HABITAT CONSERVATION PLAN
DOS PUEBLOS GOLF LINKS
COUNTY OF SANTA BARBARA

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EXECUTIVE ABSTRACT

CPH Dos Pueblos Associates, L.L.C. (CPH), and ARCO Environmental Remediation, L.L.C. (ARCO) have prepared this HCP in support of an application for two permits, pursuant to Section 10(a)(1)(B) of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (Act), from the U.S. Fish and Wildlife Service (Service) for the incidental take of two (2) listed animal species: California red-legged frog and tidewater goby. The proposed incidental taking would occur within the Dos Pueblos Golf Links project site, and the small area surrounding the water pipeline support structure on the east side of Eagle Canyon, in Santa Barbara County, California. In support of the application, CPH and ARCO propose to implement a Habitat Conservation Plan (HCP) to meet the requirements of law for Section 10(a)(1)(B) permits.

The HCP delineates the responsibilities of CPH, ARCO and the Service, and is intended to enable the Dos Pueblos Golf Links project within Santa Barbara County to be constructed, maintained, and operated in such a way as to conserve the project area's biological resources. This HCP is also intended to cover take related to soil remediation activities for which ARCO is responsible. CPH and ARCO would avoid impacts to listed species to the extent feasible during construction, operation, and maintenance of the project. This HCP includes 60 measures to avoid and minimize impacts to listed species, including:

- Service-approved biologists and/or trained monitors shall carry out monitoring, relocation of listed species, and education programs for the project.

- Construction and maintenance personnel shall receive environmental training regarding federally-listed species.

- Public access to the beach at the mouth of Eagle Canyon via the access trail shall be prohibited from 1 February to 31 May each year.

- Pets shall not be allowed on the site during construction, and horses are the only domesticated animals that shall be allowed on the public access trail during operations.

- Best Management Practices for erosion and sediment control shall be implemented and maintained during construction and until vegetation is established on bare soils.

- Work areas for construction shall be clearly marked and no disturbance, staging, or storage activities will be conducted outside the construction areas.

- Construction equipment shall be regularly inspected and maintained. Any leaks found shall be repaired immediately.

- Hazardous materials shall be stored in a containment area at least 100 feet from aquatic habitats during construction. Any hazardous materials spills shall be cleaned up immediately.

- Concrete trucks shall be washed out in designated areas where runoff cannot reach aquatic habitats.

- Any California red-legged frogs found in the work area shall be relocated by the Service-approved biologist and/or trained monitors.

- Construction areas where water or riparian vegetation is present shall be surveyed per Service protocol for California red-legged frogs by qualified biologists within three days prior to construction.

- Mowing of golf course roughs shall be limited to dry, sunny days.

- Aquatic weed control in the reclaimed water storage lake shall be by non-chemical methods.

- Mosquito control for the reclaimed water storage lake shall be by methods not toxic to amphibians; mosquitofish will not be used for mosquito control.

- A water quality testing program shall be implemented for Tomate Canyon, Drainage 4 north, Eagle Canyon, the vernal pool and the reclaimed water storage lake.

- A bullfrog monitoring and removal plan shall be implemented for the entire project site.

Executive Abstract

This HCP is designed to minimize and mitigate the impacts to two (2) listed animal species and their habitat. The HCP defines measures to ensure that the elements of the HCP are implemented in a timely manner. The HCP also discusses the possibility of changed and unforeseen circumstances occurring, and specifies actions to address such contingencies. Funding for the HCP and alternatives to the proposed project are discussed.

SECTION 1.0
INTRODUCTION

The purpose of this Habitat Conservation Plan (HCP) is to satisfy the requirements of obtaining two incidental take permits (one for ARCO and one for CPH). The HCP addresses the potential impacts to, and mitigation measures to avoid or offset such impacts to, the California red-legged frog (*Rana aurora draytonii*) and tidewater goby (*Eucyclogobius newberryi*) that could result from construction and operation of the Dos Pueblos Golf Links project, as well as soil remediation activities to be conducted by ARCO. The life of the project is anticipated to be 75 years or more, and the term of this HCP will be 25 years. The County has approved the project based on a 75-year design life. If take authorization is needed beyond 25 years, CPH will request to renew the permit before it expires following the renewal procedures (50 CFR 13.22). ARCO's remedial activities, conducted in accordance with the Remedial Action Plan (RAP), hereby incorporated into the HCP, are expected to be completed within 10 years. ARCO's Section 10(a)(1)(B) permit will have a term of 10 years. If take authorization is needed beyond 10 years, ARCO will request to renew the permit before it expires following the renewal procedures (50 CFR 13.22). The HCP is being prepared because:

- Take of the federally-listed California red-legged frog and the federally-listed tidewater goby, could occur due to implementation of ARCO's RAP, and/or construction and operation of the golf course project.

- Impacts to the California red-legged frog could occur in upland areas outside jurisdiction of the U.S. Army Corps of Engineers (Corps) and although the Corps has authorized both ARCO to use Nationwide Permit 38 and CPH to use Nationwide Permits 14, 26 and 33, the Corps has declined to initiate formal consultation with the Service for the project. Therefore, the project has no federal nexus to allow consultation under Section 7 of the Endangered Species Act (Act) for implementation of ARCO's RAP and/or construction and operation of the golf course project.

Three other federally-listed species present, or potentially present, in the project area would not be adversely affected by the project. These species and the reasons why no take would occur are discussed in *Section 3* of this HCP.

Detailed discussions of the project setting, alternatives considered and analyzed, general impacts, and conceptual mitigation measures are provided in the Final Environmental Impact Report (FEIR) for the project (Fugro-McClelland 1993) and the biological resource reports

prepared by Interface (1992), DUDEK (1998), and SAIC (1999a,b,c). Information, as appropriate, has been summarized from these documents in this HCP.

1.1 Site Description

The proposed Dos Pueblos Golf Links project is located five miles west of Goleta in the County of Santa Barbara, California. The site encompasses 208 acres situated on the coastal terrace between U.S. Highway 101 and the Pacific Ocean (*Figures 1 and 2*). The project site was used for oil and gas development and production from 1928 through 1997. Natural vegetation is limited to drainages onsite, and the remainder of the site is composed of non-native grassland. After oil and gas operations halted in 1997, production facilities were dismantled pursuant to permit approvals granted for the project by the County of Santa Barbara and California Coastal Commission, and the pieces were hauled away by truck between December 1997 and January 1998. ARCO is still responsible for conducting soil remediation activities at eight locations (see attached *Site Plan*).

The coastal terrace in the project area slopes gently (less than 10 percent) toward the ocean and ends in a steep bluff that drops almost vertically to the beach. Soils onsite are dominated by Diablo clay that is characterized by slow permeability and high shrink-swell potential. Milpitas and Conception soils also occur onsite (Soil Conservation Service 1981). The terrace is cut by a number of moderately to deeply incised drainages. The largest of these is Eagle Canyon at the eastern edge of the site. Eagle Canyon Creek has perennial water flow in average to wet years. Tomate Canyon near the western edge of the site is also fairly large but has intermittent flow, even in wet years. The other minor drainages vary in size and have ephemeral flow.

1.2 HCP Boundaries

This HCP covers the area within the property boundaries (208 acres) and the small, offsite area surrounding the water pipeline support structure on the east side of Eagle Canyon (see *Figure 2*).

1.3 HCP Goals and Objectives

Due to the dynamic nature of the species to be covered and their habitat, maintaining a certain population size for either the tidewater goby or the California red-legged frog is not

Figure 1 Dos Pueblos Golf Links Habitat Conservation Plan

Figure 2 Dos Pueblos Golf Links Habitat Conservation Plan

feasible. Therefore, the following goals have been developed to minimize take and insure preservation of potential habitat for the two species. These goals and the objectives to be used to accomplish them are:

A. To not degrade water quality at Eagle Canyon and Tomate Canyon during project construction.

Objective A1: CPH will maintain water quality levels for turbidity below EPA aquatic life suspended solids and turbidity standards: the compensation point for photosynthesis should not be reduced by more than 10 percent of the seasonally established norm. If this level is exceeded, project construction shall cease until the turbidity is reduced below the threshold and the sediment and erosion plan will be modified in order to maintain turbidity levels below the thresholds.

B. To not degrade water quality at Eagle Canyon, Tomate Canyon, Drainage 4 North, the vernal pool and the water storage lake or sediment quality in Eagle Canyon, Tomate Canyon or Drainage 4 North during project operation and maintenance activities.

Objective B1: CPH will maintain water quality levels of dissolved oxygen, pH, nitrites, nitrates and phosphates below EPA levels at Eagle Canyon, Tomate Canyon, Drainage 4 North, the vernal pool and the water storage lake.

Objective B2: CPH will maintain no detectable input of chemicals (herbicides, pesticides and fertilizers) to waters and sediments of Eagle Canyon, Tomate Canyon and Drainage 4 North. Prior to construction, CPH will obtain baseline data for chemicals in surface water and sediments in these three drainages.

C. To prevent colonization of exotic animal predators within the project site.

Objective C1: CPH will maintain the potential bullfrog population onsite at zero.

Objective C2: CPH will maintain the potential crayfish population onsite at zero.

Objective C3: CPH will maintain the potential mosquitofish population onsite at zero.

Objective C4: CPH will remove the existing racoons onsite and maintain the population at zero if approved by the California Department of Fish and Game.

Objective C5: CPH will maintain the potential opossum population onsite at zero if approved by the California Department of Fish and Game.

D. To maintain California red-legged frog and tidewater goby populations onsite by maintaining and improving the quality of California red-legged frog dispersing habitat throughout the project site and the California red-legged frog breeding habitat and tidewater goby habitat in Eagle Canyon.

Objective D1: CPH will maintain 4.3 acres of riparian and wetland habitat onsite, including 1.15 acres of mitigation area (southern willow scrub and herbaceous wetlands) for dispersing California red-legged frogs.

Objective D2: CPH will maintain 0.5 acre of aquatic habitat in Eagle Canyon for resident California red-legged frogs and tidewater gobies and create 0.15 acre of riparian habitat and 0.12 acre of upland habitat in Eagle Canyon for resident California red-legged frogs.

Objective D3: CPH will ensure that, in accordance with the *Biological Enhancement/Landscape Plan* (BELP; attached as Appendix A), the wetlands mitigation areas and buffer areas will meet the following success criteria: 75 percent cover within two years and 80 percent cover within five years. If these success criteria are not met per the BELP monitoring schedule, additional treatments (*i.e.*, hydroseeding, planting, etc.) will be conducted. At such time as the success criteria are met (probably after three to five years), the annual monitoring will be discontinued.

Objective D4: CPH will endeavor to prevent people from leaving the public access trail system onsite and from entering the mouth of Eagle Canyon from the beach, using signs and fences.

Objective D5: CPH will ensure that Eagle Canyon contains zero trash through quarterly trash removal. (Trash removal in Eagle Canyon will be conducted within the 2.46-acres protected by a conservation easement as indicated on the attached Site Plan.)

SECTION 2.0
PROJECT DESCRIPTION

ARCO proposes to conduct soil remediation in accordance with the RAP prepared (ENSR 1998) for and approved by the County of Santa Barbara Protection Services Division (PSD) on June 18, 1998. The RAP, hereby incorporated into the HCP, describes the eight areas proposed for remedial excavation, the material to be excavated and the estimated volume of material to be removed. Implementation of the RAP, as required by the County, must be completed prior to construction of the proposed golf course project.

CPH proposes to construct an 18-hole links style golf course; a nine-hole par-three golf course; a driving range; a putting green; a turf farm; a clubhouse including a pro-shop, restrooms, administrative offices, a restaurant grill, and a meeting room; a cart barn; a maintenance and office building; a halfway house comprising restrooms, a snack bar, and a starter station; a remote restroom; pumphouse; reclaimed water storage lake; and 290 parking spaces. Soil remediation, at eight locations where previous oil activities resulted in soil contamination, is the responsibility of ARCO. The areas for the project components shown in *Table 1* are from the Coastal Development Permit (CDP) issued by the County of Santa Barbara (case number 98-CDP-274). The 1.15 acres of southern willow scrub and herbaceous wetlands revegetation areas will be preserved in perpetuity.

TABLE 1. PROJECT FEATURES AND ACREAGE

Project Feature	*Acres*
18-hole course	72.4
Par-three course	8.7
Putting green	0.3
Driving Range	5.4
Turf Farm	0.5
Clubhouse, parking, maintenance buildings	0.6
Reclaimed water storage lake	0.9
Wetlands revegetation areas	1.15
Native grassland revegetation areas	1.48
Undeveloped open space areas	116.6
TOTAL	**208.0**

Mitigation for biological impacts resulting from the ARCO RAP and the Dos Pueblos Golf Links project has been developed during pursuit of a Section 404 permit from the Corps, a Major Conditional Use Permit from the County of Santa Barbara (County), and a Coastal Development Permit from the California Coastal Commission and County.

Construction of the proposed golf links project would result in permanent impacts to 0.4 acre (17,402 square feet) of ephemeral or intermittent stream channel. The proposed project would also result in temporary impacts to 0.01 acre (434 square feet) of ephemeral or intermittent stream channel. The Corps authorized CPH to use Nationwide Permits 25, 26 and 33 for the proposed project impacts to stream channels. Mitigation for these impacts was approved by the Corps (Authorization to use Nationwide Permits 25, 26 and 33, dated December 15, 1998) and the County (Issuance of Substantial Conformity Determination, dated October 9, 1998; Issuance of Approval of 98-CDP-274, dated December 3, 1998). The Service reviewed the ACOE Pre-Construction Notification and did not comment.

Implementation of the RAP would result in temporary impacts to approximately 0.26 acre (7,560 square feet) of recently-created, isolated, disturbed wetlands. The Corps authorized ARCO to use Nationwide Permit 38 for the proposed RAP impacts. Mitigation for these impacts was approved by the Corps (Authorization to use Nationwide Permit 38, dated October 8, 1998), the Service (Approval of Wetlands Mitigation, dated November 2, 1998) and the County (Issuance of Substantial Conformity Determination, dated November 6, 1998; Issuance of Approval of 98-CDP-241, dated November 9, 1998).

Golf Course

The 18-hole golf course will occupy 72.4 acres and has been designed to fit into the existing natural topography in order to minimize grading (see attached *Site Plan*). The 18-hole course will be serviced by a standard concrete cart path. Six-inch, stand-up, concrete curbing will be constructed around all greens, tees, and other locations for maintenance and safety. Nine cart bridges and two foot bridges are proposed in association with the cart path. The bridges will be constructed of pre-manufactured steel with wooden decks and will have concrete abutments and wooden guard rails. The foot bridges will consist of concrete footings, located outside of drainage channels, and wooden walkways and handrails. The cart path system, in conjunction with turf surfaces and an existing service road located south of the railroad right-of way, will provide maintenance vehicle access to the entire property.

The routing of the 18-hole golf course will necessitate crossing the Union Pacific Railroad right-of-way three times. The crossings will be accommodated by an existing wooden bridge and two proposed tunnels. The tunnels under the railroad easement will be approximately 100 feet in length and 10 feet in height.

The nine-hole, par-three course will occupy approximately 8.7 acres in the eastern portion of the property. The par-three course consists of fairways of 150 yards or less and is designed to be walked. No cart path is proposed for the nine-hole course, and no golf carts will be allowed.

The clubhouse, parking lot, maintenance area, and cart barn will occupy approximately 0.6 acre and will be located at the original site of the ARCO production offices, storage yards, and warehouse. The clubhouse will consist of a pro shop, restaurant grill, meeting room, administrative office and restrooms. Food will be served for golfers during daylight hours only.

Because of the golf links design, golfers will not return to the clubhouse prior to completing a round of golf. Therefore, a halfway house will be constructed adjacent to the tee boxes for the tenth hole of the 18-hole course. The halfway house will include restrooms, a snack bar, and a starter station. In addition to the halfway house, one restroom will be located on the golf links.

Golf cart storage, maintenance, cleaning operations, and range operations will be enclosed within the cart barn located north of the clubhouse. The maintenance building will provide storage for the equipment and machinery needed to maintain the golf course, offices, and employee facilities. The maintenance building will be located east of the clubhouse, adjacent to the service yard. The service yard will be screened to the east by the maintenance building and to the west by a serpentine wall. Additional storage will be provided by an 800-square foot building on the north side of the service yard.

A putting green, driving range, and turf farm are also elements of the proposed project. The putting green will be located between the driving range, the clubhouse, and the first tee box. The driving range will be located west of the clubhouse. The turf farm will occupy 0.5 acre in the northwestern portion of the project site.

Fencing along the perimeter and railroad right-of-way will be constructed from rustic wood and/or cable. All existing on-site and proposed utilities will be placed underground.

Reclaimed Water Storage Lake and Pump House

The reclaimed water storage lake will provide reserves for 2.5 days of peak irrigation and 5 days of average irrigation needs. A pump house (approximately 700 square feet) will be constructed immediately south of the lake. The intake pump will be located near the bottom of the reclaimed water storage lake, approximately 15 feet below the water surface (when the storage lake is at capacity). The water intake pump will be covered with a 5 mm screen.

Because the proposed reclaimed water storage lake will experience an average daily drawdown of 2.5 feet, and a maximum drawdown of 11.5 feet, the lake will be constructed with a concrete liner to prevent the growth of rooted vegetation within the lake. This concrete liner will extend down the sides of the reclaimed water storage lake to a depth of six feet.

The reclaimed water storage lake will be supplied via a reclaimed water pipeline described below.

Public Access Trail

As a condition of the County of Santa Barbara Conditional Use Permit and California Coastal Commission Coastal Development Permit, CPH is required to construct and maintain a public coastal access trail, averaging 24 feet in width. The width of the lateral access trail was designed to accommodate a pedestrian walkway, an equestrian path, and a bike path. CPH is also required to provide vertical access to the beach near the western property boundary and at the eastern property boundary. The western vertical access will terminate at the beach immediately west of Tomate Canyon (see attached *Site Plan*). The eastern vertical access will terminate at the beach at the mouth of Eagle Canyon. The offers to dedicate this trail system have been recorded as part of the CDP compliance, and CPH and the County have executed an agreement which obligates CPH to construct, operate, and maintain the trail improvements. It should be noted, however, that the vertical access currently dedicated is that originally approved in the CDP (*i.e.*, the vertical access trail extending along the western boundary of Eagle Canyon Creek from the end of the lateral access trail to the ocean with a boardwalk crossing of the creek mouth). This design for the vertical access has been revised to minimize impacts to Eagle Canyon Creek by relocating the vertical access out of the creek area, to the beach at the mouth of Eagle Canyon.

As currently proposed in this HCP, the vertical access at the beach at the mouth of Eagle Canyon will consist of a wooden stairway with several wooden landings, terminating at a concrete platform on the beach at the mouth of Eagle Canyon, along the Pacific Ocean (*Figure* 3). The wooden stairway will originate from the lateral public access trail on the slope above Eagle Canyon. The entrance to the stairway will be located immediately adjacent to the view point located on the cliff side of the lateral public access trail.

Due to the presence of a harbor seal rookery immediately east of Tomate Canyon, a Restrictive Access Implementation Plan (RAIP) was developed and approved by the National Marine Fisheries Service, California Department of Fish and Game, County, and California Coastal Commission. The RAIP, attached as Appendix B, requires that public access to the beach east of Tomate Canyon be restricted during the breeding/pupping season from February 1 to May 31 annually. While this vertical access will remain open, the area will be monitored to prevent the public from walking east along the shoreline during this period. The eastern terminus of the vertical public access trail (at the beach at the mouth of Eagle Canyon) will be closed from February 1 to May 31 annually. Locking gates will be installed at the top of the vertical access trail above Eagle Canyon in order to provide the necessary access control. The eastern terminus of the lateral access trail, although constructed to the eastern property boundary as required by the CDP, will be gated at a location just east of the top of the vertical access trail to prevent the public from entering Eagle Canyon Creek from the canyon. At such time as the lateral access trail is extended east from the project site, this gate will be removed.

In addition to the measures imposed in the RAIP, public access along the shoreline of the project site will be limited by the tide. During the calendar year 2000, between the hours of 5 AM and 9 PM, the tide extended above the elevation of the cliff base onsite for portions of a total of 205 days. From January 1 through 31, 2000, the beach was impassable for portions of 20 days. Between February 1 and May 31, 2000 (the season during which future public access will be limited in accordance with the RAIP), the beach was impassable for portions of 46 days. Between May 31 and December 31, 2000, the beach was impassable for portions of 139 days.

2.1 Implementation of the Remedial Action Plan

Remedial Action Plan

The RAP (ENSR 1998) was prepared for and approved by the County of Santa Barbara Protection Services Division (PSD) on June 18, 1998, for proposed remedial excavation of

Figure 3 Eagle Canyon Access

surficial petroleum hydrocarbon- and mercury-impacted soils. *Table 2* below depicts the areas to be remediated, the material to be excavated and the estimated volume of material to be removed. At each of the areas to be remediated, the vegetation will be cleared and the soils will be excavated using an excavator. The soils will be placed in a hauler truck and removed from the project site. All remediated soils will be disposed of at an approved disposal site. Excavated soils impacted with petroleum hydrocarbons will be disposed of at the ARCO Batch Plant, South Coles Levee Facility, Kern County. Excavated soils impacted with mercury will be disposed of at the McKittrick Waste Treatment Facility (Class II Landfill), 56533 Highway 58W, McKittrick, California.

TABLE 2. AREAS OF PROPOSED REMEDIAL ACTION

Areas of Remediation	*Materials to be Excavated*	*Estimated Volume of Material to be Removed*	*Estimated Square Feet of Material to be Removed*
Active (129/208) Tank Farm	Removal of petroleum-hydrocarbon impacted berms	100 to 400 cubic yards	4980 square feet
Former (208) Tank Farm	Stained surface soil	5 cubic yards	45 square feet
Meters (Mercury)	Removal of mercury-impacted soils from three areas	45 cubic yards	405 square feet
Warehouse Storage (Loading Dock)	Stained surface soil	7 cubic yards	63 square feet
Well 129-2 Staining	Stained surface soil	7 cubic yards	63 square feet
Former Gas Compressor	Stained surface soil	5 cubic yards	45 square feet
Mudpit Near 208-19 Well	Stained surface soil	50 cubic yards	450 square feet
Concrete abutment	Concrete abutment	10 cubic yards	90 square feet
TOTAL		**229 to 529 cubic yards**	**6141 square feet**

If the excavated soils have a total volume of approximately 229 cubic yards, it is estimated that two hauler truck trips will be required. If the excavated soils have a total volume of 529, it is estimated that four hauler truck trips will be required. Upon excavation of the petroleum hydrocarbon- and mercury-impacted soils, clean fill dirt will be used to replace the excavated soils.

Implementation of the RAP, as required by the County, must be completed prior to construction of the proposed golf course project. In addition, if any stained soils are uncovered during construction of the golf course, ARCO will be responsible for removing

these soils to a depth that will allow the placement of two feet of clean fill dirt over the stains. This may result in the additional removal of up to 5,000 cubic yards. The areas of proposed remediation (see *Table 2*) and the areas of potential remediation are included on the Site Plan in the attached map pocket. During implementation of the RAP, the applicant shall prevent sediment and other materials from entering the drainages (see EQAP). These include straw bale and silt fence barriers at the downslope side of all disturbed soil areas that are maintained throughout the rainy season.

2.2 Golf Links Project Construction

The proposed project will result in 154,470 cubic yards of cut and 154,570 cubic yards of fill, balanced onsite, including some off-site grading for construction of acceleration and deceleration lanes on Highway 101, and for installation of utility pipelines. In total, 115 acres of the 208-acre site will be disturbed during the grading phase. The proposed drainage plan includes construction of storm drains with energy dissipaters as well as three desiltation basins. The schedule for constructing the various project components is shown in Appendix C.

2.2.1 Golf Course Areas

Upon completion of the reclaimed water pipeline, construction of the golf course will commence. Construction will begin in the northwest corner of the property and progress eastward towards the clubhouse area. The second phase of construction will begin south of the railroad right-of-way in the southwest corner of the project site, moving eastward. Appendix C provides a table depicting the proposed schedule of construction activities. *Figure 4* depicts the project site by construction area section. These construction area sections, as labeled on *Figure 4*, indicate the order in which construction will occur and correspond to the schedule in Appendix C.

Erosion Control

Because some construction could occur during the rainy season, an erosion control plan has been designed and approved by the County as required by the CDP. In addition to the conditions of the erosion control plan, CPH proposes that grading and soil remediation will not be conducted south of the railroad right-of-way during the rainy season. Erosion control methods to be employed onsite include silt fencing, straw bale dikes, desilting facilities, rock berms, rock rip-rap, silt traps, and slope protection.

Figure 4 Project Site by Section

Silt fencing will be installed wherever water may potentially drain off construction areas of the project site as sheet flow. Silt fences will be inspected by the contractor immediately prior to and after each rainfall event and the accumulated sediment will be removed to an approved disposal site.

Straw bale dikes will be placed in small swales to aid in desiltation and reduce water velocity. The dikes will be inspected on a regular basis and accumulated sediment will be removed and transported off site to an approved disposal site.

A water sampling program will be implemented in Eagle Canyon, Drainage 4 North and Tomate Canyon during golf course construction, following each rain event. Impacts of erosion and sedimentation to water quality will be measured using turbidity. Sampling locations include Eagle Canyon at the northern property line, north of the railroad and in the lagoon at the mouth of Eagle Canyon; Drainage 4 North at the northern property line and north of the railroad; and Tomate Canyon at the northern property line, north of the railroad and at the mouth of the creek. CPH will maintain water quality levels for turbidity below EPA aquatic life suspended solids and turbidity standards: the compensation point for photosynthesis should not be reduced by more than 10 percent of the seasonally established norm. If this level is exceeded, project construction shall cease until the turbidity is reduced below the threshold and the sediment and erosion plan will be modified in order to maintain turbidity levels below the thresholds.

Desilting facilities, consisting of straw or gravel, will be placed around storm drain inlets to prevent entry of silt in the storm drain system and subsequently the on-site drainages. The desilting facilities will be inspected by the contractor immediately before and after each rainfall event. Accumulated sediment will be removed and transported off site to an approved disposal site.

Temporary rock berms will be constructed as needed within graded earth swales to reduce the velocity of storm water runoff and trap sediment. The rock berms will be inspected by the contractor immediately before and after each rainfall event. Accumulated sediment will be removed and transported off site to an approved disposal site.

Rock riprap will be placed at storm drain outlets to slow down and disperse the storm water flows. The riprap will be inspected by the contractor immediately before and after each rainfall event and, if a significant amount of rock has been displaced, the contractor will retrieve and restore the dislocated material where feasible and, if necessary, add rock of the appropriate size.

Temporary silt traps, local depressions used to slow down water and trap silt within a small graded area (5 acres or less), may be employed within the construction areas. The silt traps will be cleaned out on an as-needed basis.

Slope protection will consist of seeding with a fast-growing grass, six-week fescue (*Vulpia octoflora*), as soon as practicable in accordance with the Biological Enhancement Landscape Plan (BELP) (see *Section 2.2.4* below). The slope protection will be inspected by the contractor immediately before and after each rainfall event and, if gullying or excessive erosion have occurred, the areas will be repaired. Repairs may include reseeding, regrading, or application of an erosion control fabric (*e.g.*, jute netting, geotextile fabric, etc.). Additionally, within three weeks of final grading activities within each area, the graded areas will be revegetated (see description of revegetation below).

Prior to initial grading, a National Pollution Discharge Elimination System (NPDES) Construction Permit and Storm Water Pollution Prevention Plan (SWPPP) will be submitted to the Regional Water Quality Control Board (RWQCB). The SWPPP will outline in detail the responsible parties, maintenance procedures, and inspection procedures for erosion control.

Site Preparation

Before planting, annual weeds will be controlled by irrigating to allow germination, followed by cultivation or application of an approved contact herbicide, in accordance with the final *Agronomic Turf Management and Integrated Pest Management* (ATMIPM; attached as Appendix D). This process should be repeated two or three times to improve the chances of establishing a turf grass with a minimum of weed populations. This process may be implemented anywhere within the limits of grading for the golf course, turf farms, landscaped buffer areas and revegetation areas (see attached Site Plan).

2.2.2 Public Access Trail

Construction of the vertical access west of Tomate Canyon will involve installation of a concrete landing at the base of the cliff, wooden stairs attached to the cliff face, and a decomposed granite trail from the stairs to the cart path. Equipment for construction of the concrete landing and stairs will be staged from a temporary pad on the slope above (see attached Site Plan). A small "bobcat" type backhoe equipped with drilling auger will drill the

caissons. The same type of equipment will be used on the beach to excavate for the concrete landing. A crane, located at the staging area, will be used to ferry equipment and materials for the construction of the proposed improvements. Dewatering of the excavations, if necessary, is expected to be accomplished by using a portable sump pump(s) prior to concrete pouring. A temporary sand berm wrapped in filter fabric will be constructed on the beach side of the excavation for the landing to protect it from wave run-up on the beach at high tide. Concrete will be placed from trucks and/or pumping equipment located in the staging area above. Debris from the drilling operation will be cleaned up and hauled to an approved disposal site. At the completion of construction, the temporary staging area on the beach will be restored to pre-construction grade and the temporary staging area on the bluff top will be incorporated into the footprint of the golf course.

Construction of the lateral access trail will involve clearing of vegetation, some minor grading, and installation of an asphalt bike path. The pedestrian and equestrian portions of the trail will be earthen. That portion of the bike path within 200 feet of Eagle Canyon will be constructed from concrete to avoid impacts to water quality. Work will not be conducted between November and March during the rainy season. No runoff of sediments or cement to the creek is expected since the work will be conducted during the dry season and measures will be taken to prevent such runoff.

Construction of the vertical access to the beach at the mouth of Eagle Canyon will be similar to that for the access west of Tomate Canyon. A decomposed granite path will be installed along the bluff from the view point (beside the lateral access trail) to wooden stairs extending down the canyon wall. The stairs will be attached to the canyon wall and will end at a concrete landing on the beach at the mouth of the creek (*Figure 3*). Work will be staged from the view point on the slope above Eagle Canyon and from the beach at the mouth of Eagle Canyon. Installation of the vertical access will require clearing of Venturan sage scrub vegetation. This clearing, installation of the caissons and construction of the concrete foundations will be accomplished with no intrusion into the waters of Eagle Canyon Creek. Work will not be conducted between November and March. No runoff of sediments or cement to the creek is expected since the work will be conducted during the dry season and measures will be taken to prevent such runoff. A small "bobcat" type backhoe equipped with drilling auger will drill the caissons. The same type of equipment will be used on the beach to excavate for the concrete landing. A crane, located at the staging area on the beach, will be used to ferry equipment and materials for the construction of the proposed improvements. This crane will access the site from the Eagle Canyon Ranch property to the east.

Dewatering of the excavation, if necessary, is expected to be accomplished using a portable sump pump(s) prior to concrete pouring. A temporary sand berm wrapped in filter fabric will be constructed on the beach side of the excavation for the landing to protect it from wave run-up at high tide. Concrete will be placed from trucks and/or pumping equipment located on the beach adjacent to the crane. The wooden stairway and landings will be constructed on the slope above and installed with the crane. Debris from the drilling operation will be cleaned up and hauled to an approved disposal site. At the completion of construction, the temporary staging area on the beach will be restored to pre-construction grade, and the temporary staging area on the bluff top will be incorporated into a portion of the public access trail and view area.

2.2.3 Reclaimed and Potable Water Pipelines

An existing eight-inch reclaimed water pipeline and a ten-inch potable water pipeline will be extended from the western boundary of the Bacara (formerly Santa Barbara Club) Resort and Spa. The pipelines will then continue in a southwesterly direction for approximately 220 feet toward the Ellwood Pier. The pipelines will then be laid on existing oil and gas pipe racks (within an existing easement) across Eagle Canyon Ranch. At the Eagle Canyon Ranch pipe racks, ten-inch pipe will be used. Onsite, eight-inch pipes will be used for both pipelines. The existing pipe racks cross over two drainages: an unnamed drainage north of Ellwood Pier and Eagle Canyon. The old pipes will be removed by ARCO, the previous property-owner, and CPH will install the new water pipelines. The installation of the water pipelines will be conducted simultaneously with the removal of the oil and gas pipelines if feasible.

The new pipelines will be installed on the existing pipe rack by a light crane. All pipeline construction will be staged above the creek channel. At Eagle Canyon Creek, new pipe supports will be installed for suspension of the pipes over the creek. This will require drilling two 24-inch diameter caissons on each side of the creek to a depth of seven (7) feet below mean sea level (msl) with a truck- or crane-mounted drill rig. Steel reinforcement will be placed in the caissons, and the holes will be filled with concrete and capped with a footing that is eight (8) feet by three (3) feet. Steel columns will then be set on the concrete footings to support the cables. Anchors for the cables (two each side) will be drilled at a 30-degree angle into the ground (six [6] inches in diameter and 30 feet long). The support cables with connecting pipe will then be attached to the columns followed by installation of the pipelines. No entry into the creek (equipment or personnel) will occur. From Eagle Canyon, the pipelines will be placed under the existing access road for approximately 300 feet before

turning west at the top of the canyon. The reclaimed water pipeline will terminate at the reclaimed water storage lake. Approximately the last 650 feet of reclaimed pipeline will be located outside of the existing roadway. Where installed under existing roadways, the pipeline will be installed within approximately two (2) to three (3) feet of either side of the pavement centerline.

2.2.4 Landscape Buffers and Revegetation Areas

The County of Santa Barbara and California Coastal Commission approvals required the preparation of a BELP. The BELP was prepared and approved by the County prior to the issuance of the CDP. This plan addresses protection, restoration, revegetation, and landscaping of the disturbed graded areas onsite. The BELP includes procedures for seeding and planting, monitoring and maintenance, and revegetation success criteria for planted trees and shrubs as well as hydroseeded areas.

Approximately 2.6 acres of the project site will be revegetated as wetland mitigation sites and grassland mitigation sites. The grassland mitigation areas are depicted on the attached site plan and are listed under the habitat treatments legend as grassland plugs and native grassland (southwest corner of the project site). The wetland mitigation sites are depicted on the attached site plan and are listed under the habitat treatments legend as riparian revegetation treatments 1, 2 and 4. Preparation of areas to be revegetated with wetland species will consist of grading, removal of exotic vegetation, and weed eradication. After initial clearing and grubbing, the areas will be tilled to a depth of eight (8) inches and receive a "grow and kill" treatment. This treatment consists of thoroughly irrigating the areas and applying a glyphosate contact herbicide spray (Roundup in upland areas, Rodeo for use in aquatic areas) approximately two weeks after initiation of irrigation. A second round of irrigation, germination, and herbicide applications (and a third round, if necessary) will be conducted during the eradication period.

The native grassland revegetation area will receive a soil "greenhouse" procedure prior to revegetation efforts in order to grow-out and kill the existing soil seed bank. Clear or opaque plastic sheets will be laid on the soil and secured in place. The plastic will trap heat and moisture, causing seed in the soil to germinate and eventually suffocate under the plastic.

Weeds will be removed during site preparation, prior to installation of seeding and planting, and during plant establishment and long-term maintenance periods. During plant establishment and long-term maintenance periods, invasive, weedy, non-native species (see Section 6.0 of the BELP for a list of species to be removed) will be removed primarily by hand.

The contractor will remove weeds before the plants become too large to remove by hand. Mechanical methods such as weed whipping, mowing, and disking may occur in certain locations with approval of the County-approved biologist.

Following construction of the golf course, the landscape buffer areas will be hydroseeded as soon as possible in order to prevent erosion. The hydroseed mix will consist of fertilizer (Gro-Power-Plus), mulching fiber (Silva-Fiber or equal), tackifier (Ecology-M-Binder), microbial treatment (MAT-SCI), and a specific seed mix as outlined in Table A of the BELP. Temporary, automatic irrigation systems will be installed at the hydroseeded areas. Any hydroseeded slopes or disturbed areas that fail to meet success criteria for germination will be reseeded with the same hydroseed mix as originally specified, until success criteria are achieved as defined in the BELP.

2.3 Golf Links Operations and Maintenance

The golf course is expected to operate between 350 and 360 days per year. Approximately 20,000 rounds of golf will be played on the par-three course and between 50,000 and 60,000 rounds will be played on the 18-hole course. The proposed golf links project will be operated from dawn to dusk, and restaurant service will cease one-half hour after dusk. A maximum of two professional and/or amateur events will be held per year; these events will draw spectator galleries. A full-time golf course superintendent will direct a staff of approximately 31 full-time employees.

All golf course maintenance procedures and materials will be conducted and used in accordance with the County- and Service-approved ATMIPM program which has been developed as part of the CDP approval process. The draft ATMIPM is incorporated into this HCP as Appendix D; the Final ATMIPM will be submitted to the Service for review and approval prior to construction of the golf course. The HCP and Implementing Agreement (IA) are not providing coverage for take as a result of chemical usage onsite; however, avoidance and minimization measures developed with the Service are designed to avoid take through minimizing chemical use and conducting regular water quality and sediment testing to assure that deleterious effects to water quality are not occurring.

2.3.1 Mosquito Abatement

CPH has entered into an agreement with the Santa Barbara Coastal Vector Control District (District) for the ongoing abatement of mosquito infestation. The District will apply a micro-biological larvicide-derived bacteria. Currently, the District uses *Bacillus thuringiensis*

var. *israeliensis* (BTI) and/or *Bacillus sphaericus*. Mineral oils (*e.g.*, Golden Bear GB 1111 mosquito larvicidal oil) and insect growth regulators (*e.g.*, Methoprene) will not be used onsite, as these agents are known to negatively impact amphibians. Mosquitofish (*Gambusia affinis*) also will not be used because they may adversely affect amphibians.

2.3.2 Irrigation

Santa Barbara has a Mediterranean climate that is characterized by rainfall in winter and spring and very little rainfall in summer and fall (17 inches annually). In addition, temperatures are very mild year round with annual average lows in the 40s to high 50s (Fahrenheit) and annual average highs in the 60s and 70s. These climactic characteristics allow for the effective management of both warm and cool season turf grasses. Irrigation is needed for both cool and warm season turf grasses. It is very important to follow good irrigation practices, regardless of turf grass species used, so that optimum growth and development of turf grass is obtained. A rapidly growing, competitive turf grass sward will resist insect and weed invasion.

The project will be irrigated with reclaimed water through a computer-controlled irrigation system which maximizes irrigation effectiveness. A uniform application of water is extremely important for maximum efficiency because it is important to avoid wet and dry spots within the sward. An on-site weather station will be installed for optimum data collection by the golf course superintendent. The daily monitoring of evapotranspiration, temperature, humidity, wind speed, and solar radiation levels allow for the most precise irrigation scheduling and reduction of water usage. Proper timing and an adequate amount of irrigation are necessary for optimum growth, maximum quality, and best appearance of the respective turf species.

Turf is weakened in wet spots because of poor soil aeration and root disease that can result in the invasion of shallow-rooted weeds such as crabgrass, annual bluegrass, and *Oxalis* sp. Also, runoff from over-irrigated areas is wasteful and results in accumulation of water in low parts of the sward. In contrast, dry sites are characterized by turf of poor color, density, and uniformity that allows the invasion of deep-rooted weeds such as Bermuda grass, dandelions, plantains, clover, knotweed, and yarrow.

In order to minimize water quality impacts associated with golf course irrigation, the irrigation will be conducted deeply but infrequently. Irrigation will be conducted late at night or early in the morning in order to achieve better distribution due to higher water pressure,

limited wind, and minimal water loss due to evapotranspiration. Runoff will be avoided by matching water application rates to soil infiltration rates.

A preventative irrigation system maintenance program will be instituted with periodic checks and adjustments as follows:

Irrigation Heads	Weekly
Pump Stations	Weekly
Central Controller	Daily
Scheduling	Daily
Injection System	Daily (if applicable)
Satellite Controller	Weekly
Pressure Relief/Release Valves	Bimonthly
Air Release Valves	Semiannually
Lake Circulation System	Monthly
Weather Station	Monthly

2.3.3 Mowing

Tees will be mowed to a height of 1/4 inch to 3/8 inch (depending on agronomic conditions) a minimum of three times per week. Tees will be hand-mowed or triplex-mowed depending on design contours and tee square footage. All tees will be cross-cut for aesthetic presentation and promotion of turf quality.

Fairways will be mowed a minimum of three times per week. Fairways will be mowed to a height of 3/8 inch to 5/8 inch (depending on turf conditions and playability) with lightweight mowing units to reduce compaction and promote healthy turf conditions. All fairways will be crosscut for aesthetic presentation and promotion of turf quality.

Greens will be hand-mowed and/or triplex-mowed daily. Standard green mowing height is 1/8 inch to 3/16 inch. All collars will be hand-mowed to a height of 3/8 inch, a minimum of three times per week. All greens will be crosscut for aesthetic presentation and promotion of turf quality.

Roughs will be mowed to a height of 1 to 4 inches twice per week. Roughs will be mowed with reel mowing units and may be crosscut for aesthetic presentation and promotion of turf quality.

Mowing within the golf course roughs will be limited to dry, sunny days in order to avoid impacts to any California red-legged frogs hidden by the grass. Because grass within the tees, fairways, and greens will only be 1/4 inch to 5/8 inch, it is not anticipated that restrictions to mowing these areas will be required.

Specialized Procedures

Aerification of the entire course will be done in stages with greens being done two to three times a year, and tees and fairways twice each year (fall and spring). A stand-alone unit or tractor-pulled unit will be used to implement aerification procedures after dew has evaporated in the morning and before dew sets in the evening.

Verticutting typically is implemented only on greens with varying degrees of frequency depending on turf growth rates, mowing heights, and amount of grooming implemented in the mowing program. Tees and fairways may require verticutting depending on turf varieties selected. Verticutting will be performed with the triplex mowers (with the blades vertical instead of horizontal).

Greens will be lightly topdressed with sand once or twice a month to minimize the accumulation of thatch and maximize the consistency of the putting surface. Topdressing of greens will be implemented by pulling a sanding meter-matic behind a turf utility vehicle. Tees and fairways are to be topdressed twice annually to coincide with aerification. Tees will be topdressed with sand or compost material. Fairways will be topdressed with compost materials to add organic matter.

2.3.4 Composting

Grass clippings, fallen leaves, and branches as well as various other plant materials such as weeds will be composted onsite at the turf farm. These materials will be piled in rows. Approximately every two weeks, the piles will be turned over, either by hand or with a tractor. Water may be sprinkled over the top during dry periods in order to maintain a high level of humidity within the piles. As the materials decompose, the organic humus will be used within the project site for topdressing of fairways and tees and as a nutrient source within ornamental landscape areas.

2.3.5 Bunker Maintenance

All bunker bases will be machine raked with bunker faces being hand raked. All bunker faces will be edged weekly or as agronomic conditions dictate. Depth of sand is adjusted as necessary to maintain uniform playing conditions (approximately 4 to 6 inches).

2.3.6 Maintenance Crew Training

Before maintenance work commences onsite, or before a new maintenance crew staff member begins working onsite, the Service-approved biologist will be directly responsible for educating and training maintenance crew members regarding the conditions associated with the HCP and Implementing Agreement, final ATMIPM program, the BELP, and the Dos Pueblos Golf Links conditions of approval. Before maintenance work commences onsite, or before a new maintenance crew staff member begins working onsite, maintenance crew staff members will be made aware of all restrictions specified in the plans and permits. The Service-approved biologist shall conduct meetings as warranted so he or she may cover any changes to instituted programs and evaluate past employee performance in this area.

2.3.7 Golf Ball Recovery

Designated maintenance crew members will enter the out-of-bounds areas on foot to retrieve errant balls on a quarterly basis. Out-of-bounds areas include wetlands, drainages, native restoration areas, and the harbor seal rookery. Golf ball retrieval will not be conducted at the harbor seal rookery during the harbor seal pupping/breeding season (February 1 through May 31). Golf ball retrieval at the reclaimed water storage lake will be conducted on an as-needed basis (not more than annually) during maximum lake drawdown. Golf balls will not be retrieved from Eagle Canyon.

2.3.8 Aquatic Weed Control

Reclaimed Water Storage Lake

Aquatic weed (algae, duckweed, etc.) control within the reclaimed water storage lake will follow a non-chemical strategy exclusively. This strategy will include one or more of the following: a circulation system to increase water movement, an aeration system to increase the oxygen levels, shading (approved non-toxic blue colorants such as Aquashade) to reduce

the potential for algae and other aquatic weeds, and removal of aquatic weeds by hand (*i.e.*, skimming the surface). Regular lake drawdown of between two and 10 feet, and the concrete liner to a depth of six feet, will limit the formation of rooted aquatic plants as well as reduce the potential for the development of bullfrog (*Rana catesbeiana*) habitat. Minimum oxygen levels are targeted at five parts per million (ppm).

To avoid and minimize adverse impacts to water quality at the reclaimed water storage lake, chemical spraying on turf areas adjacent to the lake will be prohibited within 25 feet of the lake edge. Only spot spraying with a wick applicator will take place within the 25-foot buffer; however, spot spraying will be prohibited within 10 feet of the lake edge.

Eagle Canyon

No aquatic weed control will be conducted in Eagle Canyon.

2.3.9 Pest Management

Pests will be controlled to a large extent through the proper selection of pest-resistant or pest-tolerant plants. During the grow-in period, careful consideration will be given to the types of turf and plant material selected in order to create an environment ill-suited for common pest proliferation.

All golf course maintenance procedures and materials will be conducted and used in accordance with the County-approved draft ATMIPM program which has been developed as part of the CDP approval process. The draft ATMIPM has been previously provided to the Service. The final ATMIPM will be submitted to the Service for review and approval prior to construction of the golf course. The HCP and Implementing Agreement (IA) are not providing coverage for take as a result of chemical usage onsite; however, avoidance and minimization measures developed with the Service are designed to avoid take through minimizing chemical use and conducting regular water quality testing to assure that deleterious effects to water quality are not occurring.

Bullfrogs

A bullfrog monitoring and removal program will be implemented for areas with year-round water: the reclaimed water storage lake (see Section 5.1.3) and Eagle Canyon (see Section 6.0). Any bullfrogs found on the site will be removed, including those found in other areas of the property.

2.3.10 Desiltation Basins

The three desiltation basins (see Site Plan), located within the fairway of the 12th hole, at the western end of the driving range and at the eastern end of the driving range, are designed to capture two-year storm events and then release the captured storm water over the next 24 to 36 hours. Storm flows greater than two-year events will overflow the basins via a pipe and/or spillway channel. Overflow pipes and spillways are designed to accommodate a peak 100-year storm event. Therefore, water is expected to pond within the basins for a period of 24 to 36 hours after a two-year or greater storm event. All flows exiting the desiltation basins will pass through an energy dissipater in order to minimize downstream erosion.

The desiltation basins and appurtenances will be cleaned and sediment removed on an as-needed basis. A small, rubber-tired backhoe or loader will be used within the sediment storage area to remove sediment to a minimum storage depth of one (1) foot. Excess sediment and trash will be transported from the site in a dump truck and will be disposed of in accordance with local regulations.

SECTION 3.0
PROPOSED CHEMICAL USES ONSITE

The permit is not providing coverage for take due to chemical (*i.e.*, fertilizers, herbicide and pesticide) use. The only way to ensure "zero take" from chemical use is to ensure that no detectable amounts of such chemicals reach those areas onsite that are known to be used by the tidewater goby and California red-legged frog or are believed to have a high potential for use by the California red-legged frog. Eagle Canyon is known habitat for both species. In conjunction with the Service, CPH has identified two additional drainages onsite that are considered to have a high potential for use by the California red-legged frog. The drainages identified are Drainage 4 North and Tomate Canyon. Based on topography, buffers have been established for each of the three drainages and are identified on the attached site plan. Use of certain chemicals within these buffers shall trigger testing to ensure that these chemicals are not reaching the drainages in these areas.

The draft ATMIPM program shall govern the application of fertilizers, herbicides and pesticides onsite. The final ATMIPM program shall be submitted to the Service, and the County of Santa Barbara for review and written approval 90 days prior to commencement of turf maintenance activities.

3.1 Chemical Use Plan

The draft ATMIPM will be revised to include provisions that will identify the buffer areas for Eagle Canyon, Tomate Canyon and Drainage 4 North as identified on the attached site plan. The final ATMIPM shall provide three groupings of chemicals that could possibly be used on Dos Pueblos. The first group will consist of those chemicals currently included in the draft ATMIPM that would be prohibited from usage upon the entire project site. The second group will consist of "preferred use" chemicals that have been identified as being less toxic to fish and amphibians. CPH will use these chemicals first over more toxic chemicals when addressing a specific problem. The third group shall consist of those chemicals, known to be more toxic to fish and amphibians than the second group, that can be used onsite only after a "preferred use" chemical has been used and proven ineffective. The use of both "preferred use" and the more toxic chemicals within the buffer areas identified on the attached Site Plan will trigger the chemical sampling outlined below in *Section 3.1.1*. Use of any of the more toxic chemicals will require a demonstration of need that a less toxic chemical (from the preferred use list) will not produce the required affect. Chemicals not included in the second and third groups may be proposed in the final ATMIPM without amending the HCP itself.

CPH, in coordination with the Service, shall assign each new chemical to the appropriate category at that time.

Chemicals that will not be included in the final ATMIPM:
Methyl bromide
Atrazine
Chlorpyrifos

"Preferred use" chemicals:
Mancozeb
Procopiconazole
Triadimefon
Thiophanate-Methomyl
Thiophanate-Methyl
Iprodione (Rovral)
Vinclozolin
Metalaxyl
Napropamide (Devrinol)
Bentazon (Basagran) 4 EC
Bentazon plus 2,4 D
Dicamba (Banavel 4-S)
Dicamba and 2,4 D (Trimec)
Glyophosate (Roundup)
Mecoprop (MCCP)
MSMA
2,4-D Water soluble Amines (Weedar 64)
2,4-D plus MCCP (MCPP)
2,4-D plus MCCP (MCPP) plus Dicamba
2,4-D plusTriclopyr

More toxic chemicals:
PCNB
Pendimethalin (Pre-M)
Captan
Benefin and Trifluralin (Team 2G)
Dithiopyr (Dimension)
Pronamide (Kerb) 50 WSP)

Acephate
Carbaryl (Chipco Sevin)
Cyfluthrin (Tempo)
Fluvalinate (Mavrik Auqaflow)
Trichlorfon (Dylox)
Myclobutanil
2,4-D low-volatile esters (Weedone LV4)
Chlorothalonil
Fenarimol
Nclozolin
Thiram
Fosetyl-al: (Fosetyl-aluminum)
Benefin (Balan)
Bensulide (Presan)
DCPA (Dacthal)
Isoxaben (Gallery)
Oryzalin (Surflan)
Oxadiazon (Ronstar)
DSMA (Methar)
Fluazifop (Fusalide)

3.1.1 Chemical Sampling

A water quality and sediment testing program will be implemented to ensure that no adverse water quality impacts within the golf course or downstream offsite result from irrigation and chemical use. Surface water and sediment testing will be implemented in accordance with the County- and Service-approved draft ATMIPM program, as specified in *Table 3*; additional sampling will be implemented when certain chemicals are used within specified buffer areas on site. Surface water and sediment testing will be conducted prior to use of any chemicals on the golf course and will be used as baseline data. These data will be supplied to the Service before golf course construction begins. Surface water and sediment sampling and testing will be conducted by a third-party designee. Surface water and sediment testing will be implemented by an EPA-approved laboratory and the samples will be collected and analyzed in accordance with approved EPA methodologies. Samples will be taken from locations designated by the Service and County of Santa Barbara Department of Planning and Development (P&D) (see Site Plan). Sampling locations include the vernal pool; water

storage lake; Eagle Canyon at the northern property line, north of the railroad and in the lagoon at the mouth of Eagle Canyon; Tomate Canyon at the northern property line, north of the railroad and at the mouth of the creek; and Drainage 4 North at the northern property line and north of the railroad.

TABLE 3. SURFACE WATER AND SEDIMENT SAMPLING SCHEDULE

Location	*Parameter*	*Species*	*Frequency*
Creeks of seasonal water flow (Tomate Canyon, Drainage 4 North)	Acute Toxicity	Algae, Vertebrate, Invertebrate	Annually at first creek flush. Monthly (water quality) with most sensitive species until flow ceases. Sediment samples conducted quarterly.
	Chronic Toxicity	Algae, Vertebrate, Invertebrate	Twice annually at first creek flush and again approx. 90 days after first test.
	Nutrient (N, P), Dissolved Oxygen, pH		Monthly at first creek flush and until flow ceases.
Creeks of perennial water flow (Eagle Canyon)	Acute Toxicity	Algae, Vertebrate, Invertebrate	Annually at first creek flush. Quarterly thereafter.
		Species of highest sensitivity	Repeated monthly.
	Chronic Toxicity	Algae, Vertebrate, Invertebrate	Annually at first creek flush. Quarterly thereafter.
	Nutrient (N, P), Dissolved Oxygen, pH		Monthly.
On-site bodies of water (vernal pool and reclaimed water storage lake)	Acute Toxicity	Algae, Vertebrate, Invertebrate	Quarterly.
		Species of highest sensitivity	Repeated monthly.
	Chronic Toxicity Nutrient (N, P) Dissolved Oxygen, pH	Algae, Vertebrate, Invertebrate	Quarterly Monthly

The parameters and frequency of water quality and sediment testing are depicted above in *Table 3*. Sediment sampling will be conducted quarterly and surface water quality monitoring will be conducted monthly for the first two years of golf course operation. For Tomate Canyon, Drainage 4 North and Eagle Canyon, if tests reveal that levels of nitrites, nitrates and phosphates are greater than the EPA standards for aquatic life, if dissolved oxygen levels are less than 5 parts per million (ppm), or if pH levels are less than 6.0 or greater than 9.0 (when water entering the property from the north is within acceptable liits for these parameters), operation of the golf course shall be modified in accordance with the final ATMIPM until testing shows no adverse impacts. For the vernal pool and the water storage lake, if tests reveal that levels of nitrites, nitrates and phosphates are greater than the EPA standards for aquatic life, if dissolved oxygen levels are less than 5 parts per million (ppm), or if pH levels are less than 6.0 or greater than 9.0, operation of the golf course shall be modified in accordance with the final ATMIPM until testing shows no adverse impacts. Surface water testing will be conducted monthly at first creek flush and until flow ceases (or for Eagle Canyon Creek, monthly whenever standing water is present); sediment testing will be conducted quarterly. Surface water quality sampling frequency may be reduced to a bi-monthly basis (once every two months) if after two years it is determined by CPH that no adverse impacts (*i.e.*, no evidence of background levels being exceeded) are occurring, and if approved in writing by the Service and P&D. Testing may be further reduced (less frequent than bi-monthly) if approved in writing by the Service and P&D. Sediment sampling frequency may be reduced to a semi-annual basis (twice every year) if after two years it is determined by CPH that no adverse impacts (*i.e.*, no evidence of background levels being exceeded) are occurring, and if approved in writing by the Service. Sampling may be further reduced if approved in writing by the Service. Sampling frequency may only be reduced if there are no changes in chemical application methods and amounts.

In addition to those parameters identified in *Table 3*, surface water and sediments in Eagle Canyon, Tomate Canyon and Drainage 4 North will also be tested for all chemicals used within the buffer areas and any additives (*e.g.*, surfactants, carrier oils, spreading agents) to be used within buffer areas. Testing will be conducted within 48 hours of checmical use in buffer areas. Standard EPA panels will be run for the chemicals. The water and sediment sampling results shall be provided to the Service, as described in Section 8.2.

3.1.2 Chemical Use Onsite

3.1.2.1 Fertilizers

Landscape Buffer and Revegetation Areas

Within the revegetation areas Gro-Power-Plus fertilizer will be mixed with the seed for germination, and Gro-Power fertilizer tablets will be planted with oak seedlings and trees. No additional applications of fertilizer are anticipated for the revegetation areas.

Golf Course Areas

Fertilizers will be applied to the golf course on an as-needed basis according to weather and turf conditions as approved by the Service and County in the final ATMIPM program. Fertilizers may be applied to the tees, fairways, and roughs via the irrigation system (*i.e.*, the fertilizer will be diluted prior to application). Diluted in this manner, only low concentrations of fertilizers will be present on the surface of the grass. The irrigation system is designed to provide just enough water for proper turf growth with no runoff. Granular fertilizers may also be applied using rotary-type spreaders. When granular fertilizers are used, they will be applied after the morning dew has evaporated and before the evening dew sets. Regular watering of the golf course would cause these fertilizers to soak into the soil and allow their use by plants. Neither liquid nor dry fertilizers will be applied within three (3) days of (before or after) forecast rainfall events.

Greens will be foliar-fed (*e.g.*, in crystal form) every two weeks and immediately watered in after the morning dew has evaporated and before the evening dew sets. Drains under the greens will not daylight but will terminate under the adjacent fairway surface. Thus, no runoff of fertilizers is anticipated.

3.1.2.2 Pest Management

Pests will be controlled to a large extent through the proper selection of pest-resistant or pest-tolerant plants. During the grow-in period, careful consideration will be given to the types of turf and plant material selected in order to create an environment ill-suited for common pest proliferation.

Application of herbicides and pesticides will be conducted in accordance with the Service- and County- and Service-approved final ATMIPM program at the minimum application rate necessary. Only those herbicides and pesticides approved by the Service will be used onsite. These chemicals would be applied only to specific locations, as needed, in accordance with label instructions, and during daylight hours, thereby reducing the possibility that California red-legged frogs could come in contact with these chemicals in concentrations that could have adverse effects on the species. Within the sensitive natural habitats, mitigation areas, and landscaped buffer areas, herbicides would be hand-applied to individual plants. Within the golf course areas (par-three course, 18-hole course, putting green, driving range, and turf farm), herbicides would be applied from a boom-sprayer (15 to 18 feet in width) attached to a 250-gallon tank on the back of a golf course utility truck.

The use of chemicals will be conducted in accordance with label instructions. It is important to note that on-site areas considered to be highly sensitive such as buffer zones, native areas, revegetation areas, and natural drainage areas will be minimally treated with chemicals as described above (*i.e.*, chemicals will be applied by hand during favorable conditions) and in the BELP. Those areas in which maintained turf and sensitive areas merge (a width of 25 feet) will be spot sprayed only when necessary in order to minimize the chemical effects to the area, if any. In all cases, spot treatment in these areas, if applicable, shall always be in compliance with the requirements of the BELP.

In order to reduce the possibility of exposing California red-legged frogs to pesticides and herbicides, the following restrictions will govern the application of these chemicals onsite and be incorporated into the final ATMIPM program:

- During the rainy season (November through April), no herbicides or pesticides will be applied within 24 hours prior to forecasted rain or within 24 hours after rainfall.

- Application of herbicides and pesticides will be administered after the morning dew has evaporated and before the evening dew has set.

- In no case shall any spraying of chemicals take place anywhere onsite when wind conditions exceed five (5) miles per hour (mph).

- Within the landscape buffer and revegetation areas, the herbicide will be hand-applied directly to individual plants, and only when winds do not exceed five (5) mph, no rain is expected for at least 24 hours, and standing water is not present. Only Karmex, Roundup, or Rodeo will be applied in these areas unless replaced by new materials.

Insects

A variety of insect pests may need to be controlled on the golf course. Because turf grasses have not yet been selected, it is impossible to identify potential treatments without knowledge of the specific environmental and agronomic factors present at the time of infestation. Once the turf grasses are selected the final ATMIPM program will be customized to be specific to the project and will be submitted to the Service and P&D for review and written approval at least 90 days prior to commencement of turf management activities.

Rodents

Prior to the use of rodenticides, traps will be placed to eradicate rodents on site. If the trapping efforts fail, rodenticides included in the Final ATMIPM will be applied to the golf course on an as-needed basis. Rodenticide materials will include zinc phosphide and aluminum phosphide. The golf course will be inspected daily for five days after rodenticides are used. Any rodent carcasses found will be removed immediately to sealed trash containers.

3.2 Modification of Operations

If, at any time, the levels of any chemical(s) in the surface water and sediment samples exceed background levels due to golf course operations, chemical application will cease and application rates and methods will be changed in accordance with adaptive management measures described below in *Section 8.1.3* to prevent future exceedence of background levels.

SECTION 4.0
BIOLOGICAL DATA

The area surrounding the project site is primarily rural. The Eagle Canyon Ranch is adjacent on the east and on the north across U.S. Highway 101, and the Morehart Land Company holdings are to the west. The Bacara (formerly Santa Barbara Club) Resort & Spa Hotel lies to the east of the Eagle Canyon Ranch and south of U.S. Highway 101. The area is characterized by a Mediterranean climate with an average annual rainfall of 17 inches. Biological resources of the site are described in detail in the FEIR (Fugro-McClelland 1993) and are summarized below along with information from recent surveys.

4.1 Project Site

4.1.1 Vegetation

Past land uses have greatly influenced the distribution and variety of habitats and vegetation onsite. Interface (1992) recorded a total of 133 plant species, of which 78 (59 percent) are native. Vegetation communities are described in accordance with Holland (1986). The predominant vegetation community is annual (non-native) grassland. The drainages are lined with Venturan coastal sage scrub, and several contain southern willow scrub and/or freshwater marsh as well, depending on the size of the watershed. Eagle Canyon has an overstory of eucalyptus trees both north and south of the railroad with southern willow scrub near U.S. Highway 101. Coastal brackish marsh occurs south of the railroad along the margin of the creek lagoon. A manmade vernal pool is located immediately south of the railroad under and immediately adjacent to a wooden bridge. Several small, artificially created, disturbed wetlands, dominated by non-native species, have recently developed within the bermed former tank farms. Small, isolated patches of native grassland are scattered over the property, occurring primarily within expanses of coastal sage scrub and annual (non-native) grassland. Specimen non-native trees, planted as windbreaks as part of the previous site development, are also scattered throughout the property. *Table 4* below describes the land cover present at the site, including developed lands associated with ARCO's oil drilling operations.

TABLE 4. LAND COVER BY ACREAGE

Land Cover	Acreage[1]
Grassland	127.3 acres
Venturan coastal sage scrub	35 acres
Southern willow scrub	1.3 acres
Freshwater marsh	0.2 acre
Man-made vernal pool	0.1 acre
Disturbed wetlands	2.2 acres
Coastal brackish marsh	0.05 acre
Developed lands	42 acres
Total	**208 acres**

[1] *Column does not total precisely due to rounding.*

The annual (non-native) grassland is the most common habitat type, occupying approximately 127 acres (61 percent). This vegetation community is dominated by wild slender oats (*Avena barbata*), soft chess (*Bromus hordeaceus*), ripgut grass (*Bromus diandrus*), California brome (*Bromus carinatus* var. *carinatus*), Italian ryegrass (*Lolium multiflorum*), rattail fescue (*Vulpia* spp.), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), and hare barley (*Hordeum leporinum*). Other herbaceous species include verbena (*Verbena lasiostachys*), red-stemmed filaree (*Erodium cicutarium*), black mustard (*Brassica nigra*), California burclover (*Medicago polymorpha*), rose clover (*Trifolium hirtum*), and purple vetch (*Vicia benghalensis*).

The Venturan coastal sage scrub is the second most common vegetation community onsite, occupying approximately 35 acres (17 percent) of coastal bluffs and drainage corridors. This habitat is dominated by coyote brush (*Baccharis pilularis* ssp. *consanguinea*) and California sagebrush (*Artemisia californica*). Other species include coast goldenbush (*Isocoma veneta*), California figwort (*Scrophularia californica*), poison oak (*Toxicodendron diversilobum*), nightshade (*Solanum douglasii*), sawtooth goldenbush (*Hazardia squarrosa*), and giant wild rye (*Elymus condensatus*).

Southern willow scrub habitat comprises approximately 1.3 acres onsite and is dominated by arroyo willow (*Salix lasiolepis*). Other species include wild rose (*Rosa californica*), mulefat (*Baccharis salicifolia*), coyote brush, Mexican elderberry (*Sambucus mexicana*), poison oak, castor bean (*Ricinus communis*), toad rush (*Juncus bufonius*), hyssop loosestrife (*Lythrum hyssopifolium*), meadow barley (*Hordeum brachyantherum*), alternate-leaf flatsedge (*Cyperus alternifolius*), and scarlet pimpernel (*Anagallis arvensis*).

Freshwater marshes occupy approximately 0.2 acre at six locations onsite. Typical species include curly dock (*Rumex crispus*), broad-leaved cattail (*Typha latifolia*), alkali bulrush (*Scirpus robustus*), slender rush (*Juncus tenuis*), toad rush, hyssop loosestrife, Harding grass (*Phalaris aquatica*), annual rabbit's-foot grass (*Polypogon monspeliensis*), creeping spikerush (*Eleocharis macrostachya*), and poison hemlock (*Conium maculatum*).

A man-made vernal pool lies at the southern end of the bridge that passes over the railroad tracks. The vernal pool contains spikerush (*Eleocharis* spp.) and rushes (*Juncus* spp.) and is seasonally inundated. The vernal pool occupies 0.1 acre.

Five isolated, artificially created, disturbed wetlands, occupying approximately 1.1 acres, have developed within bermed areas previously utilized for oil field production activities. These areas contain Italian ryegrass (*Lolium multiflorum*), curly dock, Bermuda grass (*Cynodon dactylon*), soft chess, English plantain (*Plantago lanceolata*), bull thistle (*Cirsium vulgare*), California burclover, annual rabbit's-foot grass, brass buttons (*Cotula coronopifolia*), and Harding grass. In addition, approximately 1.1 acres of disturbed wetlands occur in Tomate Canyon. The vegetation is dominated by invasive, non-native species: black mustard, castor-bean, annual rabbit's foot grass, and bristly ox-tongue (*Picris echioides*) as well as the native cocklebur (*Xanthium strumarium*). This wetland appears to have suffered from prolonged disturbance.

One small area of coastal brackish marsh is located south of the railroad right-of-way, on the western side of Eagle Canyon Creek. Broad-leaved cattail and bulrush (*Scirpus* spp.) dominate the vegetation within the area inundated by the coastal lagoon. Coastal brackish marsh occupies 0.05 acre.

4.1.2 Wildlife

Thirty-five bird and 17 mammal species were directly observed or their presence was determined indirectly based on signs (*e.g.,* tracks, scat, bones, feathers, etc.). The bird species include a variety of upland birds, such as mourning dove (*Zenaida macroura*), killdeer (*Charadrius vociferus*), black phoebe (*Sayornis nigricans*), western scrub jay (*Aphelocoma californica*), western meadowlark (*Sturnella neglecta*), house finch (*Carpodacus mexicanus*), and song sparrow (*Melospiza melodia*). Raptors include American kestrel (*Falco sparverius*), white-tailed kite (*Elanus caeruleus*), and red-tailed hawk (*Buteo jamaicensis*). Bird species observed in the vicinity of Eagle Canyon and the Pacific Ocean include California brown pelican (*Pelecanus occidentalis californicus*), mallard (*Anas platyrhynchos*), western gull (*Larus occidentalis*), spotted sandpiper (*Actitis macularia*), and great blue heron (*Ardea herodias*). Common mammals include striped skunk (*Mephitis mephitis*), coyote (*Canis latrans*), ground squirrel (*Spermophilus beechyi*), Botta's pocket gopher (*Thomomys bottae*), and brush rabbit (*Sylvilagus bachmani*). In addition, the California side-blotched lizard (*Uta stansburiana elegans*), western fence lizard (*Sceloporus occidentalis longipes*), Pacific treefrog (*Pseudacris regilla*), California red-legged frog, bobcat (*Lynx rufus*), and Monarch butterfly (*Danaus plexippus*) were observed.

A harbor seal (*Phoca vitulina*) haulout is located on the beach just west of Tomate Canyon. This species is protected under the Marine Mammal Protection Act of 1976. The ringtail (*Bassariscus astutus*) and white-tailed kite are Fully Protected under Section 4700 of the California Fish and Game Code. Although not observed onsite since 1991 (Interface 1991), ringtails frequent riparian habitats and may be resident in the more densely vegetated portions of Eagle Canyon; however, this species is mobile and nocturnal and, if present, will not be adversely impacted by implementation of the RAP or the proposed golf course project. White-tailed kites forage over the site and perch in trees onsite (SAIC 1999a). Neither implementation of the RAP nor the proposed golf course project shall limit the potential for white-tailed kites to forage over the project site. In accordance with the BELP, a qualified wildlife biologist shall evaluate any trees proposed for removal for use by sensitive bird species, including the white-tailed kite, prior to removal of the trees. In the event that these trees are used, or appear to have recently been used, as nesting sites by any sensitive bird species, including the white-tailed kite, the trees shall not be removed until the nests have been abandoned. Monarch butterflies (state Special Animal) winter along the coast between November and February, primarily in eucalyptus groves. This species has been observed to aggregate in eucalyptus trees north of the railroad crossing of Eagle Canyon. Habitat for the

butterflies and ringtail would not be affected by project construction and/or operation. In addition, no construction activities shall occur within 50 feet of the Monarch roosting trees, located north of the railroad in Eagle Canyon, between October 1 and January 31, in accordance with Condition 9 of the golf course CDP.

4.1.3 Threatened or Endangered Species

No state- or federally-listed plant species are known to occur onsite. Three federally-listed animal species have been observed on the project site, and two additional species could be present. These species are listed below.

Common Name	Scientific Name	Known Onsite
California brown pelican	*Pelecanus occidentalis californicus*	Yes
Western snowy plover	*Charadrius alexandrinus nivosus*	No
California red-legged frog	*Rana aurora draytonii*	Yes
Tidewater goby	*Eucyclogobius newberryi*	Yes
Steelhead trout	*Oncorhynchus mykiss*	No

California brown pelicans, state- and federally-listed as endangered, are a year-round resident along the California coast, but population levels fluctuate seasonally. They nest primarily in Baja California, but some nesting occurs on the Channel Islands (Lehman 1994; Small 1994). Brown pelicans forage over near shore waters in the project area and roost on the beach near Tomate Canyon. They are not known to use any upland habitats at the site, and no construction activities for the public access trail would occur on the beach where the pelicans roost. Increased human use of the beach has the potential to disturb California brown pelicans roosting, resting, or preening on the beach. The anticipated increase in public use of the beach over current use levels is not expected to be large and would not cause take of the brown pelican. Furthermore, closure of access to the beach from the west and via the Eagle Canyon vertical access from February through May would reduce the potential for disturbance even more.

The western snowy plover, federally-listed as threatened and a state Species of Species Concern (SSC), is a winter visitor to beaches in the region with no recent records of use in the project area. Western snowy plovers regularly winter near Devereux Creek and may

occasionally forage west to Bell Canyon (Bowland & Associates 1999), just over a mile east of the project site. This species could, therefore, be a transient winter visitor to local beaches. Snowy plovers forage for small crustaceans and worms along the surf line and adjacent moist sands; they also occasionally catch flying insects and beetles (Bent 1928). Foraging may occur at the surf line, in wet sand, and on the mud flats surrounding lakes, ponds, and estuaries. Nesting habitat is limited to depressions in the sand above the drift zone. Due to the presence of the cliffs, no such habitat occurs at the project site. No construction activities associated with the public access trail would occur on the beach during the winter when snowy plovers potentially could use the site for foraging. The low increase in public use of the beach that could result from the project is not expected to cause take of the snowy plover, if any are present.

Steelhead trout, federally-listed as endangered and a state-designated SSC, are known to use a number of streams in the region (Titus, *et al.* unpublished), at least in wetter years, but are not known to occur in Eagle Canyon Creek. The culvert under U.S. Highway 101 has a long sloping concrete section at the north end that may pose a barrier to steelhead trout migration upstream under some flow conditions. This species potentially could use Eagle Canyon Creek in wet years. The creek in the project area would provide passage for adults and juveniles during migration; no spawning habitat is present adjacent to the project. Eagle Canyon Creek would not be altered by construction activities, and increased public access to the beach is not expected to affect steelhead trout migration to or from the creek (if the species were to use this creek). Construction is anticipated to have no effects on steelhead trout because activities associated with installing the Eagle Canyon water pipelines would not occur in the creek and would be performed during the dry season when steelhead would not be present in the area. No barriers to steelhead trout would be introduced into the creek. Steelhead trout are under the jurisdiction of the National Marine Fisheries Service. Measures incorporated in the HCP for the California red-legged frog and tidewater goby will avoid impacts to and take of this species. Public access during the winter, when steelhead trout could enter the creek, is not expected to have any impacts on the trout because higher water flows necessary for breaching the bar at the creek mouth and trout migration would prevent human entry into the creek and would flush away any trash. The vertical access at the beach at the mouth of Eagle Canyon would be closed from February through May, thereby reducing the potential for any effects on steelhead even further.

The California brown pelican, western snowy plover, and steelhead trout would not be taken by implementation of the RAP nor construction or operation of the Dos Pueblos Golf Links

project as described above and thus will not be listed on the incidental take permit, as no take of these species will be authorized.

The California red-legged frog (state-designated SSC and federally-listed as threatened), and the tidewater goby (state-designated SSC and federally-listed as endangered) have been observed in Eagle Canyon Creek. California red-legged frog and tidewater goby are discussed in more detail below.

4.2 Listed Species

4.2.1 California Red-legged Frog

Species Description

The California red-legged frog was proposed for listing as endangered on 2 February 1994 (59 Federal Register [FR] 4888). The species was listed as threatened on 23 May 1996, and the final rule became effective on 24 June 1996. Critical habitat has been designated for the California red-legged frog (66 FR 14626). This species is a state-designated SSC. The following description was taken primarily from the Biological Opinion (1-8-96-F-16) for the Coastal Aqueduct (USFWS 1996a) and the final rule (61 FR 25813).

The California red-legged frog is one of two subspecies of the red-legged frog (*Rana aurora*) found on the Pacific coast. It is a fairly large frog with adults reaching five (5) inches (snout to vent length). The skin of the back is brown, gray, olive, red, or orange with dark flecks or spots. A prominent dorsolateral fold of skin extends from each eye to the hip. The underside is white, often with patches of bright red or orange on the abdomen and hind legs. The final rule states that the species occupies a fairly distinct habitat, combining both specific aquatic and riparian components. Adult breeding habitat generally consists of dense, shrubby or emergent riparian vegetation closely associated with deep (more than 0.7 m [two feet] in depth), still, or slowly moving water. The riparian vegetation that provides the preferred structural layers typically includes arroyo willow, although cattails and bulrushes are also considered important. Non-breeding habitat for the California red-legged frog may include ephemeral streams or ponds. Juvenile California red-legged frogs appear to prefer aquatic habitats that are open and shallow with dense submergent vegetation (Jennings and Hayes 1994). However, recent observations conveyed to the Service through a variety of sources indicate that California red-legged frogs will occur in a variety of habitat types where water

is present. Well-vegetated terrestrial areas within the riparian corridor may provide important sheltering habitat during winter.

California red-legged frogs breed from November to March, with the earlier breeding records occurring in southern localities. Eggs hatch in 8 to 14 days and larvae take 3.5 months or longer to metamorphose. California red-legged frogs may live 8 to 10 years. With the drying of creeks and ponds in summer, the frogs disperse upstream and downstream of breeding habitat within creek corridors or overland from ephemeral ponds (or ephemeral or intermittent creeks) to suitable summer habitats (*i.e.*, containing year-round water). Research data from the U.S. Department of the Interior, U.S. Geological Survey, Biological Resources Division indicate that adult California red-legged frogs travel, on average, approximately 25 meters (82 feet) from a breeding pond (Bulger 1999). They take cover in small mammal burrows and moist leaf litter (up to 30 m [100 feet] from water) in dense riparian vegetation, but will use other cover sites when traveling overland. After winter rains begin, California red-legged frogs may move away from aquatic habitats and can travel one mile from those habitats (USFWS 1997). Juveniles may also disperse away from their natal habitats shortly after metamorphosis in July-August. The survival rate of frogs that disperse overland, however, could be very low if no habitat suitable for their survival were present within about one mile.

The historical range of the California red-legged frog extended from the vicinity of Point Reyes National Seashore, Marin County, California on the coast and from the vicinity of Redding, Shasta County, California inland southward to northwestern Baja California, Mexico. The species has sustained a 70 percent reduction in its geographic range in California as a result of several factors acting singly or in combination. Habitat loss and alteration, combined with over-exploitation and introduction of exotic predators, were significant factors in its decline in the early to mid 1900s. California red-legged frogs were probably extirpated from the Central Valley in the 1960s. Remaining aggregations of California red-legged frogs in the Sierra Nevada foothills became fragmented and were later eliminated by reservoir construction, increased exotic predator populations, grazing, and drought. The pattern of disappearance of California red-legged frogs in southern California is similar to that seen in the Central Valley, except that urbanization and its associated roadways, large reservoirs, exotic predators, and stream channelization projects were the primary factors causing population declines.

As of 1996, California red-legged frogs were known to occur in 243 streams or drainages from 22 counties in central and southern California. Monterey, San Luis Obispo, and Santa

Barbara counties support the greatest amount of currently occupied habitat. In addition, some frogs still exist in the Sierra Nevada foothills.

Status in Project Area

The proposed project occurs within designated critical habitat for the California red-legged frog. Eagle Canyon contains the only suitable breeding habitat (*i.e.*, containing year-round water) on the project property for the California red-legged frog during normal to wet years. Surveys of the site conducted 11-12 January, 1999, were negative (SAIC 1999a). Subsequent surveys of the creek from U.S. Highway 101 to the ocean found three adult California red-legged frogs in the lagoon on 4 March, 1999; of the three frogs, two were found in amplexus, signifying that Eagle Canyon Creek is a breeding site (SAIC 1999b). However, only one was observed in the lagoon on 19 April, 1999 (SAIC 1999c) and on 25 May, 2000 (Rosie Thompson, SAIC, personal communication). Surveys of Tomate Canyon (12 January, 10 March, and 13, 19, and 22 April 1999) found no suitable habitat, and no individuals were observed in three day and two night surveys (SAIC 1999c). The smaller drainages onsite have no suitable habitat for this species.

California red-legged frogs, primarily juveniles, may disperse from Eagle Canyon, primarily in years when reproductive success is high. No data are available regarding the population size in the area or dispersal patterns, but the number of individuals moving to the west is likely to be low and only occur in some years. Survival of those moving westward from Eagle Canyon (south of U.S. Highway 101) is expected to be very low, however, due to the lack of suitable breeding (*i.e.*, ponded water for five months or longer) habitat between Eagle Canyon and Dos Pueblos Canyon, located about two miles in that direction.

California red-legged frogs are also known from Tecolote and Bell canyons approximately 4,000 and 5,500 feet to the east of Eagle Canyon, respectively, and east of the Bacara project hotel. Individuals (juveniles and adults) from each of the three canyons are likely to move to the other canyons in at least some years, providing genetic exchange and individuals to repopulate local extirpations during droughts.

4.2.2 Tidewater Goby

Species Description

The tidewater goby was federally-listed as endangered on 4 February 1994 (59 FR 5498) and is a state-designated SSC. A proposed rule to delist the species, except in Orange and San Diego counties, was published on 24 June 1999 (64 FR 33816).

Tidewater gobies are small (usually less than 2 inches long) with large pectoral fins and fused pelvic fins that form a sucker-like disk. This is the only goby species along the coast of California that is restricted to low salinity (less than 10 parts per thousand [ppt]) waters. All life stages are completed in these waters (*i.e.,* no marine life history phase occurs), although the fish can live in waters with a salinity of over 40 ppt (Swift et al. 1989). This limits the frequency of genetic exchange between populations and lowers the potential for recolonization of a habitat once a population has been lost. Recolonization, however, has been documented to occur at distances up to 20 km (12 miles) from a source population (Lafferty, *et al*. 1996). Tidewater gobies are benthic (living on the bottom substrate) and inhabit shallow waters (less than three feet deep) that are slow moving to still but not stagnant (Irwin and Soltz 1984). The coastal lagoons where these fish reside are typically closed off from the ocean by sand bars during summer. The substrate is generally sand and mud with abundant emergent and submerged vegetation (Moyle 1976). In addition to living in coastal lagoons, these fish can also move upstream at least five (5) miles as has been documented in San Antonio Creek, Santa Barbara County (Irwin and Soltz 1984).

Spawning in southern California takes place primarily from late April to July, when males dig a vertical burrow approximately 10 to 20 cm (4 to 8 inches) into clean coarse sand for nesting. The eggs are attached to the walls of the burrow by the female and are guarded by the male until they hatch in 9 to 10 days. Larval gobies are pelagic and found around vegetation for a short time and then become benthic (Swift, *et al*. 1989). The life span of a tidewater goby is generally only one (1) year, although individuals in the northern part of their range may live to three (3) years (Lee, *et al.* 1980).

This species formerly inhabited lower stream reaches and coastal lagoons from the Smith River in Del Norte County, California, to Agua Hedionda Lagoon in San Diego County (Lee et al. 1980). Its present distribution extends southward only to the mouth of San Onofre Creek in San Diego County. A reassessment of tidewater goby populations (USFWS 1999)

indicates that 85 of approximately 110 historical populations remain. The remaining tidewater gobies in Orange and San Diego counties are located on the U.S. Marine Corps Base, Camp Pendleton.

Status in Project Area

Eagle Canyon is the only potential tidewater goby habitat onsite. Visual surveys for tidewater gobies were conducted in January 1999, in the lagoon at the mouth of Eagle Canyon while slowly wading in the water (SAIC 1999a). No tidewater gobies were observed during these surveys. Visual surveys as well as dip netting and seining were conducted again on 25 May, 2000, and five tidewater gobies were observed at that time. Populations are also present in Tecolote and Bell Canyons, located approximately 4,000 and 5,500 feet, respectively, to the east of Eagle Canyon.

SECTION 5.0
IMPACTS

5.1 Implementation of Remedial Action Plan

Remediation activities associated with implementing the RAP have the potential to result in take of the California red-legged frog due to injury or death by being run over by construction equipment. Measures to avoid or minimize take of California red-legged frogs are briefly mentioned here and described in greater detail in *Section 6.1.*

Excavating (and refilling with clean fill dirt) the eight areas identified in *Table 2* and depicted on the attached site plan will take approximately two months. Work will be conducted during daylight hours. Juvenile and adult California red-legged frogs that attempt to disperse to the west from Eagle Canyon Creek could be injured or killed by earth-moving equipment or other project vehicles during remediation. The probability of take will be reduced through monitoring by a Service-approved biologist of the work areas prior to and during remediation to check for and relocate any California red-legged frogs found in the work area. Impacts to water quality will be avoided as soil remediation activities will not be conducted south of the railroad right-of-way during the rainy season.

Implementation of the RAP would result in temporary impacts to approximately 0.26 acre of recently-created, isolated, disturbed wetlands at the former (208) tank farm, active (129/208) tank farm and concrete abutment (see attached Site Plan). The Corps authorized ARCO to use Nationwide Permit 38 for the proposed RAP impacts. Mitigation for these impacts was approved by the Corps, the Service and the County. These temporary impacts to potential habitat are expected to have negligible effects on California red-legged frog dispersal and survival as none of the impacts are permanent and none of the impacts would block movement of the frogs across the site. These impacts will be mitigated through revegetation of these areas, as approved by the Corps, the Service and the County.

5.2 Golf Links Construction

Construction activities associated with developing the coastal access in Eagle Canyon, installing the water pipelines across Eagle Canyon Creek, and building the golf course on the coastal terrace have the potential to result in take of the California red-legged frog and tidewater goby. Measures to avoid or minimize take of California red-legged frogs and tidewater gobies are briefly mentioned here and described in greater detail in *Section 6.1.*

5.2.1 Golf Course

Clearing and grading for golf course construction will affect 115 acres (none of which is habitat for the tidewater goby or breeding habitat for the California red-legged frog) and will take approximately 12 months. Work would be conducted during daylight hours. Juvenile and adult California red-legged frogs that attempt to disperse to the west from Eagle Canyon Creek could be injured or killed by earth-moving equipment or other project vehicles during construction. The probability of take will be reduced through monitoring by a Service-approved biologist of the work areas prior to and during construction to check for and relocate any California red-legged frogs found in the work area.

Construction activities will permanently impact 0.18 acre of ephemeral stream channel, 0.03 acre of unvegetated intermittent stream channel, and 0.19 acre of vegetated intermittent stream channel (southern willow scrub) and will temporarily impact 0.001 acre of ephemeral stream channel, 0.005 acre of unvegetated intermittent stream channel, and 0.004 acre of vegetated intermittent stream channel (0.002 acre of southern willow scrub and 0.002 acre of freshwater marsh). (See attached Site Plan for locations of stream channel impacts; no impacts are proposed to Eagle Canyon Creek). The permanent impacts to intermittent stream channels (vegetated and unvegetated) are primarily associated with culvert crossings and bridge crossings for the golf cart paths and the lateral public access trail (the bridge crossings were considered permanent due to shading), as well as riprap protection against erosion at culvert outfalls. The permanent impacts to ephemeral stream channels are primarily associated with culvert crossings, riprap at culvert outfalls and altered topography associated with the golf course. Impacts to these small areas of potential habitat are expected to have negligible effects on California red-legged frog dispersal and survival as none of the impacts would block movement of the frogs across the site. These impacts will be mitigated, as approved by the Corps, the Service and the County, through stream habitat creation and enhancement within several unnamed, intermittent drainages onsite, and Tomate Canyon (see attached Site Plan). Furthermore, even if the project were not built, any frogs moving across the site would be unlikely to survive in the long term due to lack of suitable breeding habitat (*i.e.*, year-round water).

Construction of concrete cart paths would take 10 days and is scheduled for various times within each section. Any juvenile or adult California red-legged frogs moving westward at that time could come in contact with the wet cement during the short time between when it is poured and when it sets up (about 8 hours), resulting in injury to their skin that could

ultimately cause mortality. Monitoring will be conducted by the Service-approved biologist to ensure that no California red-legged frogs are near the wet cement.

Planting of the fairways, tees, and greens as well as restoration work in the rough will involve use of equipment during the day. Dispersing California red-legged frogs could be crushed by landscaping equipment or trampled by the landscape installers. The potential for these impacts will be minimized through the monitoring that will be conducted during these activities and general nocturnal movement of the frogs. Grassing will occur in one month installments each in *Sections 1 and 2, Sections 3, 4, and 5, and Section 6* (see *Figure 4*).

Construction activities can also have indirect effects on the California red-legged frog and the tidewater goby in Eagle Canyon through runoff of sediments and construction materials from the work area as well as from noise and vibration during earth-moving activities. Since construction work may occur during the rainy season, runoff from the site has the potential to carry sediments and construction materials off site. The area where the clubhouse, other buildings, parking, and six holes of the par-three course are to be constructed drains south to a drainage ditch along the railroad tracks and east to Eagle Canyon. The area south of the railroad tracks with the other three holes of the par-three course drains eastward to Eagle Canyon and into the project reclaimed water storage lake. Erosion and sediment control measures that are part of the project (see Environmental Quality Assurance Program [EQAP], hereby incorporated into the HCP) will avoid and minimize to the extent practicable the amount of sediment and other materials that could run off the work area to Eagle Canyon. In addition, vegetation on the slopes of the canyon would help filter the runoff before it reaches the creek. Thus, the potential for runoff from the site to adversely impact California red-legged frogs or tidewater gobies will be minimized. Since tidewater gobies generally move upstream during the winter and California red-legged frogs often take refuge in riparian vegetation during the rainy season, the potential for adverse impacts resulting from project construction will be further minimized by the animals' seasonal behavior. CPH will maintain water quality levels for turbidity below EPA aquatic life suspended solids and turbidity standards: the compensation point for photosynthesis should not be reduced by more than 10 percent of the seasonally established norm. If this level is exceeded, project construction shall cease until the turbidity is reduced below the threshold and the sediment and erosion plan will be modified in order to maintain turbidity levels below the thresholds.

Since earth work would occur within 200 feet of the top of Eagle Canyon, noise and vibrations during construction activities could cause California red-legged frogs dispersing

away from the creek during the wet season to move into less suitable habitats or increase their susceptibility to predation. The short duration of construction (one dispersal season for the frogs) and the general nocturnal behavior of the frogs minimize the potential for these activities to adversely affect the species.

5.2.2 Public Access Trail

Construction of the vertical coastal access to the beach west of Tomate Canyon is unlikely to result in take of California red-legged frogs due to the short duration of the work (approximately 6 weeks), and the low probability of any California red-legged frogs being present during the day when construction activities take place. Most activities related to installation of the vertical access would be staged from a pad at the top of the bluff and would not affect any potential California red-legged frog habitat. Construction of the trail connecting the vertical access to the cart path would involve cutting a level path into the side of the drainage canyon in an area that is currently coastal scrub. The bottom of the drainage would not be affected. Due to the distance from Eagle Canyon (the only suitable habitat for the tidewater goby onsite), construction of the vertical coastal access trail west of Tomate Canyon will not result in take of tidewater gobies.

Construction of the lateral access in Eagle Canyon, however, would occur adjacent to tidewater goby habitat and within California red-legged frog non-breeding habitat, and would terminate adjacent to the pipe racks over Eagle Canyon Creek. Approximately 652 linear feet of the existing paved road would be resurfaced within 200 feet of Eagle Canyon Creek for the lateral access trail. The pedestrian and equestrian paths will be earthen and the bike path will be concrete. Since the work may be conducted when California red-legged frogs could be in the work area, surveys will be conducted prior to the work, vegetation debris and understory plants will be cleared by hand, and the construction site will be monitored during the work period. These measures will minimize the potential for impacts to California red-legged frogs. Construction of the lateral access will not occur within Eagle Canyon Creek and so would not directly impact tidewater gobies. Erosion and sediment control measures (see *Section 6.1.1*) will minimize the potential for indirect impacts to both the tidewater goby and the California red-legged frog.

Construction of the vertical access to the beach at the mouth of Eagle Canyon will be staged from an upland area above and west of the creek mouth and from the beach below. Due to the nearly vertical cliff face adjacent to the creek, no California red-legged frogs are expected to be present on the ocean cliff face where the work will occur. Installation of the concrete

foundations on the beach will not encroach into the creek and thus would not affect California red-legged frog or tidewater goby habitat in the lagoon. Since work will not be conducted during the rainy season, no runoff of sediments or cement to the creek is expected. Installation of the wooden stairs and decomposed granite path from the stairs to the lateral access trail would not affect tidewater goby habitat or California red-legged frog breeding habitat. The use of a crane on the beach at the mouth of Eagle Canyon could result in take of the California red-legged frog. Measures described in *Section 6.1.1* will be implemented to avoid and minimize the potential for impacts to California red-legged frogs and tidewater gobies.

5.2.3 Water Pipelines

Installation of the new water lines will require clearing of the vegetation (primarily a few eucalyptus trees) that has grown up adjacent to the existing pipes on the south side of the railroad crossing. The existing pipes are to be removed by ARCO. This clearing, placement of the supports, and stringing the new pipes will be accomplished with no intrusion into the waters of Eagle Canyon Creek. Thus, no impacts to the tidewater goby are anticipated due to installation of the water pipelines. Work will not be conducted between November and March to avoid the rainy season. Because work may be conducted when California red-legged frogs could be aestivating in the work area, there is a potential for take of California red-legged frogs. In order to minimize the potential take, surveys will be conducted prior to the work, vegetation debris and understory plants will be cleared by hand, and the construction area will be monitored during the work period. No runoff of sediments or cement to the creek is expected because the work will be conducted during the dry season and measures will be taken to prevent such runoff, including revegetation of disturbed soils. The fill in the low areas (495 square feet on the west side and 233 square feet on the east side) will be compacted and seeded to stabilize the soils. Erosion and sediment control measures will be installed and maintained until the soils are stable as determined by monitoring.

5.3 Golf Links Operations and Maintenance

5.3.1 Golf Course

Operation and maintenance of the golf course would result in greater human presence near California red-legged frog and tidewater goby habitat and potential for take of the California red-legged frog and/or tidewater goby through (1) harassment or capture of California red-

legged frogs traversing the golf course, (2) mortality of one or more individual California red-legged frogs by golf cart traffic, (3) trampling of California red-legged frogs or tidewater gobies in Eagle Canyon, (4) California red-legged frog mortality from mowers, (5) draining of the water storage lake for maintenance, (6) periodic cleaning out of the desiltation basins, or (7) deleterious effects to water quality. The potential for such incidents, however, is very low due to the small amount of cart path relative to the total site area, and the fact that most adult California red-legged frog movement is during the night when no golfing activity would occur.

Mowing in the grassy areas of the rough could potentially result in take of California red-legged frogs. In order to minimize the potential for take, mowing will be restricted to the day under dry, sunny conditions. Mowing the greens, tees, and fairways is not expected to affect California red-legged frogs because grass (turf) height does not provide adequate cover for the frogs, and therefore, they will be visible to the mower operators and thus avoidable. Grass height will be maintained at approximately 1 to 4 inches in the rough, 5/8 inch in the fairways, and 1/4 inch on the greens. Approximately 87 acres of the 208-acre site would be mowed.

Watering and mowing the playing areas has the potential to improve movement corridors for California red-legged frogs to disperse westward by providing a moist environment (at least during watering) and removal of dense vegetation that could impede frog movement.

The reclaimed water storage lake in the southwest portion of the project site will be used to store reclaimed water for irrigation of the golf course and could attract California red-legged frogs. Bullfrogs could also colonize the lake. However, the concrete liner extending to a depth of six feet to prevent the growth of rooted aquatic vegetation and daily fluctuations in water level will prevent development of the preferred habitat conditions for both species. Lowering the lake level an average of 2.5 feet per night, and a maximum of 11.5 feet, during nighttime irrigation is expected to have no impacts on any California red-legged frogs using the lake. Water will be withdrawn from the bottom of the lake (approximately 15 feet below the maximum water surface elevation). California red-legged frogs could use the lake as temporary habitat but are unlikely to spawn there due to the concrete liner that will prevent growth of aquatic vegetation normally used for egg attachment. Thus, fluctuating water levels would not strand egg masses above water. Water quality testing, as described in *Section 3.1.1*, will ensure that the lake water quality will be tolerable to the California red-legged frog. Periodic draining of the lake for maintenance or repairs could result in take of California red-

legged frogs, if present; dispersing California red-legged frogs moving away from the storage lake may not find other suitable habitat and could die as a result. In order to avoid and minimize the potential for take, a Service-approved biologist would survey the water storage lake prior to or during draining and would relocate any California red-legged frogs to the lagoon at the mouth of Eagle Canyon. These measures are included in *Section 6.1.4.*

If bullfrogs were to become established in the lake, they could disperse to Eagle Canyon with the potential to adversely affect California red-legged frogs. Measures to monitor for and remove any bullfrogs found in the lake are included in *Section 6.1.*

Mosquito abatement measures are likely to be needed in the lake and have the potential to affect any California red-legged frogs present. Biological control measures that do not adversely affect amphibians will be used (see *Section 6.1.4*). This includes no use of mosquitofish.

Periodic cleaning out of the desiltation basins could result in take of California red-legged frogs. In order to avoid and minimize the potential for take, the cleanout work would be conducted during the dry season when no water would be present and a Service-approved biologist would monitor the desiltation basins prior to cleanout. Any California red-legged frogs present in the desiltation basins would be relocated to the lagoon at the mouth of Eagle Canyon prior to cleanout. These measures are included in *Section 6.1.4.*

5.3.2 Public Access Trail

Use of the coastal access through the project site west of Tomate Canyon is not expected to have any effects on California red-legged frogs because the probability of a frog being present on the access trail when it is being used by the public is very remote since few if any California red-legged frogs are likely to cross the path during the day (or night).

The coastal access at the beach at the mouth of Eagle Canyon would increase the potential for impacts to California red-legged frogs and tidewater gobies due to increased human use of the area. Impacts could occur through trampling or capture of frogs or tadpoles by people leaving the trail or beach and entering the stream or lagoon. Wading in the stream or lagoon by people could trample or injure tadpoles or tidewater gobies, dislodge California red-legged frog eggs from submerged vegetation, or collapse tidewater goby nesting burrows. The presence of the vertical access trail, however, could decrease disturbance to the lagoon habitats by providing more formal access that does not require wading through the creek as

is currently the case. The access would be closed (February through May) during the seal breeding/pupping season (see Appendix B), which would protect California red-legged frogs during their breeding season. If even one person using the eastern vertical access trail is observed leaving the trail or beach to enter Eagle Canyon (as described in *Section 8.1*), CPH will apply to the California Coastal Commission for an emergency permit to close the eastern vertical access from November 1 to May 1 instead of February 1 to May 1 as required by the RAIP. The California Coastal Commission has the authority to deny the emergency permit, however.

In order to discourage the public from entering the lagoon at the mouth of Eagle Canyon, CPH will install a picket and wire fence along the sand bar at the mouth of the lagoon. The fence will extend from the base of the eastern vertical public access at the western side of Eagle Canyon along the sand bar to the east side of Eagle Canyon on the Eagle Canyon Ranch property (see *Figure 3*). The picket and wire fence will be maintained by CPH and will be repaired and replaced as necessary.

In addition, tides will limit public access along the shoreline of the project site. For example, during the calendar year 2000, between the hours of 5 AM and 9 PM, the tide has extended or will extend above the elevation of the cliff base onsite for a portion of a total of 205 days. Human activities in or immediately adjacent to the creek could result in trampling of the habitat as well as California red-legged frogs and tidewater gobies, pollution of the habitat through disposal of trash or defecation, and capture of juvenile or adult California red-legged frogs that cross the trail during the day. The amount of pollutants that could enter the habitat from human activity is expected to be low since most people are unlikely to be taking items to the beach that would pollute the stream. The beach area is currently used by a number of people, primarily arriving from the east side of Eagle Canyon Creek, and little trash was observed in the canyon during several field visits in 1999 and 2000.

5.3.3 Water Pipelines

Operation of the reclaimed and potable water pipelines in Eagle Canyon is expected to have no impacts on California red-legged frogs or tidewater gobies in Eagle Canyon Creek. The pipelines will remain suspended above the creek, and maintenance activities (*e.g.,* periodic visual inspections of supports and pipes) will not involve any intrusion of people or equipment into the creek or the vegetation associated with the creek.

5.4 Anticipated Take

Incidental take, in terms of individuals of a species, is not possible to predict and quantify for project activities. The actual level of take for California red-legged frogs will be influenced by the seasonal variation of distribution and abundance as well as from year to year due to movement patterns, reproduction, and fluctuations in population size. For the tidewater goby, the actual level of take will be affected by seasonal variation of abundance depending on reproductive success and storm flows washing out the berm at the mouth of Eagle Canyon.

The permits associated with the HCP will not authorize take of California red-legged frogs or tidewater gobies due to water quality impacts because no take due to water quality impacts is anticipated.

5.4.1 California Red-legged Frog

5.4.1.1 Implementation of the RAP

Implementation of the RAP could result in take of all California red-legged frogs present in the RAP project footprint due to harassment and an unknown number of California red-legged frogs due to mortality, but take due to mortality is expected to be low. If one California red-legged frog is taken in the form of injury or mortality during implementation of the RAP, then ARCO will evaluate the cause of take, reevaluate implementation measures of the RAP, and determine if adaptive management measures are necessary. The potential for such take is low because the California red-legged frog population onsite is relatively small, the frogs would be visible to and avoidable by the construction equipment operators, environmental monitors would be checking for frogs and most movement of adult frogs is at night when no construction activities will be conducted.

5.4.1.2 Construction of the Golf Course, Revegetation Areas and Public Access Trail

Construction of the golf course, revegetation areas, and public access trail system could result in take of all California red-legged frogs present in the project footprint due to harassment and an unknown number of California red-legged frogs due to mortality, but take due to mortality is expected to be low. If one California red-legged frog is taken in the form of

injury or mortality during construction activities, then CPH will evaluate the cause of take, reevaluate implementation measures of the construction activities, and determine if adaptive management measures are necessary. The potential for such take is low because the California red-legged frog population onsite is relatively small, the frogs would be visible to and avoidable by the construction equipment operators, environmental monitors would be checking for frogs and most movement of adult frogs is at night when no construction activities will be conducted.

5.4.1.3 Operation of the Golf Course

Operation of the golf course could result in take of all California red-legged frogs onsite due to harassment and an unknown number of California red-legged frogs due to mortality, but take due to mortality is expected to be low. If one California red-legged frog is taken in the form of injury or mortality during operation of the golf course, then CPH will evaluate the cause of take, reevaluate operation measures of the golf course, and determine if adaptive management measures are necessary. The potential for such take is low based on the few individuals observed in Eagle Canyon, and because most movement of adult frogs is at night when no human activity occurs on the course, and the frogs would be visible to and avoidable by the golf cart and mower operators during the day.

5.4.1.4 Operation of the Lateral and Vertical Public Access Trails

Public access to the beach at the mouth of Eagle Canyon could result in take of all California red-legged frogs onsite due to harassment and an unknown number of California red-legged frogs due to mortality, but take due to mortality is expected to be low. If one California red-legged frog is taken in the form of injury or mortality during operation of the public access trail, then CPH will evaluate the cause of take, reevaluate implementation measures of the RAP, and determine if adaptive management measures are necessary.

The golf course project would not adversely change conditions related to survival of California red-legged frogs dispersing across upland areas to the west of Eagle Canyon. It is anticipated that the low level of take resulting from the golf course construction and operation and public access would not adversely affect the California red-legged frog population in the project area.

5.4.2 Tidewater Goby

5.4.2.1 Implementation of the RAP

Implementation of the RAP is not expected to result in take of the tidewater goby because none of these activities will occur within tidewater goby habitat.

5.4.2.2 Construction of the Golf Course, Revegetation Areas and Public Access Trail

Construction of the golf course, revegetation areas, and public access trail system are not expected to result in take of the tidewater goby because none of these activities will occur within tidewater goby habitat.

5.4.2.3 Operation of the Golf Course

Operation of the proposed golf course project, including chemical use, is not expected to result in take of the tidewater goby because none of these activities will occur within tidewater goby habitat.

Regarding chemical use onsite, all golf course maintenance procedures and materials will be conducted and used in accordance with the County- and Service-approved final ATMIPM program which has been developed as part of the CDP approval process. The draft ATMIPM has been previously provided to the Service. The HCP and IA are not providing coverage for take as a result of chemical usage onsite; however, avoidance and minimization measures developed with the Service will avoid take through minimizing chemical use and conducting regular water quality testing to assure that deleterious effects to water quality are not occurring.

5.4.2.4 Operation of the Lateral and Vertical Public Access Trails

Public access to the beach at the mouth of Eagle Canyon could result in take of all tidewater gobies onsite due to harassment and an unknown number of tidewater gobies due to mortality, but take due to mortality is expected to be low. If one tidewater goby is taken in the form of injury or mortality during operation of the public access trail, then CPH will evaluate the cause of take, reevaluate operation measures of the access trail, and determine

if adaptive management measures are necessary. The number of tidewater gobies taken by human use of Eagle Canyon Creek is expected to be low because the fish are secretive and difficult to capture by hand and habitat disturbance (including trampling) is not likely to increase from pre-project levels. It is not anticipated that the low level of take resulting from public access would adversely affect the tidewater goby population in the project area.

5.5 Cumulative Impacts

The following discussion of cumulative impacts is largely from the FEIR (Fugro-McClelland 1993). It provides an overview of related projects in the project vicinity that would contribute to the cumulative regional loss of biological resources.

The Bacara (formerly Santa Barbara Club) Resort & Spa Hotel (opened Fall 2000) is located immediately east of the proposed project site. The hotel project resulted in temporary impacts to California red-legged frogs and tidewater gobies in Tecolote and Bell canyons during construction of the access road and permanent impacts through conversion of upland habitat to structures and landscaping plus increased human presence in the area. No other projects are known to be proposed or approved within the immediate vicinity of Tecolote and Bell canyons, nor within the vicinity of upper Eagle Canyon (County of Santa Barbara 1998). Development on the Morehart holdings to the west of the project site is likely to be proposed at some time in the future. Cumulative impacts to aquatic habitats from the known projects in the area appear to be minimal and primarily temporary. Permanent impacts to upland habitats would occur from the hotel and golf course projects; however, the golf course project would not pose a barrier to California red-legged frog movement.

SECTION 6.0
MINIMIZATION OF IMPACTS

6.1 Measures to Avoid and Minimize Impacts

6.1.1 Eagle Canyon Coastal Access & Water Pipeline Construction

1. In order to avoid and minimize the take of California red-legged frogs, either directly or through alteration of their habitat during construction, worker education programs and well-defined operational procedures shall be implemented. These include:

   a. At least fifteen (15) days prior to the beginning of construction, the applicant shall submit to the Service the qualifications of the biologist(s) who will carry out monitoring, relocation, and education programs for the project for review and approval. The applicant will also submit the names and qualifications of those persons (designated monitors) trained by the Service-approved biologist(s) who may also implement the California red-legged frog protection requirements in this HCP. Work will not begin until CPH receives Service approval of qualified biologists.

   b. A Service-approved biologist shall conduct a training session for all construction personnel prior to any construction activities within the project footprint. At a minimum, the training shall include a discussion on the presence of the California red-legged frog and tidewater goby at the Dos Pueblos Golf Links project site, the general provisions of the Endangered Species Act (Act), the necessity for adhering to the provisions of the Act, the penalties associated with violating the provisions of the Act, the specific measures that are being implemented to conserve California red-legged frogs and tidewater gobies as they relate to the project, and the boundaries within which the project may be accomplished.

   c. Upon completion of construction of the coastal access trail, signs will be posted at the beginning of the access trail and at the mouth of Eagle Canyon Creek detailing the presence of the tidewater goby and the California red-legged frog in Eagle Canyon Creek listing potential threats to these species. These signs shall also describe the penalties associated

with violation of the Act. All signs shall be approved by all appropriate agencies, including the Service. A wire and picket fence shall be installed and maintained at the mouth of Eagle Canyon Creek to prevent entry into the drainage by recreational users along the coast.

d. The Service-approved biologist(s) or designated monitor shall visit the Eagle Canyon construction site each work day throughout the construction phase in Eagle Canyon to ensure that all applicable measures described herein are being employed to avoid incidental disturbance of wetland and stream habitats, individual California red-legged frogs and tidewater gobies, and California red-legged frog and tidewater goby habitat. The biologist(s) or designated monitor shall coordinate scheduling with the construction contractor regarding compliance with biological mitigation requirements. The biologist(s) shall monitor the construction zone and suitable habitat within the project vicinity and shall be empowered to halt construction if necessary to avoid direct harm of individual California red-legged frogs or tidewater gobies.

e. Dogs and other pets shall be prohibited at the Eagle Canyon construction site, and contractors and their employees shall not be allowed to bring pets onto the Dos Pueblos Golf Links project site. This prohibition includes dogs kept either inside or outside of employee vehicles.

f. To discourage predators from the construction sites, all food-related trash materials (*e.g.,* leftovers, wrappers, and containers) shall be properly disposed of and be removed from the site each day, and areas shall be maintained litter-free.

g. During construction, the applicant shall prevent sediment and other materials from entering Eagle Canyon Creek (see EQAP). These include straw bale and silt fence barriers at the downslope side of all disturbed soil areas that are maintained throughout the rainy season. In addition, a Stormwater Pollution Prevention Plan (SWPPP) must be prepared in compliance with the National Pollution Discharge Elimination System (NPDES) General Permit CAS000002 and submitted to the RWQCB prior to any grading activities onsite.

h. Temporary erosion and sedimentation control features shall be maintained until revegetation is sufficient (75 percent cover or greater) to prevent erosion of disturbed construction and restoration sites.

i. Daily inspections during construction shall be conducted by the CPH project superintendent to ensure condition and adequacy of erosion and sedimentation control features.

j. Any water removed from the concrete stair excavation or the water pipeline support bore holes by construction contractors will be discharged such that it does not cause any erosion or flow of turbid water into Eagle Canyon Creek.

k. No water that has come in contact with wet cement will be allowed to enter Eagle Canyon Creek unless the pH is within the range of 6.0 to 8.0 units.

2. In order to reduce the potential for take of California red-legged frogs either directly or through alteration of their habitat, clearly-defined work areas shall be established. This avoidance and minimization measure includes:

a. The number of access routes (1 or 2), size of the staging area, and the total area of the activity shall be limited to the minimum necessary to achieve the project goal. Prior to excavation or construction activities, the boundaries of the project area shall be clearly delineated by flagging or other means to prevent workers or equipment from inadvertently straying from the project area. All construction personnel, equipment, and vehicle movement shall be confined to designated construction areas and connecting roadways. Movement of construction and personal vehicles shall be prohibited outside of designated construction areas and off of established roadways. The limits of the project area shall be reviewed by the Service-approved biologist prior to the commencement of work.

b. All equipment shall be regularly maintained to avoid fluid leaks (*e.g.*, gasoline, diesel fuel, oil, hydraulic fluid, etc.). Equipment will not be operated in Eagle Canyon Creek; however, equipment operated on the beach at the mouth of Eagle Canyon shall be inspected prior to the onset

of construction for fuel, lubricant, and hydraulic fluid leaks, and shall be checked daily for leaks. Any leaks found shall be repaired immediately.

c. Hazardous materials (*i.e.,* fuels, lubricants, etc.) shall be stored in a designated location, surrounded by a temporary earthen berm and lined with plastic, at least 100 feet from Eagle Canyon. Refueling of equipment shall occur at least 100 feet from Eagle Canyon.

d. Before work is initiated in Eagle Canyon, a plan shall be prepared for immediate containment and clean-up of any hazardous material spills within or adjacent to the site as part of the construction SWPPP. The plan shall include a list of containment and cleanup equipment to be kept onsite and training of all construction personnel in their use.

e. Contractors shall wash out concrete trucks onsite only within the designated concrete-washout area, located in the vicinity of the proposed clubhouse. The bermed washout location is such that runoff cannot reach riparian vegetation or enter a stream channel.

f. Vegetation within the clearly demarcated project boundaries within Eagle Canyon that would be disturbed by construction of the access or water pipelines shall be removed by hand, while a Service-approved biologist is present, prior to construction activities at the work site. Hand-clearing activities are less likely to result in injury and mortality to California red-legged frogs, and the removal of vegetation will assist in locating any California red-legged frogs present in dense vegetation prior to construction activities.

g. Construction activities within Eagle Canyon shall be scheduled for the late spring to fall (April through October) to avoid working adjacent to the creek during the winter rains and the breeding season for the California red-legged frog.

h. The spread or introduction of exotic plant species shall be avoided to the maximum extent possible by minimizing disturbance to areas with established native vegetation during project activities, by restoring areas disturbed by the project activities (*i.e.*, along the proposed lateral access,

eastern vertical access and pipe rack) with native species, and by post-project monitoring and control of exotic species (see BELP and attached Site Plan).

i. Bluff vegetation removal during construction shall be minimized at the eastern vertical access trail at Eagle Canyon.

3. Take of California red-legged frogs found within the proposed project area shall be minimized through the relocation of these animals to suitable adjacent habitat prior to and during the construction and habitat restoration periods. This minimization measure includes:

a. If California red-legged frogs are found in or immediately adjacent to the work areas (*i.e.*, along the proposed lateral access, eastern vertical access and pipe rack) during pre-construction surveys within Eagle Canyon, they shall be relocated to the lagoon at the mouth of Eagle Canyon and released. After construction begins, the work area shall be checked for California red-legged frogs daily prior to the start of each day's work by a Service-approved biologist. Any individuals found shall be relocated to the lagoon at the mouth of Eagle Canyon and released.

b. Only biologist(s) approved by the Service or designated monitor(s) under the supervision of the biologist(s) shall be authorized to handle California red-legged frogs for translocation. Prior to handling any California red-legged frog, these individuals shall be trained to handle the species by a qualified herpetologist familiar with ranids. Only under exceptional circumstances and with the approval of the Service shall anyone other than the Service-approved biologist(s) or designated monitor(s) relocate California red-legged frogs from the path of danger to outside the construction zone. Anyone other than the Service-approved biologist(s) who may have the occasion to relocate California red-legged frogs shall be trained by the Service-approved biologist in the proper handling and reporting procedures.

c. Any California red-legged frog detected within the Eagle Canyon construction areas or within 200 feet of the areas (outside of Eagle Canyon Creek) shall be reported immediately to either the Service-approved

biologist(s), or designated monitor. Any individuals detected within the construction area shall be captured and relocated to the lagoon at the mouth of Eagle Canyon Creek by a Service-approved biologist. Any individuals observed outside of the construction area, but within 200 feet, shall be monitored closely to ensure they do not enter the construction area.

6.1.2 Implementation of the Remediation Action Plan

The following measures apply to soil remediation of the following areas: active (129/208) tank farm, former (208) tank farm, meters (mercury), warehouse storage (loading dock), well 129-2 staining, former gas compressor, mudpit near 208-19 well, and concrete abutment (see attached Site Plan).

1. In order to avoid and minimize the take of California red-legged frogs during implementation of the RAP, worker education programs and well-defined operational procedures shall be implemented. These include:

   a. At least fifteen (15) days prior to the beginning of construction, the applicant shall submit to the Service the qualifications of the biologist(s) who will carry out or supervise monitoring, relocation, and education programs for the project for the Service's review and approval.

   b. A Service-approved biologist shall conduct a training session for all construction personnel prior to any remediation activities within the project footprint and to any new construction personnel added to the project thereafter. At a minimum, the training shall include a discussion on the presence of the California red-legged frog and tidewater goby at the Dos Pueblos Golf Links project site, the general provisions of the Act, the necessity for adhering to the provisions of the Act, the penalties associated with violating the provisions of the Act, the specific measures that are being implemented to conserve California red-legged frogs as they relate to the project, and the boundaries within which the project may be accomplished.

c. Dogs and other pets shall be prohibited at the construction site, and contractors and their employees shall not be allowed to bring pets onto the Dos Pueblos Golf Links project site. This prohibition specifically includes dogs kept either inside or outside of employee vehicles.

d. To discourage predators, all food-related trash materials (*e.g.,* leftovers, wrappers and containers) shall be properly disposed of, trash shall be removed from the site each day, and areas shall be maintained litter-free.

e. During implementation of the RAP, the applicant shall prevent sediment and other materials from entering the drainages (see EQAP). These include straw bale and silt fence barriers at the downslope side of all disturbed soil areas that are maintained throughout the rainy season. In addition, a SWPPP must be prepared in accordance with NPDES General Permit CAS000002 and submitted to the RWQCB prior to any grading activities onsite.

f. Temporary erosion and sediment control features shall be maintained until revegetation is sufficient to prevent erosion of disturbed construction and restoration sites as determined by monitoring and adaptive management until success criteria are met.

g. Immediately prior to and after each rainfall event, monitoring inspections of sediment and erosion control measures (see EQAP) shall be conducted for the duration of the construction phase and until temporary protection features have been removed.

h. In order to avoid the spread of soil contaminants, soil remediation activities will not be conducted south of the railroad right-of-way during the rainy season.

2. In order to reduce the potential for take of California red-legged frogs, clearly-defined work areas shall be established. This avoidance and minimization measure includes:

a. All construction personnel, equipment, and vehicle movement shall be confined to designated construction areas and connecting roadways. Movement of construction and personal vehicles shall be prohibited outside of designated construction areas and off of established roadways.

b. All equipment shall be regularly maintained to avoid fluid leaks. Equipment shall be inspected prior to the onset of construction for fuel, lubricant, and hydraulic fluid leaks, and shall be checked daily for leaks. Any leaks found shall be repaired immediately.

c. Hazardous materials shall be stored in a designated location with plastic lining at least 100 feet from aquatic habitats. Refueling of equipment shall occur at least 50 feet from aquatic habitats. Before work is initiated, a plan shall be prepared for immediate containment and clean-up of any hazardous material spills within the project site as part of the remediation SWPPP. The plan shall include a list of containment and cleanup equipment to be kept onsite and training of all construction personnel in their use.

3. Incidental take of California red-legged frogs found within the proposed project area shall be minimized through relocating these animals to suitable adjacent habitat prior to and during the construction and habitat restoration periods. This avoidance and minimization measure includes:

a. The remediation areas shall be searched once immediately prior to the onset of remediation.

b. If California red-legged frogs are found during pre-remediation surveys, they shall be relocated to the lagoon at the mouth of Eagle Canyon and released. After remediation begins, the work area shall be checked for California red-legged frogs daily prior to the start of the day's work. Any individuals found shall be relocated to the lagoon at the mouth of Eagle Canyon Creek and released.

c. If repeated surveys do not detect any California red-legged frogs moving into the work area during remediation for five (5) consecutive days, the

surveys shall be conducted a minimum of twice a week prior to the start of the day's work. If a California red-legged frog is detected during these twice-weekly surveys or if rainfall occurs, then daily surveys shall be reinitiated until no frogs are found for 5 consecutive days.

d. When all surveys for California red-legged frogs and training of workers have been completed, the contractor or applicant shall designate a person or persons to monitor on-site compliance. The Service-approved biologist shall ensure that this individual receives the training specified under the minimization measure described above and is competent in the identification of California red-legged frogs. The Service-approved biologist(s) and the monitor(s) shall have the authority to halt construction if necessary to avoid direct harm to California red-legged frogs.

e. Only the Service-approved biologist(s) or designated monitor shall be authorized to handle California red-legged frogs for translocation. Prior to handling any California red-legged frog, these individuals shall be trained to handle the species by the Service-approved biologist(s).

f. Any California red-legged frog detected within the remediation area or within 200 feet of the area shall be reported immediately to either the Service-approved biologist(s), or designated monitor(s). Any individuals detected within the construction area shall be captured and relocated to a predetermined location by a Service- biologist or designated monitor. Any individuals observed outside of the construction area but within 200 feet shall be monitored closely to ensure they do not enter the construction area.

6.1.3 Golf Course and Public Access Trail Construction

The following measures apply to construction of golf course facilities outside of Eagle Canyon. These include the clubhouse, parking, reclaimed water storage lake, fairways, greens, tees, cart paths, and storm drains.

1. In order to avoid and minimize the take of California red-legged frogs during construction of golf course facilities outside Eagle Canyon, worker education

programs and well-defined operational procedures shall be implemented. These include:

a. At least fifteen (15) days prior to the beginning of construction, the applicant shall submit to the Service the qualifications of the biologist(s) who will carry out or supervise monitoring, relocation, and education programs for the project for review and approval by the Service.

b. A Service-approved biologist shall conduct a training session for all construction personnel prior to any construction activities within the project footprint and to any new construction personnel added to the project thereafter. At a minimum, the training shall include a discussion on the presence of the California red-legged frog and tidewater goby at the Dos Pueblos Golf Links project site, the general provisions of the Act, the necessity for adhering to the provisions of the Act, the penalties associated with violating the provisions of the Act, the specific measures that are being implemented to conserve California red-legged frogs and tidewater gobies as they relate to the project, and the boundaries within which the project may be accomplished.

c. Dogs and other pets shall be prohibited at the construction site, and contractors and their employees shall not be allowed to bring pets onto the Dos Pueblos Golf Links project site. This prohibition specifically includes dogs kept either inside or outside of employee vehicles.

d. To discourage predators, all food-related trash materials (*e.g.,* leftovers, wrappers and containers) shall be properly disposed of, trash shall be removed from the site each day, and areas shall be maintained litter-free.

e. During construction, the applicant shall prevent sediment and other materials from entering the drainages (see EQAP). These include straw bale and silt fence barriers at the downslope side of all disturbed soil areas that are maintained throughout the rainy season. In addition, a SWPPP must be prepared in compliance with NPDES General Permit CAS000002 and submitted to the RWQCB prior to any grading activities onsite.

f. Temporary erosion and sediment control features shall be maintained until revegetation is sufficient to prevent erosion of disturbed construction and

restoration sites as determined by monitoring and adaptive management until success criteria are met.

g. Immediately prior to and after each rainfall event, monitoring inspections of sediment and erosion control measures (see EQAP) shall be conducted for the duration of the construction phase and until temporary protection features have been removed.

h. A water sampling program will be implemented in Eagle Canyon, Drainage 4 North and Tomate Canyon during golf course construction. Impacts of erosion and sedimentation to water quality will be measured using turbidity. CPH will maintain water quality levels for turbidity below EPA aquatic life suspended solids and turbidity standards: the compensation point for photosynthesis should not be reduced by more than 10 percent of the seasonally established norm.

If tests reveal that the turbidity thresholds are exceeded, project construction shall cease until the turbidity is reduced below the thresholds and the sediment and erosion plan will be modified (*e.g.*, additional sandbags, silt fencing, straw bales) in order to maintain turbidity levels below the thresholds.

i. Grading activities will not be conducted south of the railroad right-of-way during the rainy season.

2. In order to reduce the potential for take of California red-legged frogs, clearly-defined work areas shall be established. This avoidance and minimization measure includes:

a. Road improvements shall be confined to locations identified in the Pre-Construction Notification, which specifies locations of permanent erosion and sedimentation control features including drainage swales, drop inlets, and culverts.

b. At all stream crossings, the number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to achieve the project goal. Prior to excavation or construction activities, the boundaries of the stream crossings shall be

clearly delineated by flagging or other means to prevent workers or equipment from inadvertently straying from the project area.

c. All construction personnel, equipment, and vehicle movement shall be confined to designated construction areas and connecting roadways. Movement of construction and personal vehicles shall be prohibited outside of designated construction areas and off of established roadways.

d. All equipment shall be regularly maintained to avoid fluid leaks. Equipment working in stream beds shall be inspected prior to the onset of construction for fuel, lubricant, and hydraulic fluid leaks, and shall be checked daily for leaks. Any leaks found shall be repaired immediately.

e. Hazardous materials shall be stored in a designated location with plastic lining at least 100 feet from aquatic habitats. Refueling of equipment shall occur at least 50 feet from aquatic habitats. Before work is initiated, a plan shall be prepared for immediate containment and clean-up of any hazardous material spills within the project site as part of the construction SWPPP. The plan shall include a list of containment and cleanup equipment to be kept onsite and training of all construction personnel in their use.

f. Contractors shall wash out concrete trucks onsite only within the designated concrete-washout area, located in the vicinity of the proposed clubhouse. The bermed washout location is such that runoff cannot reach riparian vegetation or enter a stream channel.

g. From 1 November through 1 May, when California red-legged frogs are more likely to move further from water, work shall not be conducted within 200 feet of potential California red-legged frog breeding habitat in Eagle Canyon.

h. Bluff vegetation removal during construction shall be minimized at the western vertical access trail at Tomate Canyon and erosion control measures shall be used at the proposed vertical trail earth cut at Tomate Canyon.

3. Incidental take of California red-legged frogs found within the proposed project area shall be minimized through relocating these animals to suitable adjacent habitat prior to and during the construction and habitat restoration periods. This avoidance and minimization measure includes:

   a. In drainages where water or riparian vegetation is present, the work area and the length of creek 60 feet upstream and downstream of the work area shall be surveyed for California red-legged frogs twice at night and twice in daylight hours within three days of the onset of construction. The second night survey shall be conducted within 24 hours of the onset of construction and the second day survey shall be conducted on the morning construction begins.

   b. In drainages where water and riparian vegetation are absent, the work area and the length of creek 30 feet upstream and downstream of the work area shall be searched for California red-legged frogs once within three days of the onset of construction.

   c. If California red-legged frogs are found during pre-construction surveys, they shall be relocated to the lagoon at the mouth of Eagle Canyon Creek and released. After construction begins, the work area shall be checked for California red-legged frogs daily prior to the start of the day's work. Any individuals found shall be relocated to the lagoon at the mouth of Eagle Canyon Creek and released.

   d. If repeated surveys do not detect any California red-legged frogs moving into the work area during construction for five (5) consecutive days, the surveys shall be conducted a minimum of twice a week prior to the start of the day's work. If a California red-legged frog is detected during these twice-weekly surveys or if rainfall occurs, then daily surveys shall be reinitiated until no frogs are found for 5 consecutive days.

   e. When all surveys for California red-legged frogs and training of workers have been completed, the contractor or applicant shall designate a person or persons to monitor on-site compliance with the terms of this HCP. The Service-approved biologist shall ensure that this individual receives the

training specified under the minimization measure described above and is competent in the identification of California red-legged frogs. The Service-approved biologist(s) and the monitor(s) shall have the authority to halt construction if necessary to avoid direct harm to California red-legged frogs.

f. A night survey for California red-legged frogs shall be conducted immediately after cement is poured for the cart paths. Any found will be relocated outside the work area.

g. Only the Service-approved biologist(s) or designated monitor shall be authorized to handle California red-legged frogs for translocation. Prior to handling any California red-legged frog, these individuals shall be trained to handle the species by a qualified herpetologist familiar with ranids.

h. Any California red-legged frog detected within the construction area or within 200 feet of the area shall be reported immediately to either the Service-approved biologist(s), or designated monitor(s). Any individuals detected within the construction area shall be captured and relocated to the lagoon at the mouth of Eagle Canyon Creek by an authorized qualified biologist or designated monitor. Any individuals observed outside of the construction area but within 200 feet shall be monitored closely to ensure they do not enter the construction area.

6.1.4 Operation of the Golf Course

Take of California red-legged frogs as a result of long-term maintenance and operation of the golf course shall be minimized through the following measures:

a. Mowing within the golf course roughs shall be limited to dry, sunny days in order to avoid impacts to any California red-legged frogs hiding in the grass. Because grass within the tees, fairways, and greens would only be 1/4 inch to 5/8 inch in height, frogs are unlikely to use these areas and mowing restrictions will not be implemented. Maintenance personnel conducting the mowing will be trained in identification of California red-legged frogs and the importance of avoiding any observed during mowing.

b. The following trash and garbage maintenance plan shall be implemented in order to avoid attracting known predators of the California red-legged frog (*e.g.,* raccoons and opossums). All trash cans on the site shall be kept covered with tight fitting lids and shall be emptied daily into a dumpster(s) stored in an enclosed area. The enclosure shall be of wire fencing or solid material (sides and top) with a gate that will prevent entry of animals the size of a small cat. Any raccoons or opossums found onsite will be removed as allowed by local and state authorities.

c. A bullfrog monitoring and removal plan shall be implemented for the reclaimed water storage lake. This plan will include two night surveys in the fall (September to November) each year for bullfrogs and California red-legged frogs by a qualified biologist. If any bullfrogs are found, the lake will be drained, and the bullfrogs (all life stages) will be removed. Any California red-legged frogs (all life stages) found will be relocated to suitable habitat in Eagle Canyon.

d. A water quality testing program (see Table 3) will be implemented in Eagle Canyon, Tomate Canyon, Drainage 4 North, the vernal pool and the reclaimed water storage lake on a regular basis to ensure that no adverse water quality impacts result from irrigation and chemical use within the golf course. For Tomate Canyon, Drainage 4 North and Eagle Canyon, if water quality levels of nitrites, nitrates and phosphates exceed EPA levels, if dissolved oxygen levels are less than 5 ppm, or if pH levels are less than 6.0 or greater than 9.0, operation of the golf course shall be modified in accordance with the final ATMIPM until testing shows no adverse impacts to water quality. For the vernal pool and the water storage lake, if tests reveal that levels of nitrites, nitrates and phosphates exceed EPA levels, if dissolved oxygen levels are less than 5 ppm, or if pH levels are less than 6.0 or greater than 9.0, operation of the golf course shall be modified in accordance with the final ATMIPM until testing shows no adverse impacts.

e. The pump intake at the proposed reclaimed water storage lake shall be screened with a wire mesh not larger than five millimeters in order to prevent take of California red-legged frogs.

f. Because the proposed reclaimed water storage lake shall experience an average daily drawdown of 2.5 feet, and a maximum drawdown of 11.5 feet, the lake shall be constructed with a concrete liner in order to prevent the growth of rooted vegetation within the lake that could attract California red-legged frogs and provide breeding habitat. This concrete liner will extend down the sides of the reclaimed water storage lake to a depth of about six feet. This measure should avoid take of California red-legged frog eggs (through desiccation) because there will be nothing to which the California red-legged frogs can attach their eggs.

g. Aquatic weed control within the reclaimed water storage lake shall follow a non-chemical strategy exclusively. This strategy shall include one or more of the following: a circulation system to increase water movement, an aeration system to increase the oxygen levels, and shading (approved non-toxic blue colorants such as Aquashade®, thereby reducing the potential for algae and other aquatic weeds, and removal of aquatic weeds by hand (*i.e.*, skimming the surface).

h. Mosquito control in the lake shall be by use of *Bacillus thuringiensis* var. *israeliensis* (BTI), *Bacillus sphaericus*, or other equivalent means that are shown to be non-toxic to amphibians. Mosquitofish shall not be used.

i. To reduce the likelihood of chemical migration into the reclaimed water storage lake, spraying of chemicals onto turf areas adjacent to the lake (if needed) shall not occur within 25 feet of the lake edge. Only spot spraying with a wick applicator shall take place within the 25-foot buffer. No chemicals will be applied within 10 feet of the lake edge.

j. In order to minimize water quality impacts associated with golf course irrigation, the irrigation shall be conducted deeply but infrequently. During the dry summer months, the period of highest demand, the greens will be irrigated three to four times per week for a period of 20 to 30 minutes and the fairways will be irrigated two to three times per week for a period of 15 to 20 minutes. Irrigation shall be conducted late at night or early in the morning in order to achieve better distribution due to higher water pressure and limited wind. Runoff shall be avoided by matching water application

rates to soil infiltration rates using information from the on-site weather station and soil percolation rate data.

6.1.5 Operation of the Public Access Trails

1. Take of California red-legged frogs and tidewater gobies as a result of long-term operation of the eastern lateral and vertical public access in Eagle Canyon shall be minimized through the following measures:

   a. Pets shall not be allowed on the site and horses are the only domesticated animals allowed within Eagle Canyon on the lateral public access trail. Signs to that effect will be posted at the parking lot and at the top of Eagle Canyon. The signs shall be approved by all appropriate agencies, including the Service, prior to posting. Horses shall be allowed on the equestrian trail (an element of the lateral access trail), which continues off site to the east and west. No domesticated animals, including horses, shall be allowed on the vertical access trail.

   b. Signs will be posted at the parking lot, describing the sensitive nature of the project site as habitat for federally-protected species, and directing individuals to stay on the designated trails and stairway. The signs shall be approved by all appropriate agencies, including the Service, prior to posting.

   c. Signs will be posted at the top of Eagle Canyon, describing the sensitive nature of the drainage as habitat for federally-protected species, and directing individuals to stay on the designated trails and stairway. The signs shall be approved by all appropriate agencies, including the Service, prior to posting.

   d. Signs will be posted at the mouth of Eagle Canyon directing individuals to stay out of the canyon to protect federally-listed species and their habitat. The signs shall be approved by all appropriate agencies, including the Service, prior to posting.

   e. In accordance with the RAIP, a gate will be installed at the entrance to the vertical access trail from the lateral access trail. This gate will be locked from February 1 through May 31 to prevent the public from using the

vertical access trail at Eagle Canyon. The Service shall approve these signs prior to posting.

f. A gate will be installed just east of the view point. It will be kept locked until the eastward continuation of the lateral access trail is completed.

g. CPH will hold a public education meeting prior to the opening of the golf links project, regarding the sensitive species (including the California red-legged frog and tidewater goby) that could be affected by the public.

2. Take of California red-legged frogs and tidewater gobies as a result of long-term operation of the remaining lateral and western vertical public access shall be minimized through the following measure:

a. Signs will be posted at the parking lot, describing the sensitive nature of the project site as habitat for federally-protected species, directing individuals to stay on the designated trails and stairways. The signs shall be approved by all appropriate agencies, including the Service, prior to posting.

b. CPH will hold a public education meeting prior to the opening of the golf links project, regarding the sensitive species (including the California red-legged frog and tidewater gobi) that could be affected by the public.

SECTION 7.0
MITIGATION MEASURES

To mitigate potential impacts to California red-legged frogs that may result from implementation of the RAP and construction and operation of the Dos Pueblos Golf Links project and public access trails, CPH will implement a habitat enhancement plan for several intermittent drainages, including Tomate Canyon, and Eagle Canyon within the project property. This plan includes surveys for, and eradication of, exotic aquatic species in Eagle Canyon; enhancement of Eagle Canyon through revegetation and trash removal; and wetlands creation along several intermittent stream channels, including Tomate Canyon. To mitigate potential impacts to tidewater gobies that may result from operation of the eastern vertical public access trail in Eagle Canyon, CPH will implement a habitat enhancement plan in Eagle Canyon. This plan includes surveys for, and eradication of, exotic aquatic species and trash removal. The habitat enhancement plan will be prepared and submitted to the Service for review and written approval prior to construction activities.

The habitat enhancement plan will describe how CPH will create 1.15 acres of southern willow scrub in several intermittent drainages onsite, including Tomate Canyon (see attached Site Plan). The habitat enhancement plan will describe how the 1.15 acres of southern willow scrub will be installed in accordance with the BELP no later than the fall immediately following implementation of the RAP and completion of golf course construction. The 1.15 acres of southern willow scrub cannot be constructed prior to implementation of the RAP and construction of the golf course because the required grading must be phased with golf course construction activities. The creation, installation, monitoring and success criteria are described in the BELP and are approved by the Corps, the Service and the County. The eradication of exotic plant species from Eagle Canyon will be conducted in accordance with the BELP.

The habitat enhancement measures described below will improve the tidewater goby habitat in Eagle Canyon and the California red-legged frog habitat throughout the proposed golf course. These enhancement measures will allow for better frog dispersal conditions across the proposed project site as compared to existing conditions so that implementation of the proposed project will result in increased chances for California red-legged frog population expansion and dispersal. More chances for dispersal and an increase in habitat will improve chances for genetic interchange with other California red-legged frogs in project area drainages, enhancing local and regional population viability and long-term survival of the species. In addition, the habitat enhancement measures will help to maintain a viable tidewater goby population onsite by stabilizing soils adjacent to Eagle Canyon Creek and by

controlling non-native species that can prey upon or compete with the tidewater gobies onsite, allowing for tidewater goby population increases which will be better able to withstand periodic bouts of unfavorable conditions (*i.e.*, flood conditions resulting in a wash-out of the berm at the mouth of Eagle Canyon). This, in turn, will improve the long-term viability of the local (onsite) and will also add to the regional viability of this species by maintaining a source of individuals that can recolonize nearby habitats if their populations are lost (tidewater gobies can migrate east along the coast when the berm at the mouth of Eagle Canyon is washed-out annually during winter storms).

Non-Native Species Surveys

A survey will be conducted in the summer of each year to determine the extent and type of non-native vegetation (excluding eucalyptus trees) present in Eagle Canyon between the railroad and the ocean (non-native species surveys will be conducted in Eagle Canyon within the limits of the conservation easement (2.46 acres) on as indicated on the attached Site Plan). Non-native species currently present in Eagle Canyon include German ivy (*Senecio mikanioides*), wild fennel (*Foeniculum vulgare*), horseweed (*Conyza canadensis*) and castor-bean (*Ricinus communis*). Non-native species in Eagle Canyon currently dominate a portion of the western slope of Eagle Canyon south of the railroad bridge, occupying approximately 0.3 acre. During the surveys, the approximate area containing the non-native species and their density will be estimated. The frequency of these surveys will be reduced to every other year if no patches of non-native species are found for four consecutive years.

Surveys for non-native aquatic species (*e.g.*, bullfrogs, crayfish, mosquitofish, and snapping turtles) known to be detrimental to California red-legged frog and tidewater goby populations will be conducted annually in the summer or fall. These may be combined with the California red-legged frog monitoring surveys.

Non-Native Species Eradication

Non-native, invasive plant species found during the annual surveys will be removed using methods that will not harm California red-legged frogs or cause pollutants to enter the creek. Eradication will be accomplished using hand tools or pulling individual plants by hand. For many annual species this will likely involve cutting the plants (one or more times) before they set seed.

Removal of non-native aquatic species found during the surveys will be accomplished with methods currently approved by the Service that minimize the potential for take of California red-legged frogs and tidewater gobies. Potential methods include traps, seine, dip net, hand, and spear/gig. Removal will be by biologists that can distinguish the non-native species (including egg and tadpole stages) from the native species to be protected. Eradication shall not be conducted when California red-legged frog eggs are present.

The first annual surveys and plant eradication will occur prior to construction of the golf course. Prior to the implementation of the RAP or construction of the golf course, 0.15 acre of riparian scrub and 0.12 acre of Venturan coastal sage scrub will be created in Eagle Canyon (see attached Site Plan).

Raccoons and Opossums

Surveys for raccoons and opossums will be conducted annually in the summer or fall. These species will be trapped and removed as allowed by local and state authorities.

Revegetation

The riparian seed mix, as described in the BELP, will be used in those areas of Eagle Canyon where non-native species were removed. The installation, monitoring and success criteria for these areas will be conducted in accordance with the BELP.

Trash Removal

Eagle Canyon will be monitored on a quarterly basis for the presence of trash, which currently gets washed down Eagle Canyon during storm events from upstream properties. All trash will be removed by hand from Eagle Canyon during the quarterly surveys.

Wetlands Creation Onsite

In order to mitigate for implementation of the RAP impacts to 0.26 acre of recently-created, isolated, manmade wetlands and for project construction impacts to 0.4 acre of ephemeral and intermittent stream channels onsite (as permitted by the Corps and County), considered

potential dispersal habitat for the California red-legged frog, CPH will create 1.15 acres of southern willow scrub in several intermittent drainages onsite, including Tomate Canyon (see attached Site Plan). The 1.15 acres of southern willow scrub will be installed in accordance with the BELP no later than the fall immediately following implementation of the RAP and completion of golf course construction. The creation, installation, monitoring and success criteria are described in the BELP and are approved by the Corps, the Service and the County. CPH has assured funding of this mitigation, as described in *Section 10.0*, in the amount of $180,941.20 which includes costs associated with monitoring the wetlands creation. Costs associated with the construction, installation and maintenance of the wetlands creation are included in *Tables 8, 9 and 10*. CPH will place conservation easements preserving in perpetuity 0.83 acre in the vernal pool area, 3.03 acres in several intermittent drainages, including Tomate Canyon, north of the railroad, 1.21 acres in Drainage 4 North, and 2.46 acres in Eagle Canyon south of the railroad, as provided on the Site Plan. Prior to initiation of the RAP or any construction on the golf course, the conservation easements, including the designated easement holder, a Management Plan, and endowment providing for protection and management in perpetuity shall be approved in writing by the Service and recorded.

SECTION 8.0
ADAPTIVE MANAGEMENT AND MONITORING MEASURES

Measures have been included in the HCP to avoid and minimize project impacts to the extent feasible, but some modifications to the measures or addition of other measures (such as newly developed methods to protect species) may be necessary to ensure maximum protection of listed species. Consequently, CPH and ARCO will perform regular checks during and after implementation of those measures to determine their effectiveness and the actual extent of project impacts. Monitoring and reporting are described below in *Sections 8.1 and 8.2.* Funding assurances for monitoring and management responsibilities described in this Section are set forth in *Section 10.*

8.1 Adaptive Management and Monitoring

Monitoring will be necessary to (1) ensure that the avoidance, minimization and mitigation measures are implemented and (2) determine the effectiveness of the measures. Field monitoring for this HCP is required primarily during and immediately following project construction in order to insure that no take occurs. This includes monitoring by the Service-approved biologist of remediation areas and construction areas prior to and during remediation and construction activities (*i.e.*, monitoring of construction activities in Eagle Canyon associated with installation of the water pipelines and public access trail [lateral and vertical access]); relocating any California red-legged frogs found in the work area; monitoring by the Service-approved biologist of sediment and erosion control measures prior to and after storm events; monitoring by golf course personnel immediately prior to and during mowing of the roughs; monitoring by a qualified biologist of wetlands mitigation and revegetation areas until revegetation success criteria are met; and monitoring by a qualified biologist of disturbed areas for vegetation growth and erosion until revegetation success criteria are met. The duties and responsibilities of the monitors are described in more detail below.

8.1.1 Implementation of the RAP

All observations of California red-legged frogs, including any take, made during remediation activities will include (at a minimum) number of individuals, location, size (approximate), date and time, and behavior. The information will be summarized and provided to the Service in the final monitoring report (see *Section 8.2*). Survey results will include the number

of California red-legged frogs relocated and the location where each was released. If a California red-legged frog is taken, ARCO will evaluate the cause of take and respond with adaptive management measures such as doubling the number of monitors, altering the time of day that work is initiated, holding additional worker education training sessions and removing vegetation by hand.

8.1.2 Golf Course Construction

All observations of California red-legged frogs and tidewater gobies, including any take, made during construction will include (at a minimum) number of individuals, location, size (approximate), date and time, and behavior. The information will be summarized and provided to the Service in the final monitoring report (see *Section 8.2*). Survey results for tidewater goby will be included as well as the number of California red-legged frogs relocated and the location where each was released. If take of a California red-legged frog occurs, CPH will evaluate the cause of take and respond with adaptive management measures such as doubling the number of monitors, altering the time of day that work is initiated, holding additional worker education training sessions and removing vegetation by hand.

A water sampling program will be implemented in Eagle Canyon, Drainage 4 North and Tomate Canyon during golf course construction, following each rain event. Impacts of erosion and sedimentation to water quality will be measured using turbidity. Sampling locations include Eagle Canyon at the northern property line, north of the railroad and in the lagoon at the mouth of Eagle Canyon; Drainage 4 North at the northern property line and north of the railroad; and Tomate Canyon at the northern property line, north of the railroad and at the mouth of the creek. CPH will maintain water quality levels for turbidity below EPA aquatic life suspended solids and turbidity standards: the compensation point for photosynthesis should not be reduced by more than 10 percent of the seasonally established norm.

If tests reveal that the turbidity threshold is exceeded, project construction shall cease until the turbidity is reduced below the thresholds and the sediment and erosion plan will be modified (*e.g.*, additional sandbags, silt fencing, straw bales) in order to maintain turbidity levels below the thresholds.

In accordance with the BELP (Table C), the wetlands revegetation areas (see attached Site Plan) will be monitored annually to determine if the areas are meeting the success criteria (*i.e.*,

75 percent or greater cover within two years and 80 percent or greater cover within five years) required by the County. If the success criteria are not met in any given year, additional treatments (*i.e.*, hydroseeding, planting, etc.) will be conducted. At such time as the success criteria are met (probably after three to five years), the annual monitoring will be discontinued.

8.1.3 Golf Course Operation

During project operations, monitoring will entail daily (when maintenance activities involving equipment are to occur) checks for California red-legged frogs in the playing areas of the golf course to insure that no take occurs. These checks will be conducted in the morning by maintenance personnel trained in identification of California red-legged frogs and will be part of their regular checks for trash and grass health, and mowing. If any California red-legged frogs are found, a Service-approved biologist or trained designated employee (whose name and qualifications have been submitted to the Service) will be called in immediately to verify that the animal is a California red-legged frog and to relocate the frog. All sightings of California red-legged frogs on the golf course, including any incidents where take occurs, will be recorded in a permanent log for the project. If a California red-legged frog is taken as a result of golf course operations, then CPH will evaluate the cause of take and respond with adaptive management measures such as holding additional training sessions for golf course maintenance staff, implementing additional restrictions on mowing and other maintenance activity frequency and time of day, installing a wall around the water storage lake, posting signs along the golf cart paths regarding the presence of the California red-legged frog and installing speed bumps along cart paths.

Surveys will be conducted in the fall (September and October) of each year to determine the number of California red-legged frogs present in Eagle Canyon between the railroad tracks and the ocean. These surveys will use a standardized format of searching the habitat for one hour at night (this will be sufficient time based on the size of the area). The surveys will be conducted on four different nights at least three days apart for the California red-legged frogs. Surveys will be conducted for tidewater gobies in Eagle Canyon in the fall (September through November) after the main part of the breeding season is over and before the winter rains begin. The surveys will include a visual search by wading from the creek mouth to the railroad culvert followed by two seine hauls near the creek mouth and two hauls at the head of the lagoon using a 10-foot long minnow seine with 1/8-inch mesh. The fish captured will

be counted and released. The approximate proportion of adults and juveniles (young-of-the-year) captured will be recorded as well for the tidewater goby. This monitoring will verify whether California red-legged frogs and tidewater gobies continue to use this habitat and will be used to identify trends in use that may help in evaluating the importance of this habitat for the species. These data will also be evaluated to determine if changes in abundance of California red-legged frog and tidewater goby have occurred, and if so, to determine if changed circumstances (as described below in *Section 9.1*) have occurred.

To insure that surface water quality is not degraded, a water quality testing program (see *Section 3.1.1 and Table 3*) will be implemented in Eagle Canyon, Tomate Canyon, Drainage 4 North, the vernal pool and the reclaimed water storage lake on a regular basis to ensure that no adverse water quality impacts result from irrigation and chemical use within the golf course. Water quality testing data will be entered into a database to be kept onsite, summarized at the end of each rainy season, and compared to previous years' data. Surface water sampling and testing will be conducted by a third-party designee, in accordance with the terms of the draft ATMIPM. Samples will be taken from locations designated by the Service and County of Santa Barbara Department of Planning and Development (P&D) (see attached Site Plan). Surface water quality monitoring will be performed for the first two years of golf course operation. For Tomate Canyon, Drainage 4 North and Eagle Canyon, if tests reveal that levels of nitrites, nitrates and phosphates are greater than the EPA standards for aquatic life, if dissolved oxygen levels are less than 5 parts ppm, or if pH levels are less than 6.0 or greater than 9.0 operation of the golf course shall be modified in accordance with the draft ATMIPM until testing shows no adverse impacts. EPA standards for aquatic life for nitrite nitrogen is 5 mg/L and for nitrate nitrogen is 90 mg/L. For the vernal pool and the water storage lake, if tests reveal that levels of nitrites, nitrates and phosphates are greater than the EPA standards for aquatic life, if dissolved oxygen levels are less than 5 ppm, or if pH levels are less than 6.0 or greater than 9.0, operation of the golf course shall be modified in accordance with the draft ATMIPM until testing shows no adverse impacts. Testing will be conducted monthly at first creek flush and until flow ceases; sediment testing will be conducted quarterly. Surface water quality sampling frequency may be reduced to a bi-monthly basis (once every two months) if after two years it is determined by CPH that no adverse impacts (*i.e.*, no evidence of background levels being exceeded) are occurring, and if approved by the Service and P&D. Testing may be further reduced (less frequent than bi-monthly) if approved in writing by the Service and P&D. Sediment sampling frequency may be reduced to a semi-annual basis (twice a year) if after two years it is determined by CPH

that no adverse impacts (*i.e.*, no evidence of background levels being exceeded) are occurring, and if approved in writing by the Service. Sampling frequency may be further reduced if approved in writing by the Service. Sampling frequency may only be reduced if there are no changes in chemical application methods and amounts.

In addition, CPH will implement an exotic species removal program, including implementing a bullfrog monitoring and removal program for the reclaimed water storage lake (see *Section 6.1.4*). Any bullfrogs found on the site will be removed. Any mosquitofish or other exotic aquatic species detrimental to California red-legged frogs will be removed from the water storage lake.

8.1.4 Eastern Lateral and Vertical Public Access Operation in Eagle Canyon

In order to insure that riparian habitat is preserved in Eagle Canyon, quarterly surveys (of two days each) will be conducted to see if people are staying on designated trails and if trail closures are being obeyed for the first two years after the project begins operation. The surveys will be conducted on clear days with no rain or fog. If people are not staying on the trails, the amount of habitat trampling will be recorded. This monitoring will be reduced to once a year if people appear to be staying on trails and obeying closures. This monitoring may be further reduced upon written approval by the Service. If one person using the eastern vertical access trail is observed leaving the trail or beach to enter Eagle Canyon, CPH will apply to the California Coastal Commission for an emergency permit to close the eastern vertical access from November 1 to May 1 instead of February 1 to May 1 as required by the RAIP. The California Coastal Commission may, however, deny the emergency permit at the Commission's discretion. CPH will also double the number of signs along the public access trail and at the mouth of Eagle Canyon.

In addition, CPH will implement an exotic species removal program, including implementing a bullfrog monitoring and removal program for Eagle Canyon (see *Section 7.0*). Any bullfrogs found on the site will be removed. Any mosquitofish or other exotic aquatic species detrimental to California red-legged frogs or tidewater gobies observed in Eagle Canyon will be removed. CPH will also implement a removal plan for exotic plant species in Eagle Canyon.

8.1.5 General Adaptive Management

8.0 Adaptive Management & Monitoring Measures

In addition to the specific monitoring programs and adaptive management responses described above, adaptive management will also be conducted as a general, ongoing response to monitoring results and additional scientific information relevant to the covered species.

Records, monitoring and reports described in *Section 8.1* will be reviewed each year to determine if the project goals are being met.

Based on these evaluations, CPH may revise the avoidance and minimization measures related to operation of the golf course to improve their effectiveness, and new measures or procedures may be added as appropriate. This monitoring, evaluation and refinement will continue over the life of the project to ensure that the protection measures are working as planned. The adaptive management measures described in this section involve revisions of the ongoing management plan, and costs of revised or new measures are limited to a contingency fund provided by CPH and described in *Section 10.*

8.2 Reporting

Dead or Injured Listed Species

Upon discovery of any dead or injured listed species within the project boundaries, the following procedures will be followed:

- Notification by telephone or FAX to the Service within 24 hours of the discovery. If injured animals are found, directions on how to handle the animals and what to do with them will be obtained from the Service.

- Provide a written report to the Service within three (3) working days that describes

  – Location of injured or dead individual
  – Species and number of individuals
  – Apparent cause of injury or death
  – Circumstances of injury or death, if known
  – Nature of injuries and status of the individuals
  – Disposition of any remains (obtain from the Service information on how and where to dispose of dead animal remains).

Construction Monitoring Reports

During construction, reports summarizing the measures implemented for protection of the

species covered in this HCP, describing the effectiveness of these measures, and documenting all observations of those species will be prepared from the daily environmental monitoring logs and field notes of the qualified biologist(s) and/or designated monitor(s). These reports will be submitted to the Service at approximately monthly intervals or at the end of specific construction activities in or near Eagle Canyon that take less than two months to complete. As noted above, any dead or injured listed species will be reported to the Service immediately. A final construction monitoring report will be prepared within six months after construction is complete. This report will summarize the monitoring activities performed, discuss the effectiveness of the required environmental protection measures, and give recommendations on how to improve the protection measures.

Annual Reports

Annual reports will be prepared and submitted to the Service by 1 January each year to evaluate compliance with the HCP and to determine if the goals and objectives of the HCP are being met. These reports will include:

- Objectives of the monitoring program
- Effects of the HCP on covered species and/or habitats
- Location of sampling/monitoring sites (*e.g.,* project work sites)
- Data collection methods
- Timing (dates), duration, and frequency of observations
- Results of the water and sediment sampling
- Data analysis (as appropriate) and by whom
- Evaluation of progress in meeting the goals and objectives of the HCP as well as terms and conditions of the Permits

Recommendations to Improve Compliance

If, after 10 years, the goals and objectives are being met, reporting can be decreased to every five years, with approval from the Service. Any changes in circumstances that increase the potential for take of listed species will be evaluated (see Section 8) and the monitoring adjusted as needed to ensure compliance with the HCP.

Water and Sediment Sampling Monitoring Reports

The water and sediment sampling results shall be provided to the Service in the Annual Report. However, if testing shows that background chemical levels have been exceeded, the Service shall be notified by fax and by telephone within five days after CPH receives the results.

SECTION 9.0
CHANGED/UNFORESEEN CIRCUMSTANCES

Section 10 regulations [50 CFR 17.22 (b)(2)(iii)] require that an HCP specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during the implementation of the HCP. In addition, the Habitat Conservation Plan Assurances (No Surprises) Rule [50 CFR 17.22 (b)(5) and (6): 63 FR 8859] defines changed and unforeseen circumstances and describes the obligations of the Permittee and the Service. The purpose of the Assurances Rule is to provide assurances to non-Federal landowners participating in habitat conservation planning under the Act that no additional land or water restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the Permittee.

9.1 Changed Circumstances

Changed circumstances are defined as changes in circumstances affecting a species or geographic area covered by a conservation plan that can reasonably be anticipated by plan developers and the Service and that can be planned for (*e.g.*, the listing of a new species, or a fire, or other natural catastrophic event in areas prone to such an event). If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and these additional measures were provided for in the plan's operating conservation program (*e.g.*, the conservation management activities or mitigation measures expressly agreed to in the HCP or IA), then the Permittee will implement those measures as specified in the plan. However, if additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and such measures were not provided for in the plan's operating conservation program, the Service will not require these additional measures absent the consent of the Permittee, provided that the HCP is being "properly implemented" (properly implemented means the commitments and the provisions of the HCP and the IA have been or are being fully implemented).

Other changed circumstances include natural disasters (*e.g.,* floods, fire, and drought), accidents not related to the project, changes in land use within the watershed of Eagle Canyon and substantial changes in the abundance of the species covered in this HCP. Examples of accidents not related to the project are fires or spills of hazardous materials.

Although location and frequency of such events cannot be predicted, those that have a reasonable probability to occur in the project area are listed in *Table 5* with measures to address their effects on species covered by this HCP. Additional information on two of the changed circumstances, newly listed species and accidents, is provided in the paragraphs below. In order to fund the responses to potential, anticipated changed circumstances, CPH will submit a letter of credit for $77,330. This will be renewed in the amount of $77,330, adjusted for inflation each year during the permit terms, even if portions of that amount were spent that year. Should a changed circumstance occur that costs more than was estimated in the table below, the applicant will provide the additional funds to respond to the changed circumstance as described.

TABLE 5. ANTICIPATED CHANGED CIRCUMSTANCES

Event	*Location*	*Occurrence*	*Impacts*	*Response*	*Cost*
Fire	Shrublands, grasslands, and woodlands (especially eucalyptus groves): 29 acres of site	10-50 year intervals	Temporary loss of vegetative cover -- <1 yr in grassland, 3-10 yr in shrublands and woodlands; temporary effects on California red-legged frogs and tidewater goby through increased runoff of sediments to Eagle Canyon Creek.	Evaluate burned areas for erosion potential; seed with those native species present before fire as necessary. Implement measures to prevent sedimentation from entering stream channels onsite.	$50,530 ($0.04 per square foot, up to 29 acres).
Drought & Flood	Eagle Canyon Creek	Possibly at 5-10 year intervals	Reduced water in Eagle Canyon Creek in droughts; erosion from high runoff in floods. Changes in distribution and abundance of species such as California red-legged frog and tidewater goby.	Droughts and floods are elements of the dynamic nature of stream channels and tidewater goby and California red-legged frog habitat. No action feasible for droughts; repair erosion on project property caused by floods, with appropriate permits.	$10,000 for erosion repair and permits.
Hazardous Materials Spills	Highway 101 at Eagle Canyon crossing	Potential for 1 or more spills	Pollution of Eagle Canyon Creek could affect California red-legged frog and tidewater goby in lagoon.	Provide access for cleanup crews and assist in cleanup activities.	No additional costs.
Land Use Changes (that could affect species on project site)	Primarily grazing and agricultural lands	Potential for land north of Highway 101, east and west of site	Change of grazing lands to more intensive agriculture, or conversion of grazing or agricultural lands to urban areas could cause loss of habitat for California red-	Provide any notices of such land use changes under the County Zoning Ordinances to the Service.	No additional costs.

			legged frogs in Eagle Canyon.		
Listing of New Species	On or adjacent to the project site	Unknown	Potential impacts resulting from human presence or golf course activities.	Develop avoidance, minimization and mitigation measures as necessary to avoid take.	$12,000 (100 hours at $120 per hour).
Substantial Change in Abundance of Species in HCP	Off site or onsite	Unknown	Potential for project to cause greater impact to species, thereby threatening survival.	Work with the Service to aid species by additional protection measures onsite.	$4,800 (40 hours at $120 per hour).
TOTAL					**$77,330**

If a new species that is not covered by the HCP but that may be affected by activities covered by the HCP is listed under the Act during the term of the Section 10 permits, the Section 10 permits will be re-evaluated by the Service and the HCP covered activities may be modified, as necessary, to insure that the activities covered under the HCP are not likely to result in take of any newly-listed species. In addition, if any currently-listed species that is not covered by the HCP but is discovered to be at risk of taking by project activities covered by the HCP, the Section 10 permits will be re-evaluated by the Service and the HCP covered activities may be modified, as necessary, to insure that the activities covered under the HCP are not likely to result in take of any currently-listed species. The Permittee shall implement the modifications to the HCP-covered activities identified by the Service as necessary to avoid the likelihood of 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 amendment of the Section 10 permits, in accordance with applicable statutory and regulatory requirements, to cover the newly-listed species or 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 take of the newly-listed species.

Project-Related Accidents

Accidents that could occur during construction include failure of erosion and sediment control measures during storm runoff events. Failure of sediment control measures could allow sediments to enter Eagle Canyon. Since this would be during storm events and construction would be at least 200 feet from the creek in Eagle Canyon, impacts to any California red-legged frogs or tidewater gobies would be minimal because the amount of sediment would only be a fraction of that being carried in the stream and because the high creek flow would flush the sediment out of the creek to the ocean.

Monitoring Associated with Project-Related Accidents

Whenever an accident occurs as a result of construction or operation of the project that has the potential to affect listed species, the Service shall be notified immediately (within 12 hours) by phone or FAX. This initial contact will include discussion of apparent impact and acceptable measures to prevent further impact while the problem is being addressed. Within three (3) days of the accident, CPH shall submit a written report describing the accident and effects on species or their habitat, measures taken to prevent further impact, cleanup measures implemented, and planned or proposed mitigation measures to repair or offset habitat damage. Any plans for remediation or repair work in listed species habitat shall be submitted to the Service for approval prior to performing the work. After the cleanup, pipeline repair, and any other repair work in the species habitat is completed, a report shall be submitted within three (3) weeks to the Service describing what was accomplished and the effectiveness of all protection measures used.

9.2 Unforeseen Circumstances

Unforeseen circumstances are events or changes in circumstances affecting a species or geographical area covered by an HCP that cannot be reasonably anticipated and that result in a substantial and adverse change in the status of the covered species. All reasonably foreseeable changes or events are addressed in Section 8.1; all other changes or events are unforeseen circumstances. In the event that such unforeseen circumstances occur during implementation of the HCP, ARCO or CPH shall immediately notify the Service staff who have functioned as the principal contacts for the proposed action. In determining whether such an event constitutes an unforeseen circumstance, the Service shall consider, but not be limited to, the following factors: size of the current range of the affected species; percentage of range adversely affected by the HCP; percentage of range conserved by the HCP; ecological significance of that portion of the range affected by the HCP; level of knowledge about the affected species and the degree of specificity of the species' conservation program under the HCP; and whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of the affected species in the wild.

If the Service determines that additional conservation and mitigation measures are necessary to respond to the unforeseen circumstance where the HCP is being properly implemented, the additional measures required of the Permittee must be as close as possible to the terms of the original HCP and must be limited to modifications within any conserved habitat area or to adjustments within lands or waters that are already set-aside in the HCP's operating conservation program. Additional conservation and mitigation measures shall involve the

commitment of additional land or financial compensation or restrictions on the use of land or other natural resources otherwise available for development or use under the original terms of the HCP only with the consent of the Permittee.

9.3 Amendment Procedures

9.3.1 Amendments to the Permit

During the specified permit period, amendment of the Section 10(a)(1)(B) permits would be required for any of the following changes:

- Significant revision of the permit area boundary;
- The listing under the Act of a new species not currently addressed in this HCP that may be taken by project activities;
- Modification of any important project action or mitigation component under the HCP, including funding, that may significantly affect authorized take levels, effects of the project, or the nature or scope of the mitigation program; or
- Any other modification of the project likely to result in significant adverse effects to the California red-legged frog or tidewater goby not addressed in the original HCP and permit application.

9.3.2 Amendments to the HCP

This HCP may, under certain circumstances, be amended without amending its associated permit, provided that such amendments are of a minor or technical nature and that the effect on the species involved and the levels of take resulting from the amendment does not exceed that described in the original HCP.

To amend the HCP without amending the permit, the Permittee must submit to the Service in writing a description of the proposed amendment, an explanation of why the amendment is necessary or desirable, and an explanation of why the effects of the proposed amendment are believed not to be significantly different from those described in the original HCP. If the Service concurs with the amendment proposal, it shall authorize the HCP amendment in writing, and the amendment shall be considered effective upon the date of the Service's written authorization.

9.3.3 Permit Renewal

Upon expiration, the ARCO and CPH Section 10 (a)(1)(B) permits may be renewed, if necessary, and that biological circumstances and other pertinent factors affecting the California red-legged frog or tidewater goby at the site are not significantly different than those described in the original HCP. At least thirty (30) days prior to the expiration of either permit, ARCO or CPH shall submit to the Service, in writing:

- A request to renew the permit;
- Reference to the original permit number;
- Certification that all statements and information provided in the original HCP and permit application, together with any approved HCP amendments, are still true and correct, or inclusion of a list of changes.
- A description of what take has occurred under the existing permit; and
- A description of what portions of the project are still to be completed, if applicable, or what activities under the original permit the renewal is intended to cover.

SECTION 10.0
FUNDING

10.1 Implementation of the RAP

In order to fund the biological monitoring proposed as elements of this CPH during implementation of the RAP, ARCO will post a bond for $4,080. *Table 6* below provides additional detail regarding biological monitoring.

TABLE 6. IMPLEMENTATION OF THE RAP COSTS FOR MONITORING

Activity	*Frequency*	*Person-hours*	*Cost*
Training for construction personnel	Once	4	$480
California red-legged frog surveys prior to remediation	Once	8	$960
California red-legged frog surveys during remediation	Daily for two weeks	20	$2,400
Reporting	Once	2	$240
TOTAL		**34**	**$4,080**

10.2 Implementation of the Golf Course

CPH is required by the County to post bonds for erosion control measures prior to issuance of a grading permit. CPH is also financially responsible for implementing the County's EQAP. The County selected a consultant, Storrer Environmental Services, Inc., to implement the EQAP for a fee of $180,941.20. As required by the County, CPH has paid one-fourth ($45,235.30) of the estimated fee. Upon implementation of the proposed project, the balance of the fee will be paid in semi-annual installments (every six months). The installation costs associated with the creation of 1.15 acres of wetlands monitoring until the wetlands meet the success criteria as described in the BELP, have been calculated and are included in the $180,941.20 EQAP fee. The EQAP fee will also provide for most of the monitoring in accordance with the above avoidance and mitigation measures in *Sections 6.1.1 and 6.1.3*, with the exception of monthly reporting, training for construction personnel, night surveys for California red-legged frogs during golf cart path construction, day and night surveys for each stream crossing during construction, and water quality testing for turbidity due to erosion and sediment. The cost for these additional requirements is estimated to be $18,960. CPH will post a bond for this amount prior to construction. *Table 7* below provides additional

detail regarding construction monitoring not covered by the EQAP.

TABLE 7. CONSTRUCTION COSTS FOR MONITORING

Activity	*Frequency*	*Person-hours*	*Cost*
Training for construction personnel	Once	4	$480
Night California red-legged frog surveys during golf cart path construction	Nightly for two weeks	40	$4,800
Day and night California red-legged frog surveys for each stream crossing	Two days and two nights for each stream crossing	60	$7,200
Water quality testing for turbidity due to erosion and sediment	After each rain event	30	$3,600
Monthly Reporting	Monthly	24	$2,880
Total			**$18,960**

In order to fund the biological monitoring proposed as elements of this HCP after project construction (*Sections 6.1.4 and 6.1.5*), CPH will post a bond for $313,822 prior to construction to cover monitoring costs for years 1 through 5 (*Tables 8, 9 and 10*), the amount to be adjusted annually for inflation per the Consumer Price Index (CPI) for urban, wage earners and clerical workers, Los Angeles-Riverside-Orange County, published by the Bureau of Labor Statistics, U.S. Department of Labor, or its successor. For years 6 through 25, CPH will provide a letter of credit for $58,862 prior to construction. This letter of credit will remain in effect for the permit term and will include language that will ensure that the letter of credit remains in effect should the permit be abandoned or revoked during the pendency of the permit term. This amount is based upon a determination by the Service of the items in *Table 11* which it considers imperative to be performed if CPH is no longer operating the golf course and the Service must evaluate the effects of golf course construction. If, during the permit term, CPH uses any of the amount in the letter of credit to fund the monitoring activities listed in *Table 11*, CPH must immediately replenish the amount taken. The amount of $58,862 would be more than adequate to cover the costs outlined in *Table 11* ($33,282) and would be sufficient to cover the costs for the following items determined by the Service to be imperative to be performed if CPH ceases to operate the golf course:

TABLE 8. OPERATIONS COSTS FOR MONITORING AND RESPONSES FOR YEAR 1

Activity	Frequency	Person-hours per year	Cost per year
California red-legged frog and bullfrog surveys in water storage lake	Annually; 2 days and 2 nights.	12	$1,360
California red-legged frog, tidewater goby and non-native aquatic species surveys in Eagle Canyon Creek	Annually	24	$2,520
Southern willow scrub site work and construction	Once	$0.29 per square foot (50,000 sf)	$14,500
Southern willow scrub irrigation system	Once	$0.35 per square foot (50,000 sf)	$17,500
Southern willow scrub plant installation	Once	$0.24 per square foot (50,000 sf); 240 salvaged cuttings@$2; 480 new cuttings@$4	$12,720
Southern willow scrub maintenance	Annually for five years	$0.25 per square foot (50,000 sf)/five years	$2,500
Coastal sage scrub site work and construction	Once	$0.25 per square foot (5,227 sf)	$1,310
Coastal sage scrub irrigation system	Once	$0.28 per square foot (5,227 sf)	$1,460
Coastal sage scrub plant installation	Once	$0.15 per square foot (5,227 sf)	$780
Coastal sage scrub maintenance	Annually for five years	$0.12 per square foot (5,227 sf)/five years	$630
Non-native plant surveys in Eagle Canyon	3 times per year for five years	18	$1,440
Non-native plant removal in Eagle Canyon	3 times per year for five years	70 (40hr@$10, 30hr @$15)	$850
Native plantings to replace non-native species removed in Eagle Canyon	3 times per year for five years	20	$300
Revegetation monitoring	3 times per year for five years	27	$2,160
Non-native aquatic species removal	Whenever found	32	$3,360
Monitoring and removal of raccoons and opossums	Once	16	$1,920
Surface water quality and sediment testing for all acute and chronic toxicity, nitrites, nitrates, phosphates, dissolved oxygen and pH	Baseline then monthly for water quality and quarterly for sediment	By fee	$12,240
Surface water testing for chemicals used within the buffer areas as required by the final ATMIPM	6 chemicals in five applications for fairways, tees & roughs; 5 chemicals in five applications for greens	By fee	$27,880
Training golf course personnel about California red-legged frog	Annually	3	$320
Access to beach monitoring	Quarterly for 2 years	8	$640
Installation of signs, gates and fencing	Once	16	$1,500
Reporting	Annually	20	$2,600
Total			**$110,970**

TABLE 9. OPERATIONS COSTS FOR MONITORING AND RESPONSES FOR YEARS 2 AND 3

Activity	Frequency	Person-hours per year	Cost per year
California red-legged frog and bullfrog surveys in water storage lake	Annually; 2 days and 2 nights.	12	$1,360
California red-legged frog, tidewater goby and non-native aquatic species surveys in Eagle Canyon Creek	Annually	24	$2,520
Southern willow scrub maintenance	Annually for five years	$0.25 per square foot (50,000 sf)/five years	$2,500
Coastal sage scrub maintenance and monitoring	Annually for five years	$0.38 per square foot (5,227 sf)/five years	$1,990
Non-native plant surveys in Eagle Canyon	3 times per year for five years	18	$1,440
Non-native plant removal	3 times per year for five years	70 (40hr@$10, 30hr @$15)	$850
Native plantings to replace non-native species removed	3 times per year for five years	20	$300
Non-native aquatic species removal	Whenever found	32	$3,360
Monitoring and removal of raccoons and opossums	Once	16	$1,920
Revegetation monitoring	3 times per year for five years	27	$2,160
Surface water quality and sediment testing for all acute and chronic toxicity, nitrites, nitrates, phosphates, dissolved oxygen and pH	Monthly for water quality and quarterly for sediment	By fee	$10,740
Surface water testing for chemicals used within the buffer areas as required by the final ATMIPM	6 chemicals in five applications for fairways, tees & roughs; 5 chemicals in five applications for greens	By fee	$26,184
Training golf course personnel about California red-legged frog	Annually	3	$320
Access to beach monitoring	Annually	8	$640
Installation of additional signs and speed bumps on cart paths	Annually or as necessary	8	$500
Reporting	Annually	20	$2,600
Total			**$58,904**

TABLE 10. OPERATIONS COSTS FOR MONITORING AND RESPONSES FOR YEARS 4 AND 5

Activity	Frequency	Person-hours per year	Cost per year
California red-legged frog and bullfrog surveys in water storage lake	Annually; 2 days and 2 nights.	12	$1,360
California red-legged frog, tidewater goby and non-native aquatic species surveys in Eagle Canyon Creek	Annually	24	$2,520
Southern willow scrub maintenance	Annually for five years	$0.25 per square foot (50,000 sf)/five years	$2,500
Coastal sage scrub maintenance and monitoring	Annually for five years	$0.38 per square foot (5,227 sf)/five years	$1,990
Non-native plant surveys in Eagle Canyon	3 times per year for five years	18	$1,440
Non-native plant removal	3 times per year for five years	70 (40hr@$10, 30hr @$15)	$850
Native plantings to replace non-native species removed	3 times per year for five years	20	$300
Non-native aquatic species removal	Whenever found	32	$3,360
Monitoring and removal of raccoons and opossums	Once	16	$1,920
Revegetation monitoring	3 times per year for five years	27	$2,160
Surface water quality and sediment testing for all acute and chronic toxicity, nitrites, nitrates, phosphates, dissolved oxygen and pH	Monthly for water quality and quarterly for sediment	By fee	$4,890
Surface water testing for chemicals used within the buffer areas as required by the final ATMIPM	6 chemicals in five applications for fairways, tees & roughs; 5 chemicals in five applications for greens	By fee	$15,492
Training golf course personnel about California red-legged frog	Annually	3	$320
Access to beach monitoring	Annually	8	$320
Installation of additional signs and speed bumps on cart paths	Annually or as necessary	8	$500
Reporting	Annually	20	$2,600
Total			**$42,522**

TABLE 11. OPERATIONS COSTS FOR MONITORING AND RESPONSES FOR YEARS 6 THROUGH 25

Activity	Frequency	Person-hours per year	Cost per year
California red-legged frog and bullfrog surveys in water storage lake	Annually; 2 days and 2 nights.	12	$1,360
California red-legged frog, tidewater goby and non-native aquatic species surveys in Eagle Canyon Creek	Annually	24	$2,520
Non-native aquatic species removal	Whenever found	32	$3,360
Monitoring and removal of raccoons and opossums	Once	16	$1,920
Surface water quality and sediment testing for all acute and chronic toxicity, nitrites, nitrates, phosphates, dissolved oxygen and pH	Monthly for water quality and quarterly for sediment	By fee	$4,890
Surface water testing for chemicals used within the buffer areas as required by the final ATMIPM	6 chemicals in five applications for fairways, tees & roughs; 5 chemicals in five applications for greens	By fee	$15,492
Training golf course personnel about California red-legged frog	Annually	3	$320
Access to beach monitoring	Annually	8	$320
Installation of additional signs and speed bumps on cart paths	Annually or as necessary	8	$500
Reporting	Annually	20	$2,600
Total			**$33,282**

- California red-legged frog and bullfrog surveys in the water storage lake (five years at $1,360 per year)
- California red-legged frog and tidewater goby and non-native species surveys within Eagle Canyon Creek (five years at $2,520 per year)
- Water quality and sediment testing for acute and chronic toxicity, etc. (one year at $4,890)

- Water quality and sediment testing for other chemicals (one year at $15,492)
- Beach access monitoring (19 years at $320 per year)
- Reporting (five years at $2,600 per year)

In order to fund the biological monitoring and responses associated with anticipated changed circumstances, CPH will submit a letter of credit for $77,330 prior to construction of the golf course (see *Table 5* above). This bond will be renewed annually and the amount will be adjusted annually for inflation per the CPI.

In addition, as part of CPH's reporting requirements, a copy of the proposed annual operating budget shall be submitted each year to the Service, documenting that CPH is adequately providing for funding for each of the requisite activities under the HCP.

In order to provide for maintenance of those areas preserved in perpetuity by the conservation easements, CPH will provide an endowment of $18,825 ($2,500 per acre) to the holder of the easements. This endowment of $8,825 is subject to review and written approval by the holder of the conservation easement. If the easement holder feels this amount is inadequate, CPH will negotiate with the easement holder until a consensus is reached.

All bonds described in this section (*Section 10.2*) will be annually posted by CPH with a condition that the bonds must be renewed each year unless the Service approves the cessation of annual renewals.

SECTION 11.0
ALTERNATIVES

Section 10(a)(2)(A)(iii) of the Endangered Species Act of 1973, as amended, requires that alternatives to the proposed taking of species be considered and reasons why such alternatives are not implemented be discussed. These alternatives are presented below.

11.1 No Action

The No Action alternative involves not constructing the project. This alternative would result in retention of the project site in its present condition, including the informal coastal access by trespass through Eagle Canyon. The golf course and associated facilities, including the coastal access, would not be developed. Thus, the potential for impacts to listed species on the site as a result of the informal access by trespass across the site from Highway 101 would remain unchanged. Moreover, increased development (*e.g.*, Bacara) off site to the east of Eagle Canyon could result in greater impacts to the California red-legged frog and tidewater goby on the site by trespass into Eagle Canyon from foot traffic along the beach. It is estimated that trespassers through Eagle Canyon could take five California red-legged frogs and five tidewater gobies per ten years as a result of trampling, harassment or capture in the absence of a managed access program. It is estimated that trespassers over the remainder of the project site could take one California red-legged frogs per ten years as a result of trampling, harassment or capture in the absence of a managed access program.

11.2 Reduced Take

Several alternatives for constructing the project were addressed in the FEIR. These included a reduced scale project and use of two alternative sites (Naples and Patterson). The reduced scale project involved elimination of the par-three course adjacent to Eagle Canyon but still included the coastal access. This alternative would have about the same potential for take of listed species as the proposed action. Impacts of alternative sites are discussed below.

11.3 Alternative Sites

Construction of the golf links at either of the alternative sites addressed in the FEIR would eliminate the potential for impacts at the proposed site but would generally have similar impacts for most environmental resources at the alternative sites, including the potential for impacts on listed species. The Naples site is located just west of the proposed site and is near

Dos Pueblos Creek, a potential steelhead trout stream. The Santa Barbara Museum of Natural History has no confirmed records for the presence of California red-legged frogs in this stream (probably due to lack of surveys), although the species may be present because suitable California red-legged frog habitat is present. Impacts on traffic and agricultural resources would be less than for the proposed project site. The Patterson site is adjacent to Atascadero Creek, a tributary to Goleta Slough, that historically has been used by steelhead trout. Upstream barriers, however, may have eliminated access to upstream spawning areas in this stream and its tributary, Maria Ygnacia Creek. Impacts on biological resources, traffic, and aesthetics would be less than for the proposed project and fire protection would be improved. However, the Patterson site is an existing agricultural operation of long-standing with prime soils. Existing policies and Board of Supervisors' decisions concerning the Goleta Community would prohibit the conversion of the site from agriculture. Use of the Naples site would be unlikely to reduce the potential for take of listed species while the Patterson site could possibly reduce that potential, but conversion of the site would not be permitted. Construction of the project at an alternative site, thus, does not appear to be a viable or feasible method to reduce the potential for take of listed species.

11.4 No Eastern Vertical Access Alternative

Construction and operation of the Dos Pueblos Golf Links project without vertical access in or near Eagle Canyon would eliminate the potential for take of California red-legged frogs and tidewater gobies that could occur as a result of such access (anticipated take of one California red-legged frog and one tidewater goby per ten years). The lateral access trail, however, would still be constructed on the site to Eagle Canyon Creek, although it would be blocked from use east of the view point until the eastward continuation of that trail is constructed. In addition, access to Eagle Canyon via the beach, from both the east and west, would continue when tides are low enough for such access. In the absence of a managed access program, informal access to Eagle Canyon (south of U.S. Highway 101) from foot traffic along the beach could result in greater impacts to the California red-legged frog and tidewater goby in Eagle Canyon due to increased development off site. It is estimated that trespassers through Eagle Canyon could take five California red-legged frogs and five tidewater gobies per ten years as a result of trampling, harassment or capture in the absence of a managed access program.

The County and California Coastal Commission both approved the previous Dos Pueblos Golf Links project with the eastern vertical access. If the California Coastal Commission

were to require this access as a condition of their approval, this alternative would not be feasible.

11.5 Eastern Vertical Access Within Eagle Canyon Alternative

Construction of the eastern vertical access within the interior of Eagle Canyon, as originally approved by the County and California Coastal Commission, would directly impact the habitat of tidewater goby and the breeding habitat of California red-legged frog (see *Figure 5*). This alternative has the same anticipated take for the California red-legged frog during implementation of the RAP, construction of the golf course, operation of the golf course and operation of the lateral and western vertical public access trails as does the Preferred Alternative. This alternative, however, would result in greater take of California red-legged frogs and tidewater goby in Eagle Canyon during construction than would the preferred alternative. It is estimated that construction of the eastern vertical access trail within the interior of Eagle Canyon could take two California red-legged frogs and five tidewater gobies as a result of crushing or trampling. After consultation with the Service and the California Coastal Commission, this alternative was rejected and the eastern vertical access was relocated to the beach at the mouth of Eagle Canyon.

11.6 Preferred Alternative

Construction and operation of the Preferred Alternative could result in take of up to six California red-legged frogs per ten years and one tidewater goby per ten years (see *Section 5.4*). The anticipated take for the Preferred Alternative is less than that of the No Action Alternative, the No Eastern Vertical Access Alternative and the Eastern Vertical Access within Eagle Canyon Alternative. After consultation with the Service and the California Coastal Commission, the Eastern Vertical Access within Eagle Canyon Alternative was rejected and the eastern vertical access was relocated to the beach at the mouth of Eagle Canyon. In addition, this alternative provides for a managed public access program. The anticipated take for the Preferred Alternative is the same for that of the Reduced Project Alternative. Regarding the Alternative Sites, the Preferred Alternative would result in approximately the same level of take as the Naples Site and in less take than the Patterson site. Conversion of the Patterson site, however, would not be permitted due to the active agricultural uses of the prime soils. For these reasons, the proposed project is the Preferred Alternative.

Figure 5 Previously Proposed Eagle Canyon Access

SECTION 12.0
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APPENDIX A

Biological Enhancement Landscape Plan

APPENDIX B

Restricted Access Implementation Plan

APPENDIX C

Project Construction Schedule

APPENDIX D

Agronomic Turf Management and Integrated Pest Management