation the proposed effluent spreading development.

The primary compensation feature of the proposed project is the provision for acquisition and long-term management of an off-site parcel of prime Tipton kangaroo rat habitat encompassing 57 acres. This Conservation Plan details the mitigation, compensation measures and funding commitments accomplish on the project. In addition, LPUD is concurrently entering into an implementation agreement with the USFWS and CDFG and an incidental take permit with the CDFG alone, confirming implementation of the mitigation and compensation measures (Appendices 10.4 and 10.5).

The LPUD must accomplish this project by the most cost effective means possible as it has a very small economic base upon which to draw. Purchase and ensuring the continued protected management of Tipton kangaroo rat habitat can be anticipated to help enhance the long-term survival of the Tipton kangaroo rat over time. Although some losses may occur at the proposed project site, no funds have been available to manage and protect the species occupying the property. This has resulted in long-

term and widespread degradation of the habitat and likely potential losses of Tipton kangaroo rats.

## 8.2 ZERO DISCHARGE SEWAGE RECYCLING TREATMENT PLANT

The technology is available to construct a sewage recycling plant with zero discharge. Such a plant would create the ideal situation and also would occupy much less land than a plant requiring a spreading ground in accordance with state and federal regulations. However, it is not an economically feasible alternative for the small town of Lamont. Such a plant would cost millions of dollars, and could not be supported by the smaller agricultural population base of this region.

## 8.3 EFFLUENT DISPOSAL ON ANOTHER SITE

The LPUD had specifically purchased this property and used it in conjunction with the CR&RRI activities on the adjacent site. Although another site could be purchased, none are available within the close proximity to the existing ponds that are not in dairy or agriculture. Conservation of prime agricultural lands in Kern County is also a desirable activity. This site has alkali-affected soils which would require modification prior to implementation of either new crops or vineyards and has already been degraded in various ways.

## 8.4 NO ACTION

If this project is not implemented, the LPUD would be in continued violation of California Regional Water Quality Control Board (Central Valley Region) requirements. In the winter of 1998, they received additional violations and a Cease and Desist Order. Without new ponds and a discharge spreading area, the treatment ponds would overflow repeatedly and a public nuisance or health hazard could occur. In addition, effluent may continue to damage habitat and continue to flow off the proposed site onto adjacent lands. This is not a viable alternative for the LPUD from human health, habitat or legal perspectives.

Securing and enhancing compensation acreage also is part of a regional habitat conservation plan being developed for the Kern County Valley Floor to manage and help ensure the long-term continued existence of rare species in the Southern San Joaquin Valley. Large contiguous parcels of habitat which allow for the perpetuation of whole ecosystems are accepted as being necessary for long term conservation. Without projects such as this one that are proposed for degraded and fragmented, albeit occupied habitat, securing of prime habitat in large contiguous parcels to ensure long term survival of endangered species. Relocation of some of the trapped Tipton kangaroo rats to a new site, with concurrence of the agencies, could also help the resource by evaluating the feasibility of that as a measure to help ensure the long-

term survival of the species and its restoration to sites where populations may have been extirpated.

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## 10 APPENDICES

## Appendix 10.1 INDIVIDUALS INVOLVED IN THE PLAN PREPARATION

The following individuals and agencies were consulted during the development and preparation of the Conservation Plan:

### US Fish and Wildlife Service

Heather Bell  
Peter Cross  
Susan Jones  
James Newman  
Laura Valoppi

### California Department of Fish and Game, Region IV

Donna Daniels  
Dale Mitchell  
Dr. Jeff Single

### Community Recycling and Resource Recovery Inc.

Dave Baldwin

### Lamont Public Utility District

Gilbert Alaniz  
Gary Barnett  
Karen Honer  
Michael S. Lane  
Clinton Stewart  
Steve Tabor

### Regional Water Quality Control Board

Lonnie M. Wass

### M.H. Wolfe and Associates Environmental Consulting Inc.

Marcia H. Wolfe  
Dr. David Germano  
Deborah Jackson  
Craig Perkins  
William Vanherweg

### Boyle Engineering Corporation

Kim Domingo

### Other individuals contacted

Dr. Patrick Kelly  
Dr. Ted Murphy & California State University Bakersfield  
Dr. Daniel Williams

Appendix 10.2 BIOTA REPORT

GEORGE E. LAWRENCE  
19669 Banducci Road  
Tehachapi, CA 93561  
(805) 822-0214

PAUL E. PRUETT  
3616 View Street  
Bakersfield, CA 93306  
(805) 872-5662

BIOTA REPORT  
LAMONT PUBLIC UTILITIES DISTRICT PROJECT, BEAR MT BOULEVARD  
160 ACRES±, SE PORTION SEC 25, T31S, R28E, MDBM.

SUMMARY AND CONCLUSIONS

This project consists of about 160 acres approximately three miles south of Lamont on Bear Mountain Boulevard. The project site is degraded native habitat that has been heavily grazed for over 25 years and is currently so used (Figs 1, 2, 4-6).

One sensitive plant, *Eriastrum hooveri*, Hoover's Eriastrum, a federally threatened plant is listed in the Natural Diversity Data Base as occurring on the site. Evidence of use in past years by kit fox and current use by probable kangaroo rats was found during the surveys.

Additional plant and animal surveys following the state and federal guidelines would be required to determine if sensitive plants or animals listed by government agencies are still present on the site.

We therefore conclude that development of this project might have adverse impact on state and federally listed sensitive plants or animals and would result in the loss of some badly degraded native habitat.

PROJECT SITE

The project site is approximately 160 acres located south of Bear Mountain Boulevard and west of Wheeler Ridge Road in south central Kern County, about three miles south of Lamont. (See Figures 1 & 2). It is the southeast quarter of Section 25, T31S, R28E, MDBM, in Kern County, California.

Figures 4 through 6 are photographs showing the project site.

Bear Mountain Boulevard, State Route #223, is a half mile north and Wheeler Ridge Road, State Route # 184, forms the eastern border of the project site. The project site is bounded on the west by irrigated pasture and the south by grape vineyards.

The northern border is cultivated farmland that was in cotton last year.

The original native habitat of the area was probably Valley Saltbush Scrub, Element Code #36220 (Holland, 1986) and may have contained kangaroo rat, kit fox, blunt-nosed leopard lizard and perhaps Hoover's Eriastrum.

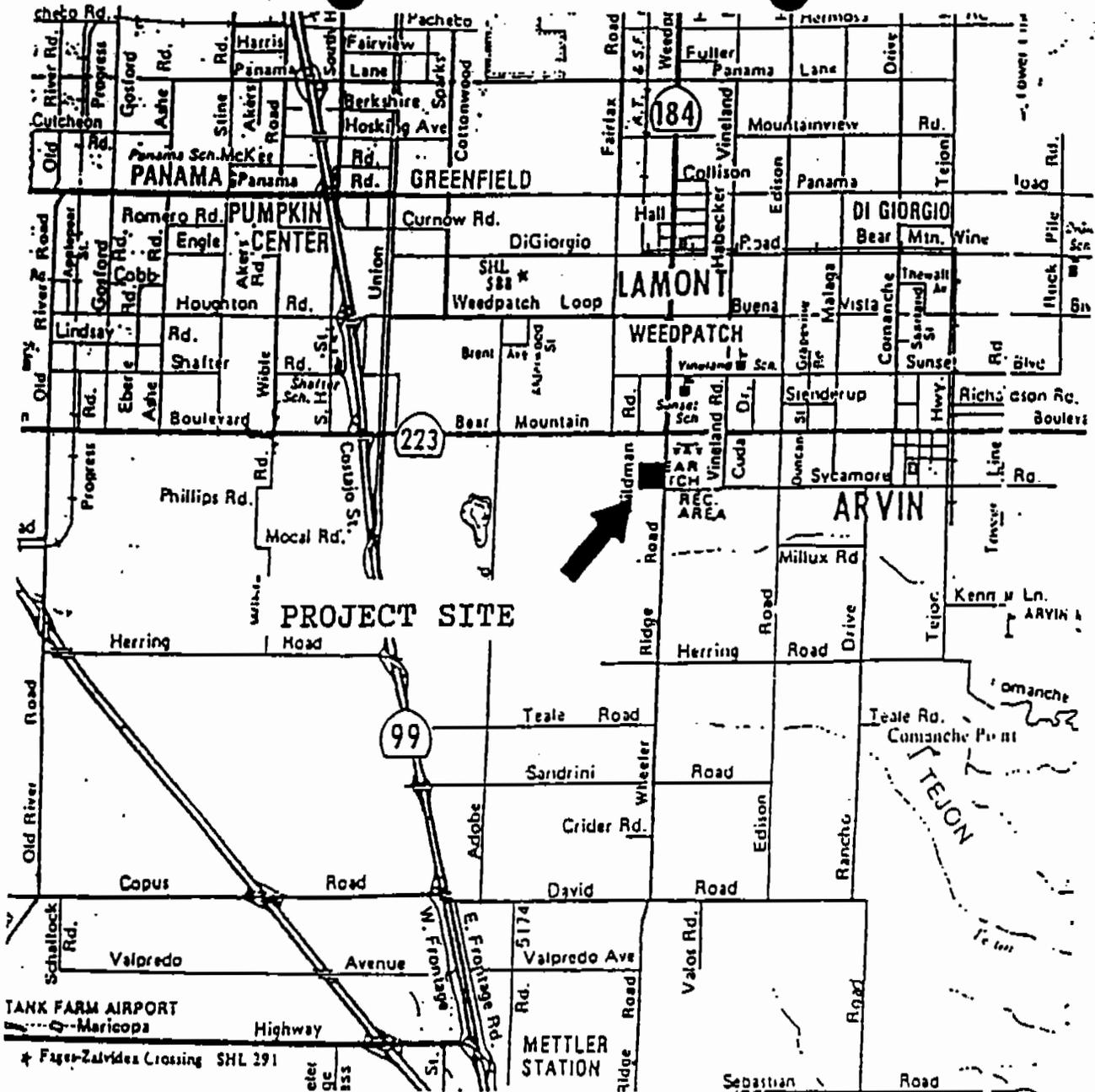


FIGURE 2: PROJECT MAP

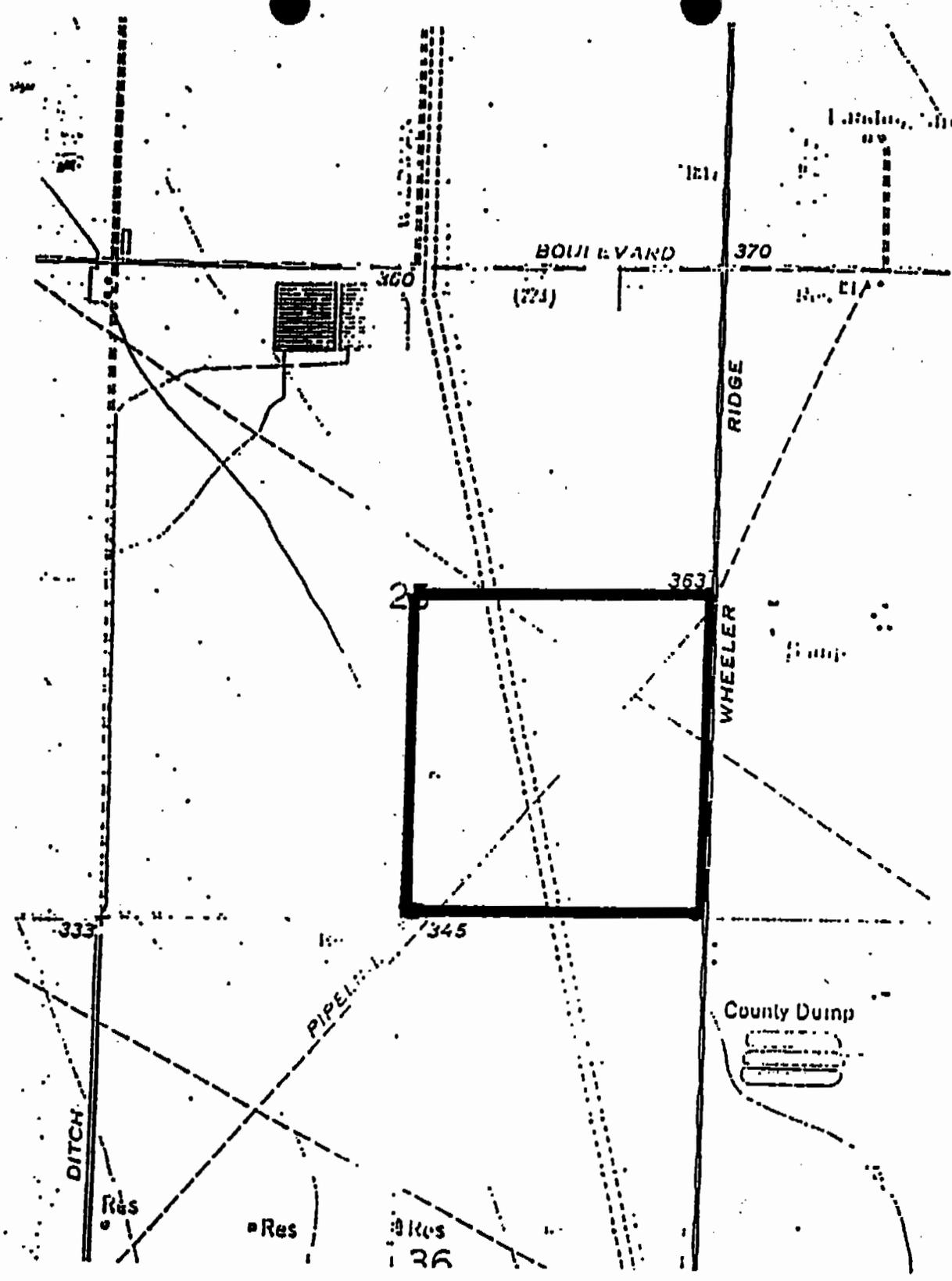


TABLE 1, PLANT LIST LAMONT PUD, SE 16 ACRES

SCIENTIFIC NAME	COMMON NAME	SOURCE
<i>Amsinckia intermedia</i>	Common Fiddleneck	Nat
<i>Atriplex polycarpa</i>	Common Saltbush	Nat
<i>Capsella bursa-pastoris</i>	Shepherd's Purse	Eur
<i>Conyza canadensis</i>	Mare's Tail, Horseweed	Nat
<i>Erodium cicutarium</i>	Red-Stem Filaree	Eur
<i>Haplopappus acradenius bracteosus</i>	Alkali Goldenbush	Nat
<i>Hordeum leporinum</i>	Farmers' Foxtail	Eur
<i>Lasthenia chrysostoma</i>	Goldfields	Nat
<i>Lepidium nitidum</i>	Common Peppergrass	Nat
<i>Orothocarpus purpurascens</i>	Owl-Clover	Nat
<i>Plagiobothrys canescens</i>	Valley Popcorn Flower	Nat
<i>Salsola australis</i>	Russian Thistle/Tumbleweed	Eur
<i>Senscio vulgaris</i>	Groundsel	Eur
<i>Sisymbrium irio</i>	London Rocket	Eur
<i>Suaeda fruticosa</i>	Alkali Blite	Nat

TABLE 2. ANIMAL SPECIES LPUD, 160 ACRES

SCIENTIFIC NAME	COMMON NAME	EVIDENCE
<b>MAMMALS</b>		
<i>Bos taurus</i>	Domestic Cattle	Sighted
<i>Canis latrans</i>	Coyote	Scat
<i>C. familiaris</i>	Domestic Dog	Scat
<i>Citellus beecheyi</i>	Beechey Ground Squirrel	Sighted
<i>Dipodomys sp.</i>	Kangaroo Rat	Burrows
<i>Lepus Californicus</i>	Blacktail Jackrabbit	Sighted
<i>Peromyscus maniculatus</i>	Deer Mouse	Burrows
<i>Sylvilagus auduboni</i>	Cottontail Rabbit	Scat
<i>Thomomys bottae</i>	Pocket Gopher	Burrow
<i>Vulpes macrotis mutica</i>	San Joaquin Kit Fox	Scat/Old Dens
<b>BIRDS</b>		
<i>Callipepla californica</i>	California Quail	Sighted
<i>Carpodacus mexicanus</i>	House Finch	Sighted
<i>C. vociferus</i>	Killdeer	Sighted
<i>Corvus corax</i>	Common Raven	Sighted
<i>Eremophila alpestris</i>	Horned Lark	Sighted
<i>Euphagus cyanocephalus</i>	Brewer's Blackbird	Sighted
<i>Lanius excubitor</i>	Northern Shrike	Sighted
<i>Mimus polyglottos</i>	Mockingbird	Sighted
<i>Passer domesticus</i>	House Sparrow	Sighted
<i>Sturnella neglecta</i>	Western Meadowlark	Sighted
<i>Zenaida macroura</i>	Mourning Dove	Sighted

## BIOTIC INVENTORY METHODS

The entire project was carefully inspected on March 1 and 5, 1993 by qualified biologists. The perimeters were walked, the entire site criss-crossed, and selected habitats inspected.

Field notes were taken to record habitat features, plants, and animals observed during the survey. Indirect evidence including tracks, scat, and burrows was used to establish which species of animals use the project site. A photographic record was made of the project.

## BIOTIC INVENTORY RESULTS

The project site is currently grazed and has been for over 25 years. The project site has been very heavily grazed over the past years and is severely degraded native habitat, Valley Saltbush Scrub, element code # 36220 (Holland, 1986) (Figs. 4-7).

A complete listing of plants found on the property is found in Table 1. Nine of the 15 plants found on the project site are introduced species.

Although no evidence of any sensitive plant species was found on the property during this preliminary survey, D. Taylor (1986) reports numerous colonies of *Erisastrum hooverii*.

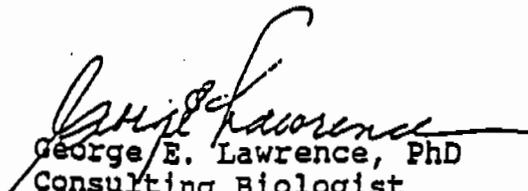
A complete listing of the animals found on the project site is contained in Table 2. Ten mammals were identified and 11 birds were sighted and identified.

Old kit fox scat was found on the site. Old probable kit fox dens were found on the site. Small mammal holes, some probably kangaroo rat burrows, were found on the site.

## CONCLUSIONS

Dr. Lawrence and Mr. Pruett agree that it is possible that sensitive plants or animals listed by either state or federal agencies may exist on the project site and could be adversely impacted by development of the project.

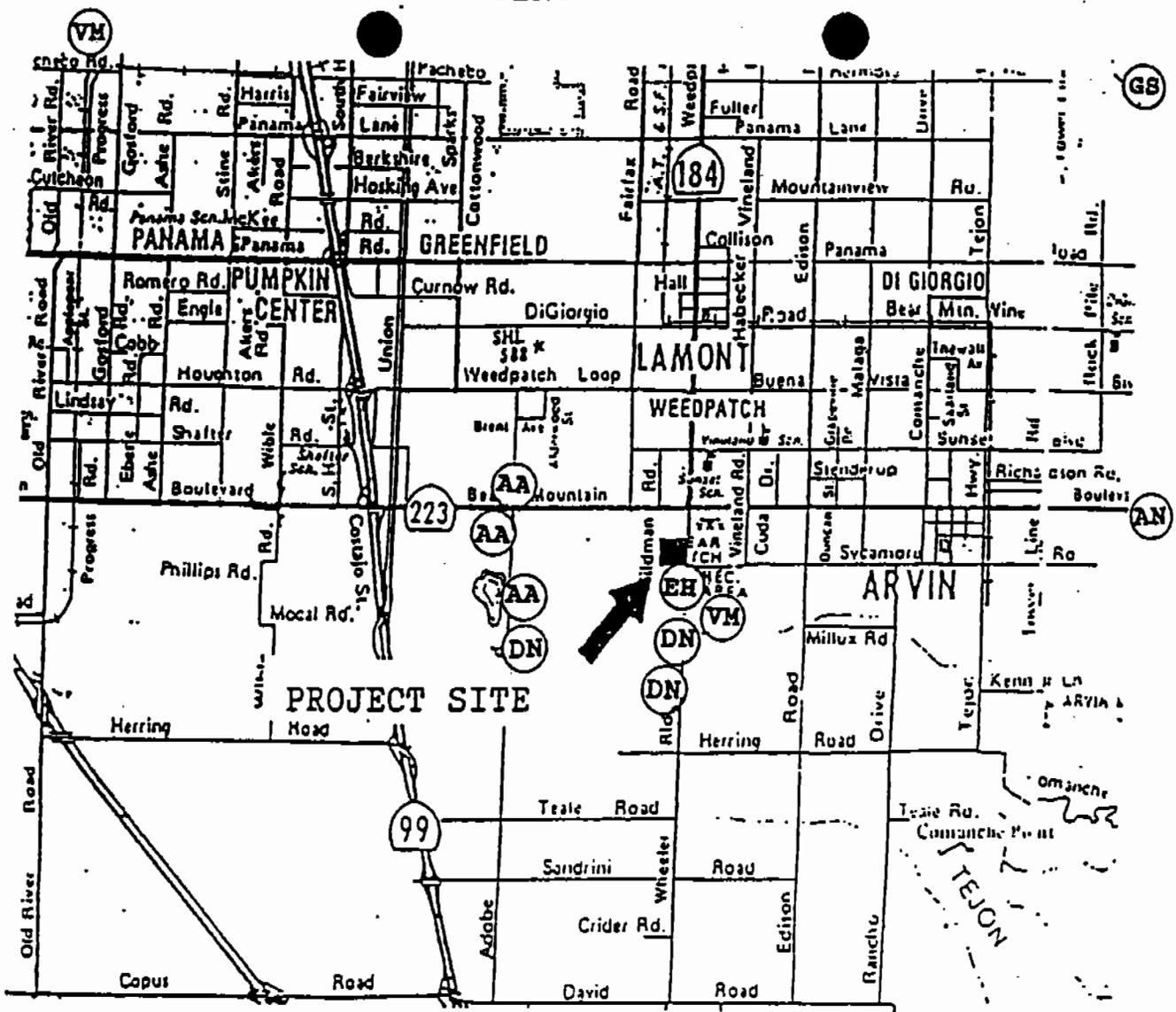
Some badly degraded native habitat will be destroyed if the project is developed.

  
George E. Lawrence, PhD  
Consulting Biologist

8 March, 1993

  
Paul E. Pruett, MS  
Consulting Biologist

8 March, 1993



Distribution of sensitive species in the vicinity of the proposed project. Sources: NDBB Report, Weedpatch Quadrangle dtd 4 Mar 93; scientific literature; and personal knowledge.

**ANIMALS**

- AN *Ammospermophilus nelsoni*  
San Joaquin Antelope Squirrel
- DN *Dipodomys nitratoides nitratoides*  
Tipton Kangaroo Rat
- GS *Gambelia silus*  
Blunt-nosed Leopard Lizard
- VM *Vulpes macrotis mutica*  
San Joaquin Kit Fox

**PLANTS**

- AA *Atriplex tularensis*  
Bakersfield Saltbush
- EH *Eriastrum Hooveri*  
Hoover's Eriastrum

**TABLE 3. SENSITIVE SPECIES KNOWN TO OCCUR  
IN VICINITY LAMONT PUBLIC UTILITIES DISTRICT PROJECT**

The following are lists of sensitive plants and animals known to occur in the vicinity of the project site, Section 25, T31S, R28E, MDBM. The lists are from the NDDB Report, Weedpatch Quadrangle, dated 4 March, 1993, scientific literature, and personal knowledge of Pruett, Lawrence & Associates staff members.

<b>SENSITIVE PLANTS</b>	<b>COMMON NAME</b>	<b>FED/CA LEGAL STATUS</b>
<i>Atriplex tularensis</i>	Bakersfield Saltbush	Cat 2/Endangered
<i>Eriastrum hooveri</i>	Hoover's Eriastrum	Threatened/None
<b>SENSITIVE ANIMALS</b>	<b>COMMON NAME</b>	<b>FED/CA LEGAL STATUS</b>
<i>Ammospermophilus nelsoni</i>	San Joaquin Antelope Squirrel	Cat 2/Threatened
<i>Dipodomys nitratoides nitratoides</i>	Tipton Kangaroo Rat	Endangered/Endangered
<i>Gambelia silus</i>	Blunt-Nosed Leopard Lizard	Endangered/Endangered
<i>Vulpes macrotis mutica</i>	San Joaquin Kit Fox	Endangered/Threatened

**TABLE 4. HABITATS AND FLOWERING TIMES (MUNZ AND KECK 1973)**

<b>SCIENTIFIC NAME</b>	<b>FLOWERING</b>	<b>HABITAT</b>
<i>Atriplex tularensis</i>	June-Oct	Alkali plains
<i>Eriastrum hooveri</i>	Apr-Jun	<500 ft, rolling plains

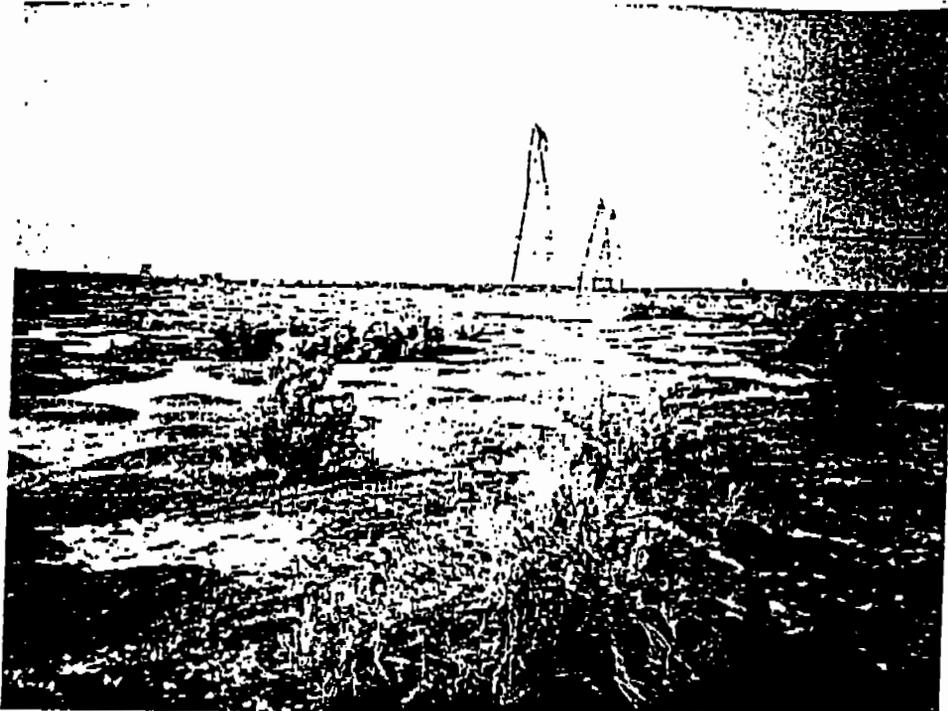


Figure 4. Photograph of project site from the middle of the western border looking east showing typical vegetation and transmission lines (5Mar93).

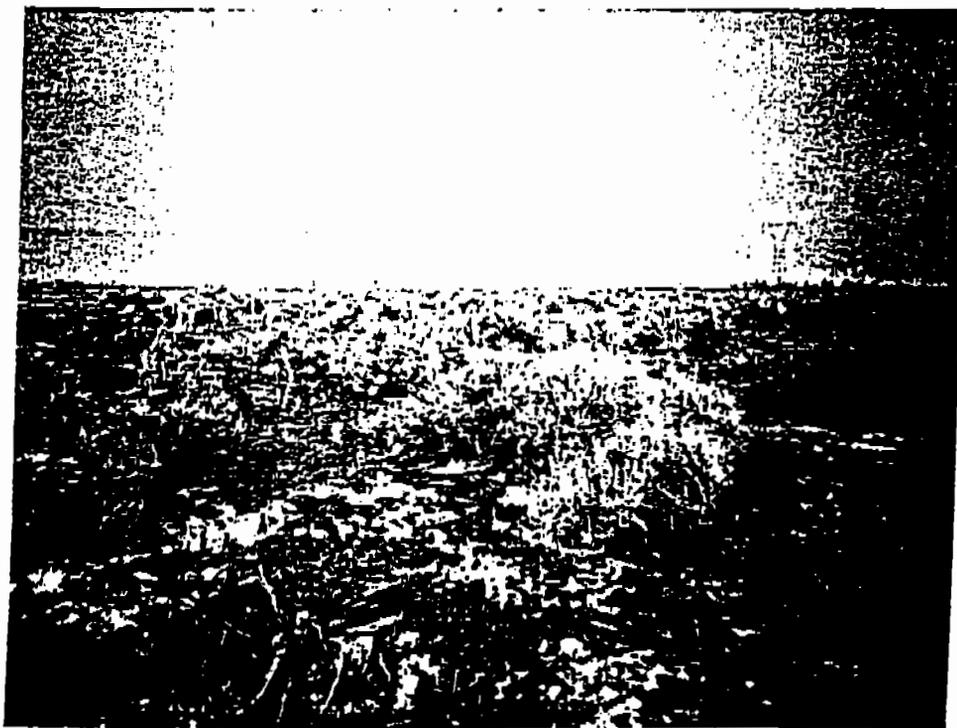


Figure 5. Project site from the northwest corner facing southeast showing typical vegetation of Valley Saltbush Scrub (5Mar93).



Figure 6. Photograph of project site from the southwest corner facing north showing typical vegetation (5Mar93).



Figure 7. Photograph of old kit fox scat. Swiss army knife is 56 mm long (5Mar93).

# Bio Environmental Associates

Stephen P. Tabor, M.S.  
TWS - Certified Wildlife Biologist

4209 Lantados St., Suite A  
Bakersfield, CA 93307  
(805) 831-0229

15 December 1995

Mr. Gary Barnett - General Manager  
Lamont Public Utility District  
8624 Segreue Road  
Lamont, California 93241

**RE: Results of Small Mammal Trapping at the Lamont Public Utility District Effluent Disposal Project Site Near Lamont, California**

Dear Mr. Barnett:

As per your request, we have conducted small mammal trapping at the Lamont Public Utility District effluent disposal project site near Lamont, California. We trapped the project site on the night of 13-14 November 1995 using standard small mammal trapping techniques (CDFG 1990).

The project site is located just northwest of the Arvin Landfill. The site is more specifically described as an approximate 160 acre tract in the southeast portion of Section 25, Township 31 south, Range 28 east, Mount Diablo Base and Meridian (USGS 7.5 min Weed Patch Quadrangle Map) that is just south of Bear Mountain Boulevard (Figure 1 and 2 - taken from Lawrence and Pruett, 1993). Photographs of the project site are presented in Figure 3.

The tract of land is owned and managed by Lamont Public Utility District (LPUD). We have conducted trapping for Tipton kangaroo rats in the nearby vicinity in the past (i.e. - Arvin Landfill expansion projects, Champaign Shores Ski Lake, etc.).

LPUD has informed us that the proposed site is needed for effluent storage. Current effluent oxidation ponds are beyond capacity and the site described above is needed for effluent discharge from existing oxidation ponds to avoid a potential health hazard. LPUD has recently discussed this matter with Jeff Single, Ph.D. of California Department of Fish and Game.

Vegetation at the project site consists of a dense cover of introduced annual grasses, including *Bromus rigidis*, *Bromus mollis*, *Avena barbata*, and *Vulpia sp.* We also observed *Eremocarpus sp.* and *Eriastrum hooveri* on the site.

Mr. Gary Barnett - General Manager  
15 December 1995  
Page 2

We observed numerous California ground squirrel (*Spermophilis beecheyi*) burrows on the site. We frequently observed individuals of this species foraging in the daytime at the site. We also observed evidence of Botta's pocket gopher (*Thomomys bottae*) on the site.

The site is located within the boundaries of a fenced grazing pasture. Although livestock were not observed in the pasture, there were signs of grazing on the site. The proposed site is adjacent to and east of the existing recycling and resource recovery facility. Electrical transmission lines and pipelines cross the project site. The project site is bordered on the north and south by agriculture row crops. The project is bordered on the east by Weedpatch Highway.

We set 65 Sherman 12 inch rigid, non-folding, and folding extra long kangaroo rat traps at or near burrows of small mammals at the project site. We baited the traps with a mixture of millet and other seeds. We placed a small amount of paper toweling in the traps so as to provide a medium for the small mammal to chew on. This method is used by other researchers (i.e., David Germano, Ph.D.) as it tends to keep metabolic rates stable and thwarts the risk of hypothermia. We set traps at dusk and checked them at first light the following morning.

We conducted trapping on the 13-14 November 1995 using standard small mammal trapping techniques (CDFG 1990), for a total of 65 trapnights. We set traps along five trapline locations at the project site. We captured *Dipodomys nitratoides* and *Peromyscus maniculatus* on the project site. The following is a summary of our trapping results:

total trapnights:	65
Traps open:	56/65
Traps sprung:	9/65
capture success:	9/65 (14%)
total captures:	9/65

Species captured:

<i>Peromyscus maniculatus</i> :	7/9
<i>Dipodomys nitratoides</i> :	2/9

The density of small mammal burrows is low on the proposed project site. This is probably because of previous flooding of the project site from annual rains and disturbances. Burrows were more numerous where the ground cover was sparse, and where native shrubs (*Atriplex polycarpa*) occur on the site. *D. heermanni* size burrows were present in these areas. It is also possible with trapping success being moderate (14%) that not all individuals inhabiting the site were captured, or that *P. maniculatus*, which comprised 78% of the total captures, excluded other species from the traps.

Mr. Gary Barnett - General Manager

15 December 1995

Page 3

There remains some debate within the scientific community concerning the taxonomic status of the Tipton kangaroo rat. Boolootian (1954) showed that Tipton kangaroo rats (*Dipodomys nitratooides nitratooides*) can be distinguished from short-nosed kangaroo rats (*Dipodomys nitratooides brevinasus*) on the basis of hind foot measurements and tail length. Arguments also exist as to if the regional vicinity where the project site is located was high enough in elevation to escape long-term Pleistocene flooding that allowed separation and isolation of *Dipodomys nitratooides* for subspeciation to occur. If this is the case then *Dipodomys nitratooides* that occur at the project site may be closer related to the short-nose group.

Thank you for your time and attention to this letter report and for selecting BioEnvironmental Associates to provide you with environmental services. If you have any questions or if we may be of further assistance please call me at (805) 831-0229 or 2567.

Sincerely,



Stephen P. Tabor

TWS - Certified Wildlife Biologist

#### LITERATURE CITED

- Boolootian, R.A. 1954. An analysis of subspecific variation in *Dipodomys nitratooides*. J. Mammal. 35:570-577.
- California Department of Fish and Game (CDFG). 1990. Region 4 survey methodologies for San Joaquin kit fox, blunt-nosed leopard lizard, San Joaquin antelope squirrel, Tipton kangaroo rat, giant kangaroo rat. Compiled by R. Rempel and G. Presley. 10 pp.
- Lawrence, G.E and P.E. Pruett. 1993. Biota Report - Lamont Public Utilities District project. Unpublished report submitted to Lamont Public Utilities District, Lamont, California. 9 pp.



Figure 3. Photographs of the proposed Lamont Public Utility District Effluent Disposal Project Site near Lamont, California. Electrical transmission lines that cross the project site are shown in the top photograph. The bottom photograph shows habitat where *Dipodomys nitratooides* were captured.

Appendix

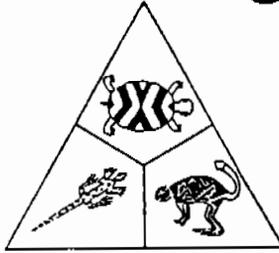
10.3

KANGAROO

RAT

TRAPPING

REPORT



## DAVID J. GERMANO, Ph.D.

Wildlife Consultant  
3520 Sewell St., Bakersfield, CA 93312  
(805) 589-7846

26 May 1998

M. H. Wolfe and Associates  
PO Box 10254  
Bakersfield, CA 93389

Dear Marcia:

This letter serves as my report to you concerning the trapping and holding of Tipton kangaroo rats (*Dipodomys nitratooides nitratooides*) that I did for you at the Lamont wastewater site in southeastern Kern County. Rodents were trapped at the site in early March 1998 and all Tipton kangaroo rats were held in captivity per the request of the U.S. Fish and Wildlife Service in Sacramento. The site was a degraded alkali sink / saltbush scrub site adjacent to Bear Mountain Blvd. (T31S, R28E, SE ¼ Section 25). When I first started trapping at the site, approximately half the site had already been disced and did not support native vegetation. Much of the rest of the site contained saltbush shrubs and a heavy cover of non-native grasses. A small portion (about 10 acres) of the site in the southwest corner was more open and had many small playas bare of any vegetation.

Initially, I set 34 Sherman live-traps next to shrubs and at the few active burrows found at the site. The numbers and placement of traps varied during the course of trapping as I concentrated on areas where I caught Tipton kangaroo rats. I trapped the site 2-4, 6, 8, 9, 11, and 12 March 1998. I set the traps during late afternoon by opening the traps and baiting with bird seed. Each trap had a waded paper towel to be used for thermoregulation by captured animals. I checked traps 2-4 March during the morning (08:15 - 09:30) and at night between 22:20 and midnight the other times. Traps were closed after checking and not reopened until the following late afternoon. Except for deer mice (*Peromyscus maniculatus*), when an animal was captured, I weighed it, identified it to species, and checked its reproductive condition. Tipton kangaroo rats were kept and brought back to Bakersfield for holding. Other rodents were released at the point of capture after handling. I did not handle deer mice because of the danger of Hantavirus. If a deer mouse was in a trap, I simply noted its presence and then dumped it out of the trap.

Eighteen Tipton kangaroo rats were captured during the eight nights of trapping (Table 1). No Tipton kangaroo rats were caught in the northeast or central portion of the site where the grass was thick. All Tipton kangaroo rats were captured in the southwest portion of the site that contained open playas. Some kangaroo rats were captured next to

Table 1. Tipton kangaroo rats (*Dipodomys nitratooides nitratooides*) captured 2-12 March 1998 at the wastewater spreading site for the city of Lamont, Kern County, California. The kangaroo rats were held in captivity until 26 April 1998 when they were placed into artificial burrows at California State University, Bakersfield. One kangaroo died in captivity approximately 10 days after capture.

Ear Tag Number	Sex	Age Class	Reproductive Condition	Mass
<b>26 April</b>				
2801	Male	Adult	Scrotal	37 g
2802	Male	Juvenile	Scrotal	31 g
2803	Male	Adult	Scrotal	36 g
2804	Male	Adult	Scrotal	34.5 g
2805	Male	Adult	Scrotal	37.5 g
2806	Female	Adult	Non-Reproductive	36 g
2807	Female	Juvenile	Non-Reproductive	32 g
2808	Male	Juvenile	Non-Reproductive	26 g
2809	Male	Adult	Scrotal	37.5 g
2810	Female	Juvenile	Non-Reproductive	28 g
2811	Female	Adult	Non-Reproductive	36 g
2812	Male	Adult	± Scrotal	32 g
2813	Female	Juvenile	Estrus	30 g
2814	Male	Adult	± Scrotal	36 g
2815	Male	Adult	Scrotal	40 g
2816	Male	Adult	Scrotal	38 g
2817	Male	Adult	Scrotal	43 g
None	Male*	Adult	-----	31 g

\* Died in Captivity

active burrows, whereas others were caught next to shrubs that may have had burrows hidden underneath. In all cases, Tipton kangaroo rats were caught in relatively open areas. The most abundant rodent captured on the site was the deer mouse. I made 177 captures of deer mice during trapping. Deer mice were caught in all areas of the site, but were especially abundant in grassy areas. Numerous times two deer mice were caught in the same trap. I also made 6 captures of house mice (*Mus musculus*).

As I have done before, Tipton kangaroo rats were housed in individual 5-gallon buckets that had a layer of about 3 cm of sand and a metal can turned on its side to act as a shelter. Each bucket had a wire mesh top to prevent the animal from escaping. I periodically gave the kangaroo rats about 100 ml of bird seed for food as well as putting in partially dried grass. Kangaroo rats were held from the time they were caught in the field until 26 April 1998. All but one kangaroo rat appeared to maintain its health in captivity and were in good health when released to the translocation site. One male kangaroo rat died 10 days after first capture (Table 1). There were no injuries noted on the animal and its weight was good. I do not know why the animal died, although it may have been old or may have had already been suffering from some ailment when captured.

The Tipton kangaroo rats were translocated to the Environmental Studies Area (ESA) at California State University, Bakersfield 26 April 1998. The ESA site is flat ground and contains some saltbush shrubs along the eastern border. Artificial burrows were made near the saltbush shrubs. I constructed 17 artificial burrows using cardboard mailing tubes as tunnels and potato chip tube containers as horizontal dens. The tube containers were paced about 30 cm underground and a paper towel and seeds were placed in the container. The mailing tube connected the horizontal container with the ground surface. Each artificial burrow was placed 3-10 m from another burrow. I constructed burrows 24-25 April 1998. On the morning of 26 April, I ear-tagged each kangaroo rat and individually released an animal into a burrow. The entrance tube was plugged with paper towels to prevent the animal from leaving its burrow during the day. I came back at dusk the same day and unplugged all the burrows. I returned 19 May 1998 and noted that about the half the burrows showed sign of activity, including some with new burrow entrances made into the dirt. I do not know if the burrows that did not show sign of activity were truly abandoned, or how many animals actually were alive.

I hope that this report is adequate for your needs. If you need additional information or if you have any questions, please call or write me. I have enclosed an invoice for this work. Thank you.

Best Regards:



David J. Germano

Appendix 10.4 NOTICE OF COMPENSATION AGREEMENT

ADM : R4 Fish & Game - NHD & ESD  
ARCO Western Energy  
P O Box 147  
Bakersfield CA 93302  
Telephone 805 321 4000

PHONE NO. : 209 243 4020

Oct. 30 1998 11:53AM P2

February 4, 1998

+ CERTIFIED MAIL +

Mr. George Nokes, Regional Manager  
California Department of Fish and Game  
1234 East Shaw Avenue  
Fresno, CA 93710

Re: Designation of Endangered Species Compensation for Lamont Public  
Utility District's Effluent Disposal Site Expansion Project (SE1/2 Section 26,  
T31S, R28E) Weedpatch Quad Range, MDBM, Kern County, California

Dear Mr. Nokes:

This letter is formal notice that ARCO Western Energy has completed a compensation credit purchase agreement with the Lamont Public Utilities District for fifty-seven (57) acres of endangered species compensation credits. Enclosed is a copy of the signed agreement, invoice and check received from Lamont Public Utilities. Also enclosed is a check in the amount of \$21,375.00 to be deposited on behalf Lamont Public Utilities in the ARCO Endowment Account as a sub-account of CDFG's Special Deposit Fund Account.

These credits will be designated in accordance with the terms of the Conservation Easement Agreement between ARCO and the California Department of Fish and Game.

If you have any questions, please call me at (805)-321-4044

Sincerely,



Stephen W. Geddes  
Sr. Environmental Coordinator

/SWG File 10-445.7-44

Appendix 10.5 IMPLEMENTATION AGREEMENT