

**MINUTE ITEM**

This Calendar Item No. C59 was approved as Minute Item No. 59 by the California State Lands Commission by a vote of 3 to 0 at its 6-14-99 meeting.

**CALENDAR ITEM  
C59**

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06/14/99

PRC 8092

W 6005.71

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M. Voskanian

**CONSIDER APPROVAL OF A NON-EXCLUSIVE GEOPHYSICAL SURVEY PERMIT ON TIDE AND SUBMERGED LANDS AND NAVIGABLE WATERWAYS UNDER THE JURISDICTION OF THE CALIFORNIA STATE LANDS COMMISSION**

**APPLICANT:**

Texaco Exploration and Production, Inc.  
Attn.: Mr. Neil B. Hokanson  
4601 DTC Blvd.  
Denver, CO 80237

**AREA, LAND TYPE AND LOCATION:**

The proposed geophysical survey will cover approximately 74 square miles within the Sacramento-San Joaquin Delta, San Joaquin, Sacramento and Contra Costa counties. The proposed project area includes State tide and submerged lands in the Delta waterways and all or portions of eighteen islands and/or tracts.

**TERMS OF PROPOSED PERMIT:**

Beginning July 1, 1999, through June 30, 2000.

**PREREQUISITE CONDITIONS, FEES AND EXPENSES:**

Required fees, expense deposit, and other security have been received. The applicant has been notified that the California Department of Fish and Game fee of \$1,250 is due pursuant to Section 711.4 of the Fish and Game Code.

**PROPOSED SURVEY:**

The geophysical survey will be conducted by establishing a temporary grid of 7,139 seismic detectors on 39 parallel receiver lines. Texaco is proposing to utilize a radio telemetry system to record data during this 3D seismic survey of the project area. The detectors, called geophones (onshore) or hydrophones (in water), will be connected to the receiver lines, which in turn will be connected to Remote Seismic Recorder (RSR) instruments to retrieve and store data. The

CALENDAR PAGE	<b>000354</b>
MINUTE PAGE	<b>005846</b>

CALENDAR ITEM NO. C59 (CONT'D)

RSR unit consists of a recording unit connected to six geophones or hydrophones. The geophones are deployed in a linear alignment. This system eliminates the need for a continuous cable system, which are typically used during a seismic program. This advanced methodology eliminates the need to transverse the entire receiver line with cable, allowing wetland habitat areas to remain undisturbed. The receiver lines will vary from three to 10.5 miles in length and will be spaced 1,320 feet apart, oriented southeast/northwest. The combined length of the receiver lines is approximately 296 miles. Crossing the receiver lines will be "source lines". Shot holes for the seismic source will be drilled conventionally in the upland areas and will utilize Vibra-Ram technology in the waterways. The Vibra-Ram device is a hydraulically operated, mechanically driven unit which will insert a seismic charge and the cap wire into the substrate. The hole will close (or collapse) upon withdrawal of the unit, creating a fully buried charge. Use of such method requires that the charge be no more than three pounds of dynamite or its equivalent, and that burial is at least 20 feet below the surface. This burial device utilizes no drilling mud or drilling fluids. Source lines will be located perpendicular to receiver lines at 1,320 foot intervals. The proposed project will include approximately 1,109 source lines, with most lines having approximately 216 shot holes per line. The shot holes will be spaced 220 feet apart. In all, 6,876 shot holes will be located on land and in waterways.

**STATUTORY AND OTHER REFERENCES:**

- A. Public Resources Code section 6826.
- B. Public Resources Code section 21080(c).
- C. Public Resources Code section 6870.
- D. California Code of Regulations, section Title 2, Article 2.9, 2100.
- E. California Code of Regulations, section Title 2, 2905(e)(3).
- F. California Code of Regulations, section Title 14, 15074.
- G. California Code of Regulations, section Title 14, 15074.1.

**PERMIT STREAMLINING ACT DEADLINE:**

September 1, 1999.

CALENDAR ITEM NO. C59 (CONT'D)

**OTHER PERTINENT INFORMATION:**

1. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines (Title 14, California Code of Regulations, section 15025), Commission staff has prepared a Proposed Mitigated Negative Declaration identified as ND 693, State Clearinghouse No. 990442021. Such Proposed Mitigated Negative Declaration was prepared and circulated for public review pursuant to the provisions of the CEQA.

Based on the Initial Study, the Proposed Mitigated Negative Declaration, and the comments received in response thereto, there is no substantial evidence that the project will have a significant effect on the environment; Title 14, California Code of Regulations, section 15074(b).

2. A Mitigation Monitoring Program has been prepared in conformance with the provisions of the CEQA (Public Resources Code section 21081.6). As a result of the public review process, including public hearings conducted on the project prior to its approval, the Commission has deleted portions of mitigation measures it considered undesirable and in mitigating or avoiding potential significant environmental effects. Such modifications will not, in themselves, cause any potentially significant effect on the environment; Title 14, California Code of Regulations, Section 15074.1.
3. This activity involves lands identified as possessing significant environmental values pursuant to Public Resources Code section 6370, et. seq. Based upon the staff's consultation with the persons nominating such lands and through the CEQA review process, it is the staff's opinion that the permit, as part of the program for the project as proposed, is consistent with its use classification.

**EXHIBITS:**

- A. Survey Area and Location Map
- B. Special Conditions
- C. Mitigation Measures incorporated into the Project
- D. Mitigation Monitoring Program

CALENDAR PAGE	C00356
MINUTE PAGE	005848

CALENDAR ITEM NO. C59 (CONT'D)

**RECOMMENDED ACTION:**

IT IS RECOMMENDED THAT THE COMMISSION:

**CEQA FINDINGS:**

1. CERTIFY THAT A PROPOSED MITIGATED NEGATIVE DECLARATION, CSLC ND 693, STATE CLEARINGHOUSE NO. 990442021, WAS PREPARED FOR THIS PROJECT PURSUANT TO THE PROVISIONS OF THE CEQA, AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.
2. ADOPT THE PROPOSED MITIGATED NEGATIVE DECLARATION AND DETERMINE THAT THE PROJECT, AS APPROVED, WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.
3. ADOPT THE MITIGATION MONITORING PROGRAM, AS CONTAINED IN EXHIBIT C, ATTACHED HERETO.
4. FIND THAT THIS ACTIVITY IS CONSISTENT WITH THE USE CLASSIFICATION DESIGNATED BY THE COMMISSION FOR THE LAND PURSUANT TO PUBLIC RESOURCES CODE SECTIONS 6370, ET. SEQ.

**AUTHORIZATION:**

AUTHORIZE ISSUANCE TO TEXACO EXPLORATION AND PRODUCTION INC., OF A NON-EXCLUSIVE GENERAL PERMIT TO CONDUCT GEOPHYSICAL SURVEYS FOR THE PERIOD JULY 1, 1999 THROUGH JUNE 30, 2000, USING THE VIBRA-RAM METHOD OF BURYING SEISMIC CHARGES AND RECEIVERS, ON TIDE AND SUBMERGED LANDS AND NAVIGABLE WATERWAYS UNDER THE JURISDICTION OF THE COMMISSION WITHIN THE PERMIT AREA DESIGNATED ON EXHIBIT B, ATTACHED HERETO.

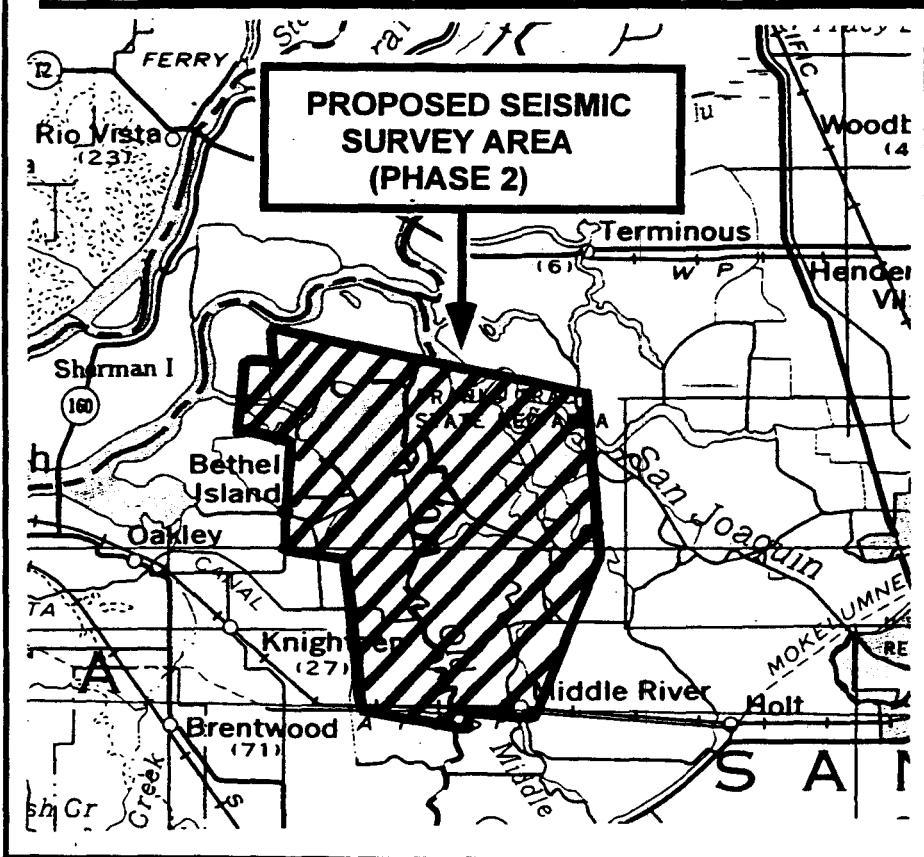
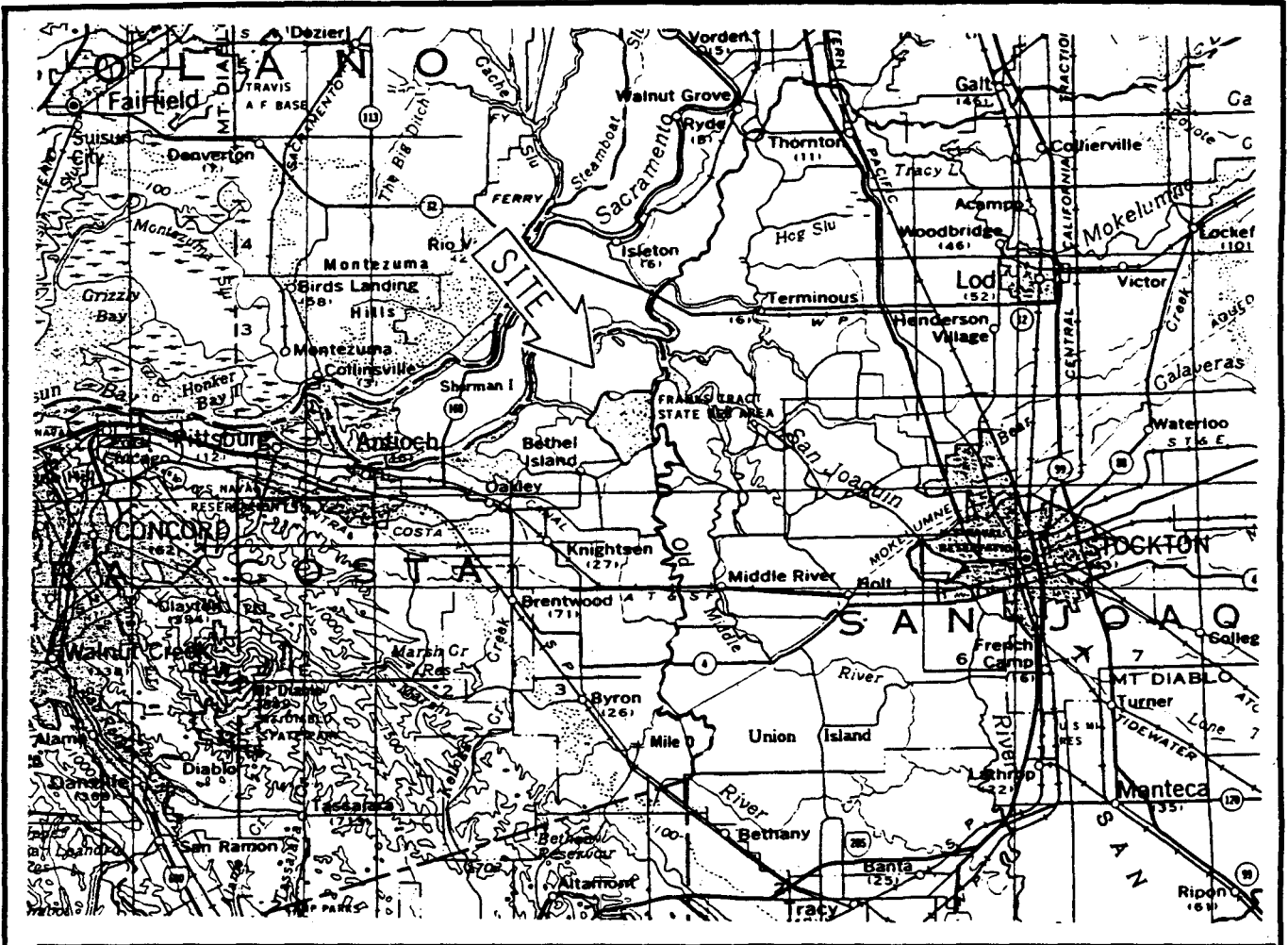


EXHIBIT "A"  
 W 6005.71  
 GEOPHYSICAL SURVEY  
 TEXACO E & P INC.  
 CONTRA COSTA COUNTY  
 SAN JOAQUIN COUNTY  
 CALIFORNIA



CALENDAR PAGE 600358  
 MINUTE PAGE 600350

## **EXHIBIT B**

### **Texaco Central Delta Geophysical Project – Phase II**

#### **SPECIAL CONDITIONS**

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1. Texaco shall provide the following notification to: Building 50-6, Coast Guard Island, Alameda CA 94501-5100, Attention: QMI Mike Carlson:
  - size and placement of any floating equipment;
  - radio telephone frequencies and call signs; and
  - the name and telephone number of project manager;
  - corresponding start and finish dates of the project.
  
2. Texaco will utilize several hot-crew vessels and a biological monitoring vessel during detonation of explosive. These vessels will also be utilized to prevent mariners from entering immediate shot-point detonation areas during the seismic survey. Since the project is currently scheduled to begin on August 1, 1999, Texaco shall meet with the Coast Guard Captain of the Port (COTP) of San Francisco in mid-June (six weeks in advance) to discuss any additional measures which may be necessary to prevent mariners from entering the work areas as the seismic survey progresses.
  
3. Prior to commencement of detonation activities, tentatively scheduled for Aug. 1, 1999, Texaco shall mail out a public announcement to each residence and land owner within Reclamation District #799 (Hotchkiss Tract) and Bethel Island Municipal Improvement District, with a corresponding hotline number to contact with questions and/or concerns. A Texaco appointed Project Manager shall maintain the required hotline service for all public inquiries.

CALENDAR PAGE **00359**

MINUTE PAGE **005851**

## "EXHIBIT C"

### MITIGATION MEASURES INCORPORATED INTO THE PROJECT

#### WATER RESOURCES

**Mitigation Measure WR-1** Waste generated during construction shall be stored in designated waste collection areas and containers away from watercourses, and shall be disposed of regularly.

**Mitigation Measure WR-2** Vehicles and equipment shall be maintained properly to prevent leakage of hydrocarbons and other automotive fluids, and shall be examined for leaks on a daily basis. All maintenance shall occur in designated areas located away from watercourses. Designated areas shall include drains pans, drop cloths, and absorbent materials to clean up any discharge of fluids.

**Mitigation Measure WR-3** All fueling of vehicles shall occur in designated areas. Designated fueling areas shall include drain pans, drop cloths, and absorbent materials to clean up any spills.

**Mitigation Measure WR-4** Any accidental spill of hydrocarbons or other vehicle fluids that may result during the project shall be cleaned up immediately, and kept out of watercourses to the greatest extent possible. Absorbent materials shall be maintained by the project crews at all times for this purpose. The responsible agencies shall be notified immediately in the event of an accidental spill to ensure proper clean up and disposal of waste.

**Mitigation Measure WR-5** All conditions of permits issued by the Regional Board, CDFG, and ACOE that relate to minimizing water quality impacts shall be met by the project proponent.

#### BIOLOGICAL RESOURCES

**Mitigation Measure BR-1. Avoid Impacts to Aquatic Species.** In all waterways and flooded land tracts within the project site, proposed Vibra-Ram and seismic charge detonation activities shall be conducted from August through September to avoid impacts to spawning activities of sensitive aquatic species. Potential impacts to aquatic organisms from the detonation of subsurface seismic charges shall be further minimized by implementing the following measures:

- A qualified biological monitor shall accompany all waterway detonation crews. The biological monitor shall be aboard a separate vessel.

CALENDAR PAGE	000360
MINUTE PAGE	005852

- Prior to the detonation of each charge, the biological monitor shall visually inspect the immediate water surface areas ahead of the detonation boat for existing wildlife resources. The biological monitoring vessel shall be equipped with a standard "fish finder" for use in locating aquatic wildlife within a specific radius of the source point locations.
- If significant fish and/or wildlife resources (e.g., schools of fish, river otters) exist within the seismic source point area, the biological monitor shall require the crew to delay detonation until the fish and/or wildlife have migrated approximately 35 feet from the seismic source point. This distance shall be confirmed by the CDFG, U.S. Fish and Wildlife Service, and National Marine Fisheries Service prior to project implementation.
- If fish and/or wildlife resources exist within a specified radius of a seismic source point for an extended period of time (i.e., longer than 15 minutes), then the detonation crew shall move to the next seismic source point. The unfired seismic source point shall be detonated at another time when sensitive biological resources are not present.
- The biological monitor shall reassess surface waters prior to approval of detonation. Upon the approval of the biological monitor, the verbal command shall be given to ready the cap wire for shooting. The boat crew will ready the system and detonate the charge while the biological monitor moves to the next seismic source point.

**Mitigation Measure BR-2. Avoid Disturbance to Roosting Areas.** All seismic survey activities shall be completed no later than September 15, 1999, particularly, helicopter overflights, equipment hauling and field crews activities.

**Mitigation Measure BR-3. Avoid Seismic Surveys in Occupied California Black Rail Habitats and Establish a Buffer Around these areas Until June 30.** The CDFG consider majority of the tidal habitat in the proposed project area potential black rail habitat and areas within Dutch Slough near Bethel Island as known habitat. A biological monitor will accompany the survey crews during the stakeout phase to identify and document active black rail habitat areas to ensure that the project boundary is at least a buffer distance of 500 feet from these areas. No project activities will occur in these areas until after the breeding period of June 30. These areas will also be designated as no fly zones, and no helicopter activity will be allowed over these areas or within the 500-foot buffer until after June 30. However, boating will be allowed in waterways, and vehicles will be allowed on paved and graveled roads.

**Mitigation Measure BR-4. Conduct Survey Activities Only by Foot in Potential Black Rail Habitat.** No trucks, ATVs, SUVs, or other vehicles will be allowed in potential black rail habitat (tidal marsh areas) identified by the biological monitor during proposed mitigation measure BR-3. No seismic charges will be placed within potential black rail habitat. Only foot traffic will be allowed during the stakeout phase and data acquisition phase. These activities are planned to occur outside of the peak breeding season (January 15 to April 15). The biological monitor will accompany the survey

CALENDAR PAGE 000361

MINUTE PAGE 005853



crews during the stakeout phase to identify potential black rail habitat areas and during the data acquisition phase to ensure the conditions specified within this measure are implemented.

**Mitigation Measure BR-5. Conduct Preconstruction Surveys for Nesting Heron, Double-Crested Cormorant, Swainson's Hawk, Northern Harrier, White-Tailed Kite, Tricolored Blackbird, and Short-Eared Owl.** Preconstruction surveys will be conducted for nesting heron, double-crested cormorant, Swainson's hawk, northern harrier, white-tailed kite, tricolored blackbird, and short-eared owl in the project area when construction activities will occur before August 31. These surveys will occur during the preliminary surveying phase of the project. The project proponent shall retain a qualified biologist to survey suitable habitat for the presence of these nesting species along the receiver and source lines of the project area.

Surveys for nesting herons will be focused in areas where suitable shrubs or trees (e.g. eucalyptus groves) are present. Surveys for double-crested cormorants will be conducted where suitable nest trees are present. Surveys for the Swainson's hawk will be focused on the area of recent CDFG siting within Medford Island and where other potential nest trees exist. Surveys for short-eared owl, and northern harrier will be conducted in the suitable grassland and wetland habitats. Surveys for the white-tailed kite will be conducted in suitable nest trees within the project area. Surveys for the tricolored blackbird will be conducted in blackberry patches and suitable emergent wetland habitat.

Preconstruction surveys will focus on these specific species occurring in their respective habitat types in the project area. The surveys would include the biologist driving and/or walking with the survey crew in and near suitable habitat types in the project area and inspecting the habitats for nesting of special-status species. If a special-status species is found or suspected to be nesting within the project area, a buffer zone will be established to avoid impacts on the nest.

If no nesting herons, double-crested cormorant, Swainson's hawk, northern harrier, white-tailed kite, tricolored blackbird, or short-eared owl are found, construction activities may proceed and no further mitigation measures are required. If nesting sites are identified, Mitigation Measure BR-6 has been incorporated to reduce potential impacts to a less than significant level.

**Mitigation Measure BR-6. Establish a Buffer Area Around Nest Sites.** Where nest sites are identified or suspected to occur during preconstruction surveys, the qualified biologist will establish the following buffer zones around the nest sites and no seismic survey activities will occur within these specified buffer zones.

**Nesting Herons.** In order to avoid and minimize impacts on nesting herons, a 4,00-foot buffer will be established around active nesting herons where no drilling, detonations, or deployment of seismic equipment (e.g., RSR units, geophones, etc.) will occur. The buffer area can be removed before August 31 if

CALENDAR PAGE	000362
MINUTE PAGE	005854

a qualified biologist determines that juveniles from the heron nests are foraging independently and are capable of independent survival.

**Double-Crested Cormorant Breeding Colony.** A 450-foot buffer area will be designated on the ground around any double-crested cormorant colonies to avoid impacts on this species. No ground survey activities will occur within the 450-foot buffer. Additionally, project-related helicopters will not be allowed to fly within 1,000 feet of the identified colonies. No further mitigation measures are required once young have fledged or after August 1. recommendation

**Swainson's Hawk.** In order to avoid and minimize impacts on Swainson's hawks, a buffer zone will be established around active Swainson's hawks nests where no drilling or detonations will occur until young have fledged or the hawks are no longer attempting to nest. The exact distance of the buffer zone (i.e., 1/2-mile) will be determined through consultation between the CDFG and the biological monitors. Deployment of receiver and source line equipment will be allowed outside a specified distance from the nests at the discretion of the biological monitor in coordination with the CDFG, and if equipment is deployed without the use of motorized vehicles. No further mitigation measures are required once young have fledged or adults have stopped nesting attempts for the 1999 breeding season.

**Tricolored Blackbird, Northern Harrier, White-Tailed Kite, and Short-Eared Owl Nests:** In order to avoid and minimize impacts on these species, a 200-foot buffer will be established around active tricolored blackbird, northern harrier, white-tailed kite, and short eared owl nests. No drilling or detonations will occur within this buffer until young have fledged or the species are no longer attempting to nest. Deployment of seismic equipment will be allowed outside a 100-foot buffer from known or suspected nests. No further mitigation measures are required once young have fledged or after August 1.

**Mitigation Measure BR-7. Avoid Prolonged Concentrated Activities.** To avoid keeping special-status and locally designated birds from foraging areas for extended periods, the project proponent shall avoid continual, concentrated activity in any specific area for more than 5 consecutive days. If clean-up work or other activities require additional time in any specific area, no work will be permitted until after 5 consecutive non-work days, unless the area is given clearance by the biological monitor.

**Mitigation Measure BR-8. Avoid Impacts to San Joaquin Kit Fox Burrows.** Prior to beginning project activities in Veale Tract and Palm Tract, biological monitors shall conduct surveys for active burrows of the San Joaquin kit fox. In the event that active kit fox burrows are found, project activities shall be re-routed to avoid the burrows and a buffer zone will be established by the biological monitor around the area. The radius of the buffer area shall be determined after consultation with the CDFG and U.S. Fish and Wildlife Service.

CALENDAR PAGE 000363

MINUTE PAGE 005855

**Mitigation Measure BR-9. Prohibit All Project Activities Within Biologically Unique Habitats.** To avoid impacts on sensitive habitats and associated plant and wildlife species, a qualified biologist will assist the survey crew in identifying landing sites along the edges of slough channels, drainages, bays, and levees. The survey crews will use the identified landing sites to deploy seismic equipment from boats and vehicles during implementation of the proposed project.

The biologist will select specific landing sites to avoid impacts within biologically unique habitats. These areas include in-basin wetland habitats associated with blow-out lakes and ponds and wetland and riparian habitats associated with channels. No shotpoints shall be placed within identified biologically unique habitat areas, including all marsh habitat areas located within waterways of the project area. The biologists shall identify all wetland and riparian habitat areas located landward of the levees and establish a 200-foot buffer around them. No project activities shall occur within these identified buffer areas. The biologist shall accompany survey crews to ensure avoidance of these buffer areas. Additionally, no air boat (Vibra-Ram) activity shall be conducted in water levels less than 1 foot in depth at low tide adjacent to in-channel islands and/or identified wetland areas. Furthermore, no project activities shall be conducted on identified in-channel islands.

The biological monitor shall inspect the identified biologically unique habitat areas regularly to ensure compliance with this measure.

**Mitigation Measure BR-10. Avoid Removing Natural Vegetation.** To avoid impacts on sensitive habitats and rare plants, the project proponent shall ensure that no vegetation will be cut, cleared, or otherwise removed in any habitat types other than agricultural or herbaceous upland (ruderal) types. The biological monitor shall identify natural vegetation areas and assist project personnel with rerouting to avoid these areas.

**Mitigation Measure BR-11. Qualifications and Duties of Biological Monitors.** The project proponent shall hire at least one qualified botanist and wildlife biologist to provide clearance for sensitive areas and special-status species populations before any project activity commences. Biological monitors working on the project shall have general knowledge of natural resources of the Delta. They shall also be experienced in the identification of special-status and locally designated plant and animal species potentially occurring in the project area, as well as assessing the habitats of these species. The monitors shall be responsible for the following:

- Biological monitors shall determine compliance with all mitigation measures described above. Monitors shall report incidents of noncompliance directly to field crews, project supervisors, and responsible agencies.
- Biological monitors shall provide information daily to project supervisors on locations of important biological resources by communicating directly with the project supervisor and ground crews.

- Biological monitors shall conduct an employee orientation program for all project personnel. Orientation shall include the occurrence and distribution of listed species and other sensitive resources in the project area, measures being implemented to protect sensitive resources during project actions, and applicable definitions and prohibitions under the State and Federal Endangered Species Acts.

### **CULTURAL RESOURCES**

**Mitigation Measure CR-1. Halt Work Within 100 Feet of Any Find of Above-Ground or Buried Cultural Resources until the Find is Assessed by a Qualified Archeologist.** Texaco Exploration and Production, Inc. shall ensure that no seismic survey activities are conducted near known sites of cultural resources including prehistoric sites, agricultural structures, levees, canals and ditches that will result in adverse physical impacts to the site. If above-ground or buried cultural resources (such as chipped or ground stone, historic debris, building foundations, human bone, remnants of village structure, lithic scatters) are inadvertently discovered during seismic survey activities (including drilling, cable placement, and detonation) Texaco Exploration and Production, Inc. shall stop work in that area and within 100 feet of the find until a qualified archeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Appropriate treatment measures shall be implemented before ground-disturbing activities in the area are resumed.

### **RECREATION**

**Mitigation Measure R-1.** Texaco Exploration & Production, Inc. shall not conduct seismic survey activities in hunting areas on days reserved for waterfowl hunting (Wednesday, Saturday and Sunday mornings during hunting season).

### **GEOLOGIC PROBLEMS**

**Mitigation Measure GP-1.** When using the Vibra-Ram equipment, Texaco Exploration & Production, Inc. shall comply with the setback requirements from the toe of the levee on both the land and water side, as approved by the reclamation districts, based on the testing procedures for explosives and the Vibra-Ram, outlined in Kjeldsen, Sinnock & Neudeck, Inc.'s May 26, 1999 letter. Such setbacks shall not be less than 400 feet.

**Mitigation Measure GP-2.** Texaco Exploration & Production, Inc. shall hire an independent contractor to monitor ground vibration for all detonations within 800 feet of the toe of any District or adjacent levee to assure that minimum vibration levels do not exceed established District thresholds.

EXHIBIT D

SACRAMENTO CENTRAL DELTA / PHASE TWO NATURAL GAS EXPLORATION PROJECT  
MITIGATION MONITORING PROGRAM

Mitigation Measure	Implementor	Monitoring Criteria	Compliance Verification	Frequency
<b>WATER RESOURCES</b>				
<p><b>WR-1</b> Waste generated during construction shall be stored in designated waste collection areas and containers away from watercourses, and shall be disposed of regularly.</p>	<p>The Texaco Environmental Compliance Coordinator will be responsible for implementation of this measure.</p>	<p>The Texaco Environmental Compliance Coordinator will monitor implementation of this measure in conjunction with his regular duties.</p>	<p>The CSLC will verify compliance with Texaco based on monthly compliance reporting.</p>	
<p><b>WR-2</b> Vehicles and equipment shall be maintained properly to prevent leakage of hydrocarbons and other automotive fluids, and shall be examined for leaks on a daily basis. All maintenance shall occur in designated areas located away from watercourses. Designated areas shall include drain pans, drop cloths, and absorbent materials to clean up any discharge of fluids.</p>	<p>The Texaco Environmental Compliance Coordinator will be responsible for implementation of this measure.</p>	<p>The Texaco Environmental Compliance Coordinator will monitor implementation of this measure in conjunction with his regular duties.</p>	<p>The CSLC will verify compliance with Texaco based on monthly compliance reporting.</p>	
<p><b>WR-3</b> All fueling of vehicles shall occur in designated areas. Designated fueling areas shall include drain pans, drop cloths, and absorbent materials to clean up any spills.</p>	<p>The Texaco Environmental Compliance Coordinator will be responsible for implementation of this measure.</p>	<p>The Texaco Environmental Compliance Coordinator will monitor implementation of this measure in conjunction with his regular duties.</p>	<p>The CSLC will verify compliance with Texaco based on monthly compliance reporting.</p>	
<p><b>WR-4</b> Any accidental spill of hydrocarbons or other vehicle fluids that may result during the project shall be cleaned up immediately, and kept out of watercourses to the greatest extent possible. Absorbent materials shall be maintained by the project crews at all times for this purpose. The responsible agencies shall be notified immediately in the event of an accidental spill to ensure proper clean up and disposal of waste.</p>	<p>The Texaco Environmental Compliance Coordinator will be responsible for implementation of this measure.</p>	<p>The Texaco Environmental Compliance Coordinator will monitor implementation of this measure in conjunction with his regular duties.</p>	<p>The CSLC will verify compliance with Texaco based on monthly compliance reporting.</p>	

WHOLE PAGE 005858  
 PARTIAL PAGE 000368

Mitigation Measure	Implementation	Monitoring Criteria	Compliance and Verification	Effectiveness
<b>WATER RESOURCES (Cont.)</b>				
<b>WR-5</b> All conditions of permits issued by the Regional Board, CDFG, and ACOE that relate to minimizing water quality impacts shall be met by the project proponent.	The Texaco Environmental Compliance Coordinator will ensure compliance with this mitigation measure.	The Texaco Environmental Compliance Coordinator will monitor implementation of this measure in conjunction with his regular duties.	The CSLC will verify compliance with Texaco based on monthly compliance reporting.	
<b>BIOLOGICAL RESOURCES</b>				
<b>BR-1.</b> In areas of known spawning habitat for identified sensitive aquatic species, the proposed project shall be conducted from August through September, as to avoid the specific spawning season. In addition, Texaco shall implement the following procedures to reduce potential impacts to aquatic organisms: <ul style="list-style-type: none"> <li>• Ongoing monitoring of fish and wildlife resources shall be conducted throughout all water based operations.</li> <li>• A qualified biological monitor shall accompany all waterway detonation crews. The biological monitor shall be aboard a separate vessel.</li> <li>• The biological monitor shall visually inspect the immediate water surface areas for existing wildlife resources. The biological monitoring vessel shall be equipped with a standard "fish finder" for use in locating aquatic wildlife within a specific radius of the source point locations.</li> <li>• The biological monitor shall clear areas prior to approval of seismic charge detonation within waterways. If significant fish and/or wildlife resources exist within a source point area, the biological monitor shall require the crew to delay detonation until the fish and/or wildlife have migrated a safe distance from the seismic source point. Biological monitors shall have the authority to cease seismic charge detonation activity if sensitive resources enter the survey area.</li> </ul>	This mitigation measure shall be implemented by the Texaco appointed Biological Monitors at the initiation of water-based seismic survey activities.	The Texaco Biological Monitors will conduct site clearance activities within all waterways prior to the use of explosives.	The CSLC will verify compliance based on review of monthly compliance reports prepared by the biological monitors. Additionally, compliance reports will be prepared and submitted to the CDFG and the ACOE in association with the USFWS and NMFS.	

MINUTE PAGE  
 000367  
 005859

Mitigation Measure	Implementation	Monitoring Criteria	Compliance Verification	Effectiveness
<b>BIOLOGICAL RESOURCES (Cont.)</b>				
<b>BR-2. Avoid Disturbance to Roosting Areas.</b> All seismic survey activities shall be completed no later than September 15, 1999, particularly, helicopter overflights, equipment hauling and field crew activities.	Texaco appointed Biological Monitors will be responsible for implementation of this mitigation measure.	The Texaco Biological Monitors will verify roosting areas by physically staking them off in the field. Additionally, the roosting areas shall be depicted on project maps for project personnel utilization throughout the project.	The CSLC and CDFG will verify compliance based on review of monthly compliance reports prepared by the biological monitors.	
<b>BR-3.</b> A biological monitor will accompany the survey crews during the stakeout phase to identify and document active black rail habitat areas to ensure that the project boundary is at least a buffer distance of 500 feet from these areas. No project activities will occur in these areas until after the black rail breeding period of June 30. These areas will also be designated as no fly zones, and no helicopter activity will be allowed over these areas or within the 500-foot buffer until after June 30.	Texaco appointed Biological Monitors will be responsible for implementation of this mitigation measure.	The Texaco Biological Monitors will verify black rail habitat areas during the stakeout phase and the areas will be depicted on project maps for project personnel. The project will be scheduled to avoid these areas until June 30	The CSLC and CDFG will verify compliance based on review of monthly compliance reports prepared by the biological monitors.	
<b>BR-4.</b> No trucks, ATVs, SUVs, or other vehicles will be allowed in potential black rail habitat (tidal marsh areas) identified by the biological monitor during proposed mitigation measure BR-3. Only foot traffic will be allowed during the stakeout phase and data acquisition phase of the project.	Texaco appointed Biological Monitors will be responsible for implementation of this mitigation measure.	The Texaco Biological Monitors will verify black rail habitat areas during the stakeout phase and the areas will be depicted on project maps for project personnel	The CSLC and CDFG will verify compliance based on review of monthly compliance reports prepared by the biological monitors.	
<b>BR-5.</b> Preconstruction surveys will be conducted for nesting heron, double-crested cormorant, Swainson's hawk, northern harrier, white-tailed kite, tricolored blackbird, and short-eared owl in the project area when construction activities will occur before August 31.	Texaco appointed Biological Monitors will be responsible for implementation of this mitigation measure.	The Texaco Biological Monitors will verify habitat areas during the stakeout phase and the areas will be depicted on project maps for project personnel	The CSLC and CDFG will verify compliance based on review of monthly compliance reports prepared by the biological monitors.	

CALENDAR PAGE 00368  
 MINUTE PAGE 005850

Mitigation Measure	Implementation	Monitoring Criteria	Compliance and Verification	Effectiveness
<b>BIOLOGICAL RESOURCES (Cont.)</b>				
<b>BR-6.</b> Where nest sites are identified or suspected to occur during preconstruction surveys of BR-5, the qualified biologist will establish buffer zones around the nest sites of the individual species and no seismic survey activities will occur within these specified buffer zones.	Texaco appointed Biological Monitors will be responsible for implementation of this mitigation measure.	The Texaco Biological Monitors will verify nest areas by physically staking them off in the field. Additionally, the nest areas shall be depicted on project maps for project personnel utilization throughout the project.	The CSLC and CDFG will verify compliance based on review of monthly compliance reports prepared by the biological monitors	
<b>BR-7.</b> To avoid keeping special-status and locally designated birds from foraging areas for extended periods, the Texaco Exploration and Production, Inc. shall avoid continual, concentrated activity in any specific area for more than 5 consecutive days.	Texaco appointed Biological Monitors will be responsible for implementation of this mitigation measure.	The Texaco Biological Monitors will verify foraging areas by physically staking them off in the field. Additionally, foraging areas shall be depicted on project maps for project personnel utilization throughout the project.	The CSLC and CDFG will verify compliance based on review of monthly compliance reports prepared by the biological monitors	
<b>BR-8.</b> Prior to beginning project activities in grassland areas, biological monitors shall conduct surveys for active burrows of the San Joaquin kit fox. In the event that active kit fox burrows are found, proposed activities shall be re-routed to avoid the burrows and a buffer zone will be established after consultation with the CDFG and USFWS.	Texaco appointed Biological Monitors will be responsible for implementation of this mitigation measure.	The Texaco Biological Monitors will verify active den areas by physically staking them off in the field. Buffer zones will be depicted on project maps after consultation with DFG and USFWS.	The CSLC, CDFG and USFWS will verify compliance based on review of monthly compliance reports prepared by the biological monitors	

MINUTE PAGE 005861  
CALENDAR PAGE 000389



Mitigation Measure	Implementation	Monitoring Criteria	Compliance with Verification	Finalized
<b>BIOLOGICAL RESOURCES (Cont.)</b>				
<p><b>BR-9. Prohibit All Project Activities Within Biologically Unique Habitats.</b> To avoid impacts on sensitive habitats and associated plant and wildlife species, a qualified biologist will assist the survey crew in identifying landing sites along the edges of slough channels, drainages, bays, and levees. The survey crews will use the identified landing sites to deploy seismic equipment from boats and vehicles during implementation of the proposed project.</p> <p>The biologist will select specific landing sites to avoid impacts within biologically unique habitats. These areas include in-basin wetland habitats associated with blow-out lakes and ponds, wetland and riparian habitats associated with channels. No shotpoints shall be placed within identified biologically unique habitat areas, including all marsh habitat areas located within waterways of the project area. The biologists shall identify all wetland and riparian habitat areas located landward of the levees and establish a 200-foot buffer around them. No project activities shall occur within these identified buffer areas. The biologist shall accompany survey crews to ensure avoidance of these buffer areas. Additionally, no air boat (Vibra-Ram) activity shall be conducted in water levels less than 1 foot in depth at low tide adjacent to in-channel islands and/or identified wetland areas. Furthermore, no project activities shall be conducted on identified in-channel islands.</p> <p>The biological monitor shall inspect the identified biologically unique habitat areas regularly to ensure compliance with this measure.</p>	<p>Texaco appointed Biological Monitors will be responsible for implementation of this mitigation measure.</p>	<p>The Texaco Biological Monitors will verify landing sites by physically staking them off in the field. The 200-foot buffer will also be established around all in-basin wetland and riparian areas. Additionally, the landing sites for all vessels and vehicles and buffer areas shall be depicted on project maps for project personnel utilization throughout the project.</p>	<p>The CSLC and CDFG will verify compliance based on review of monthly compliance reports prepared by the biological monitors</p>	

CALENDAR PAGE 000370  
 MINUTE PAGE 015862

Mitigation Measure	Implementation	Monitoring Criteria	Compliance and Verification	Effectiveness
<p>BR-10. To avoid impacts on sensitive habitats and rare plants, Texaco Exploration and Production, Inc. shall ensure that no vegetation will be cut, cleared, or otherwise removed in any habitat types other than agricultural or herbaceous upland (ruderal) types. The biological monitor shall identify natural vegetation areas and assist project personnel with rerouting to avoid these areas.</p>	<p>Texaco appointed Biological Monitors will be responsible for implementation of this mitigation measure.</p>	<p>Texaco Biological Monitors will monitor the implementation of this Mitigation Measure in conjunction with their regular duties.</p>	<p>The CSLC and CDFG will verify compliance based on review of monthly compliance reports prepared by the biological monitors</p>	
<p>BR-11. Texaco Exploration and Production, Inc. shall hire at least one qualified botanist and wildlife biologist to provide clearance for sensitive areas and special-status species populations before any project activity commences. Biological monitors working on the project shall have general knowledge of natural resources of the Delta. They shall also be experienced in the identification of special-status and locally designated plant and animal species potentially occurring in the project area, as well as assessing the habitats of these species.</p>	<p>The CSLC will incorporate this mitigation, accepted by Texaco, as a condition of project approval.</p>	<p>Texaco shall be responsible for implementation of this measure. Texaco will maintain a listing of qualified individuals to conduct biological monitoring activities at the project site. Resumes of all selected individuals will be submitted to SLC.</p>	<p>The CSLC, CDFG and ACOE in association with USFWS and NMFS will verify compliance of this measure with Texaco.</p>	

MINUTE PAGE 005863  
CALENDAR PAGE 000374

Mitigation Measure	Implementation	Monitoring	Compliance and Verification	Enforcement
<b>CULTURAL RESOURCES</b>				
<p>CR-1. Texaco Exploration and Production, Inc. shall ensure that no seismic survey activities are conducted near known sites of cultural resources including structures, levees, canals and ditches that will result in adverse physical impacts to the site. If above-ground or buried cultural resources are inadvertently discovered during seismic survey activities (including drilling, cable placement, and detonation) Texaco Exploration and Production, Inc. shall stop work in that area and within 100 feet of the find until a qualified archeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the State Historic Preservation Officer (SHPO). Appropriate treatment measures shall be implemented before ground-disturbing activities in the area are resumed.</p>	<p>The Texaco appointed Archaeological Monitor will be responsible for implementation of this measure.</p>	<p>The Texaco Archaeological Monitor will provide onsite observation for above-ground or buried archaeological resources within areas identified as containing sensitive cultural resources.</p> <p>The Texaco Archaeological Monitor will verify cultural resource areas by physically staking them off in the field. Additionally, the cultural resource areas shall be depicted on project maps for project personnel utilization throughout the project.</p>	<p>The CSLC will verify compliance of this measure with Texaco.</p>	
<b>RECREATION</b>				
<p>R-1. Texaco Exploration &amp; Production, Inc. shall not conduct seismic survey activities in hunting areas on days reserved for waterfowl hunting (Wednesday, Saturday and Sunday mornings during hunting season).</p>	<p>The Texaco Environmental Compliance Coordinator will be responsible for implementation of this measure.</p>	<p>The seismic survey will be scheduled by the Texaco Environmental Compliance Coordinator to avoid impacts to designated hunting areas within specific designated days of hunting season.</p>	<p>The CSLC will verify compliance of this measure with Texaco.</p>	

MINUTE PAGE  
CALENDAR PAGE  
000372  
005864

Mitigation Measure	Implementation	Monitoring Criteria	Compliance and Verification	Responsible
<b>GEOLOGIC PROBLEMS</b>				
GP-1. When using the Vibra-Ram equipment, Texaco Exploration & Production, Inc. shall comply with the setback requirements from the toe of the levee on both the land and water side, as approved by the reclamation districts, based on the testing procedures for explosives and the Vibra-Ram, outlined in Kjeldsen, Sinnock & Neudeck, Inc.'s May 26, 1999 letter. Such setbacks shall not be less than 400 feet.	The CSLC will incorporate this mitigation, accepted by Texaco, as a condition of project approval.	Texaco shall be responsible for implementation of this measure.	The CSLC in conjunction with the Levee Districts will verify compliance of this measure with Texaco.	
GP-2. Texaco Exploration & Production, Inc. shall hire an independent contractor to monitor ground vibration for all detonations within 800 feet of the toe of any District or adjacent levee to assure that minimum ground vibration levels are achieved throughout the survey.	The CSLC will incorporate this mitigation, accepted by Texaco, as a condition of project approval.	Texaco shall be responsible for implementation of this measure. Resumes of all selected individuals will be submitted to SLC.	The CSLC in conjunction with the Levee Districts will verify compliance of this measure with Texaco.	

MINUTE PAGE  
CALENDAR PAGE  
005865  
000373