



Mariposa Energy, LLC

333 S. Grand Ave., Suite 1570, Los Angeles, CA 90071
Tel: (213) 473-0080 Fax: (213) 620-1170

May 13, 2011

Mr. Craig Hoffman, CPM
(09-AFC-3C)
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

**SUBJECT: Mariposa Energy Project (09-AFC-3C)
BIO-5, CUL-5, PAL-4 Worker Environmental Awareness Program (WEAP)**

Dear Mr. Hoffman:

Please find attached three copies of the final Worker Environmental Awareness Program (WEAP) materials for Staff review, in accordance with Condition of Certification BIO-5, CUL-5, and PAL-4. One copy of the WEAP DVD training video has also been included as part of this submittal.

Mariposa Energy, LLC (Mariposa Energy) acknowledges that MEP has not yet been certified by the California Energy Commission (CEC). Submittal of this compliance information is at Mariposa Energy's risk and in no way implies or predisposes project certification by the CEC.

If you have any questions regarding this submittal, please do not hesitate to contact me at (213) 346-2134 or Keith McGregor at (916) 286-0221.

Sincerely,

Chris Curry
Mariposa Energy, LLC
Senior Manager - Development

Attachment: Three hard copies of the final WEAP Materials for MEP (09-AFC-3C)
One WEAP DVD training video

cc: Bo Buchynsky, Mariposa Energy, LLC
Keith McGregor, CH2M HILL

Biological Resources

MARIPOSA ENERGY, LLC'S COMMITMENT

Mariposa Energy, LLC is committed to protecting environmental resources. The Mariposa Energy Project (MEP) was designed to protect and minimize impacts to the surrounding biological resources. This was done in consultation with the California Energy Commission, the U.S. Fish and Wildlife Service, and the Department of Fish and Game.

Project construction will be conducted in a way that protects the biological, cultural and paleontological resources in the project area. Violation of these protection measures could result in costly project delays or shutdowns, as well as serious consequences for the responsible individuals. The Worker Environmental Awareness Program (WEAP) was designed to provide an overview of the sensitive biological, cultural and paleontological resources that may affect the MEP project. Knowledge and practice of these measures will be the responsibility of all on-site personnel.

Reminder: The Biological, Cultural and Paleontological monitors are there to help you. Do not hesitate to contact them with question or concerns. With your cooperation, the MEP is sure to be a success.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Minimizing construction impacts:

- Open trenches must be covered at the close of each day, or provided with one or more escape ramps so that animals such as kit foxes, frogs, snakes, and squirrels won't get trapped.
- Minimize the need for restoration by minimizing disturbance.
- Avoid the possible disturbance of nesting birds by staying 500 feet away. Let the Biological Monitor clear the area before you begin any and all work.
- Project construction boundaries are positioned to protect vernal pools and sensitive biological resources, and must not be crossed at any time.

Minimizing operation impacts:

- Stormwater runoff must not contain hazardous waste, debris, or sediment that could affect biological resources.

Mitigation Measures as Conditions of Certification:

- Biological Monitors must be on site or on call during construction.
- Construction exclusion zones must be clearly marked to protect sensitive habitats. Cyclone, silt, and orange fencing with Keep Out signs mark your access boundaries—be aware of your limits.
- Preconstruction surveys must be conducted prior to all ground disturbances.
- During construction, all pipes, culverts, or similar structures with a diameter of 4 inches or more that are stored at the construction site overnight must be thoroughly inspected for wildlife before using or moving them.

SENSITIVE RESOURCE AREA

KEEP OUT

Mariposa Energy, LLC
For further information please contact
the Designated Biologist, Todd Elwood at (408) 839-2402
or the Compliance Manager, Chris Cary at (213) 346-2134

KILLDEER



photograph courtesy of Chris Green

DO NOT HARM OR HANDLE BIRDS, NESTS, OR EGGS

Mariposa Energy, LLC
Mariposa Energy Project

Please report immediately all nests or injured birds to the Designated Biologist at (408) 839-2402

REPORT INJURED, TRAPPED, OR DEAD WILDLIFE

Figure G-1. Wildlife Observation Form

WILDLIFE OBSERVATION FORM
To Record Animals Found in Mariposa Energy Project Areas

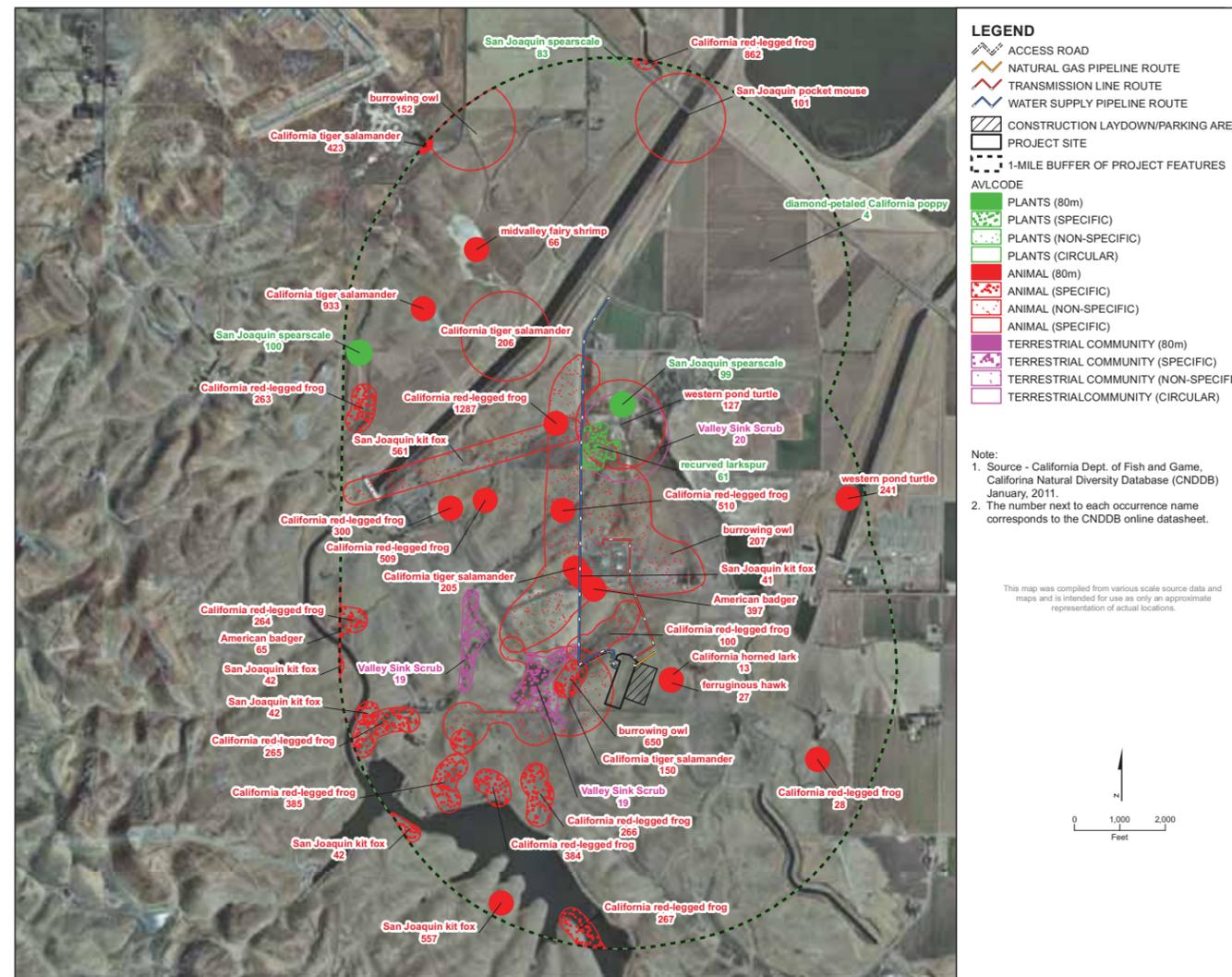
To be filled out by personnel who find, observe, trap, handle, or observe injured wildlife, or other biological resources during any construction activity.

Name of employee: _____
Date: _____
Location of observation: _____
Wildlife species: _____
Condition of wildlife: Alive Dead
Possible cause of injury or death: _____
Where is the animal currently? _____
Is the resource in danger of project (or other) impacts? _____
Comments: _____

Please contact the Designated Biologist for questions and to return any wildlife. Handle any wildlife in the project area that could be regulated. The Designated Biologist will advise personnel on mitigation required by California Department of Fish and Game (CDFG) and United States Fish and Wildlife Service (USFWS) to protect fish, wildlife and vegetation from construction impacts.

DESIGNATED BIOLOGIST
Todd Elwood (408) 839-2402
BIOLOGICAL FIELD MONITORS
TRD

CH2MHILL - 14485 Navigation Park Drive, Suite 600, San Ramon, CA 94583-1603 - (916) 424-1200



KIT FOX

- Federal Endangered and California Threatened Species



AMERICAN BADGER

- California Species of Special Concern



SWAINSON'S HAWK

- California Threatened Species



VERNAL POOL FAIRY SHRIMP

- Federal Threatened Species

LONGHORN FAIRY SHRIMP

- Federal Endangered Species



CALIFORNIA TIGER SALAMANDER

- Federal and California Threatened Species



WESTERN POND TURTLE

- CDFG Species of Special Concern



BURROWING OWL

- California Species of Special Concern



RED-LEGGED FROG

- Federal Threatened and California Species of Special Concern



Protect Bird Nests

Most birds are busy building nests, laying eggs, and raising chicks in the early spring through mid-summer.

Not all nests are in trees. Many birds build their nests in human structures and some even make nests on the ground or in burrows.

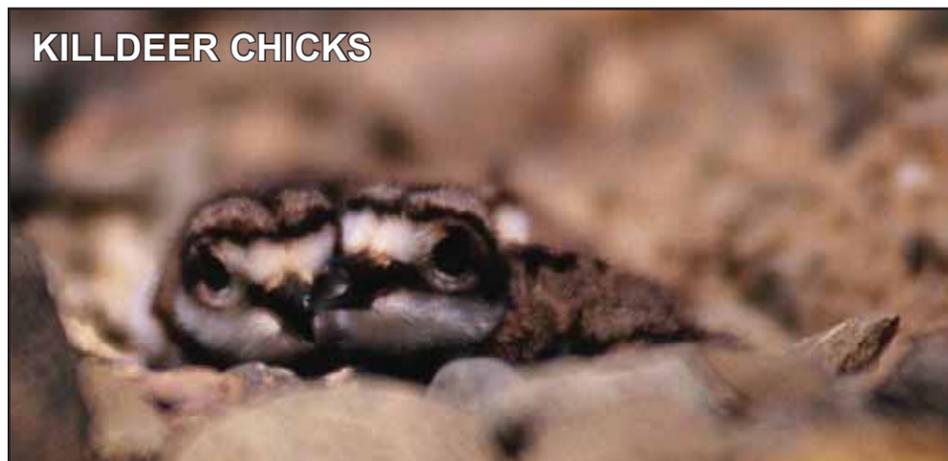
Construction sites can actually provide unlikely nesting opportunities for a variety of birds.



KILLDEER EGGS

A killdeer nest is little more than a scrape on the ground in a large barren area, making a cleared construction site a perfect nesting opportunity.

Killdeer eggs can be difficult to see but if you notice lots of killdeer activity in an area, a nest is probably close by.



KILLDEER CHICKS

photograph courtesy of Chris Green

Like chickens and ducks, after hatching, killdeer chicks are on the move. Like the eggs, the chicks can be difficult to see but usually stay close to their parents. When threatened, the chicks will freeze making them even more difficult to see and avoid.



ADULT KILLDEER

photograph courtesy of Chris Green

Other birds, like mourning doves and house finches may build their nests directly in or on site structures or equipment.



MOURNING DOVE NEST

Except for a limited few, all birds are protected by federal and state laws. Destruction of nests or eggs is a violation of the Federal Migratory Bird Treaty Act and California Department of Fish and Game codes. An offense is considered criminal and can include substantial fines and possible jail time.



BURROWING OWLS

All nests must be avoided and reported to your superintendent. Your cooperation is appreciated.

Designated Biologist/Biological Monitor

Todd Ellwood Cell (408) 839-2402

Biological Field Monitors

John Hale Cell (530) 864-5049

Dan Williams Office (916) 286-0229

Cell (916) 943-8247

Environmental Monitors



Designated Biologist/Biological Monitor

Todd Ellwood Cell (408) 839-2402



Cultural Resources Monitor

Clint Helton Cell (949) 500-2496
Office (714) 435-6140



Paleontological Resources Monitor

Dr. Geof Spaulding Cell (702) 524-5860
Office (702) 953-1233



Paleontological Resources Monitor

James Verhoff Cell (267) 253-9236
Office (714) 435-6039



Biological Field Monitor

John Hale Cell (530) 864-5049



Alternate Cultural Resources Monitor

Aaron Fergusson Cell (801) 541-0366
Office (435) 843-1378



Paleontological Resources Monitor

Jaspal Saini (916) 225-3100

DO NOT HARM OR HANDLE BIRDS, NESTS, OR EGGS



Mariposa Energy, LLC

Mariposa Energy Project

Please report immediately all nests or injured birds to
the Designated Biologist at (408) 839-2402

**SENSITIVE
RESOURCE AREA**

KEEP OUT



Mariposa Energy, LLC

For further information please contact
the Designated Biologist, Todd Ellwood at (408) 839-2402
or the Compliance Manager, Chris Curry at (213) 346-2134

Figure G-1. Wildlife Observation Form

WILDLIFE OBSERVATION FORM To Record Animals Found In Mariposa Energy Project Areas To be filled out by personell who find active nest sites and burrows, dens, and dead or injured wildlife, or other biological resources during daily construction activities.	
Name of employee:	
Date:	
Location of observation:	
Wildlife species:	
Condition of wildlife: <input type="checkbox"/> Alive <input type="checkbox"/> Dead	
Possible cause of injury or death:	
Where is the animal currently?	
Is the resource in danger of project (or other) impacts?	
Comments:	
Please contact the Designated Biologist for questions and to report any wildlife, nest, or den in the project area that could be disturbed. The Designated Biologist will advise personnel on measures required by California Department of Fish and Game (CDFG) and United States Fish and Wildlife Service (USFWS) to protect fish, wildlife and vegetation from construction impacts.	
<u>DESIGNATED BIOLOGIST</u> Todd Ellwood: (408) 839-2402	
<u>BIOLOGICAL FIELD MONITORS</u> TBD	



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Mariposa Energy Project (MEP)

Worker Environmental Awareness Program
Handbook for Biological, Cultural, &
Paleontological Resources



CH2MHILL®

2485 Natomas Park Drive
Sacramento, California 95833

Table of Contents

Mariposa Energy, LLC Commitment	1
Environmental Laws, Regulations, and Penalties.....	2
Biological Resources.....	3
<i>Designated Biologist and Biological Monitor</i>	3
<i>Environmental Impacts and Mitigation Measures</i>	5
<i>Wetlands and other Waterbodies</i>	6
<i>Nesting and Migratory Birds</i>	6
<i>Amphibians and Reptiles</i>	9
<i>Special-status Branchiopods</i>	11
<i>Mammals</i>	12
<i>Your Responsibility</i>	14
<i>Wildlife Observation Form</i>	15
Cultural Resources	16
<i>Examples of Cultural Resources</i>	17
<i>Your Responsibility</i>	18
Paleontological Resources	20
<i>Your Responsibility</i>	23
Stormwater Management	24
<i>Best Management Practices</i>	25
<i>Your Responsibility</i>	26
Contact Personnel	28

Mariposa Energy, LLC Commitment

Mariposa Energy, LLC is committed to protecting environmental resources during construction and operation of the Mariposa Energy Project (MEP), and the project design has been modified to ensure their protection. Mariposa Energy, LLC and the California Energy Commission (CEC) have developed protection measures to minimize project impacts. Knowledge and practice of these measures is the responsibility of all onsite personnel and violation of these measures could result in costly project delays or shutdowns, and also serious consequences for those who have done so.

This handbook provides an overview of the sensitive biological, cultural, and paleontological resources that construction of the MEP may affect. It also includes a description of the laws, protection measures, responsibilities, and penalties associated with those resources and this project. This book also provides information on best management practices for stormwater.

This handbook is part of the Worker Environmental Awareness Program (WEAP) for the MEP. It is your guide to understanding your responsibilities, taking the proper precautions on the job, and contacting the appropriate persons when you have questions. There will be Biological, Cultural, and Paleontological monitors on the construction site to help you, so always ask before you act. With your cooperation, the MEP construction project will run smoothly and will be successful.



Environmental Laws, Regulations, and Penalties

Many of the resources found in the project area are protected by state and federal laws.

Federal Endangered Species Act: Provides protection for federal-listed threatened and endangered plant and animal species. It also prohibits the destruction of habitat critical to their recovery.

California Endangered Species Act: Similar to the federal act, it prohibits the take of state-listed endangered and threatened wildlife.

Migratory Bird Treaty Act: Prohibits the take of migratory birds. "Take" is defined as to pursue, hunt, take, kill, capture, or harass. This includes eggs, nests, and feathers of any bird, which are fully protected.

California Fish and Game Codes: Prohibits take of protected plants and animals in California and protects areas designated as significant habitat.

The Clean Water Act: Oversees protection of jurisdictional wetlands and waterways.

The following agencies have regulatory authority in the area and will also monitor construction activities. They could be onsite at any time:

- County officials
- The California Energy Commission
- California Department of Fish and Game
- Central Valley Regional Water Quality Control Board
- U.S. Fish and Wildlife Service
- U.S. Army Corps of Engineers



REMEMBER

Stay out of exclusion zones. They protect sensitive habitats.

Violation of state and/or federal environmental laws can result in penalties, including fines as high as \$100,000 and/or up to one year in jail.

Violations can involve corporate and individual penalties.

Violations can result in stop work orders and construction delays.

Biological Resources

The MEP project site and vicinity include habitat for protected plants and wildlife. These habitats include agricultural land, wetlands, drainages, grasslands, and trees. These habitats are home to endangered or threatened birds, reptiles, amphibians, and mammals. Remember that all forms of wildlife are protected by law on this project; it is your responsibility as an employee of the MEP project to ensure that all areas that have not been previously disturbed must be surveyed by the Designated Biologist and Biological Monitor prior to disturbance.

Designated Biologist and Biological Monitor

The MEP Designated Biologist and Biological Monitor are responsible for implementing the project's Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), ensure that all permit requirements are followed, and provide direct assistance in avoiding impacts on natural resources. **The Designated Biologist has the authority to stop work if activities do not comply with protection measures outlined in the project's BRMIMP.**

Duties of the Designated Biologist:

- Advise Site Superintendent or Construction Manager on the implementation of the CEC's biological resources Conditions of Certification.
- Prepare and supervise the implementation of this WEAP.
- Supervise or conduct monitoring and other biological resource compliance efforts, including implementation of protection measures.
- Consult with natural resource agencies on potential biological issues and remedial actions.
- Advise project construction workers if there are changes in the environmental protection plans.
- Notify MEP staff and the CEC Compliance Project Manager of non-compliance with any condition and the corrective actions taken, and advise the construction and operations manager when to stop and resume construction in sensitive areas.

-
- Maintain written records for inclusion in monthly compliance reports.
 - Submit monthly and annual compliance reports, if necessary, to the CEC.
 - Supervise and support the efforts of the Biological Monitor.
 - Coordinate with wildlife agencies for compliance with protection measures.

The Biological Monitor will be onsite during earthwork activities and will clear areas before any and all surface disturbance begins. **The Biological Monitor has the authority to stop work if any violation of mitigation measures occurs in the project area. Mitigation measures for the project are described in the BRMIMP, available for review from the MEP Environmental Compliance Manager.**

Duties of the Biological Monitor:

- Supervise construction in sensitive habitat areas to monitor compliance with mitigation measures.
- Advise MEP staff on how best to avoid adverse impacts on biological resources.
- Assist the Site Superintendent in preparing construction zone limits in sensitive habitats—including flagging and signage.
- Immediately notify the Designated Biologist, MEP staff, and the MEP Environmental Compliance Manager of non-compliance and the corrective actions taken, and advise the construction and operations engineer when to resume construction.
- Notify onsite personnel if there are any changes in the plan.

REMEMBER

The Designated Biologist and Biological Monitor have the authority to stop work if construction activities are non-compliant.

Environmental Impacts and Mitigation Measures

Minimizing Construction Impacts:

- Open trenches must have escape ramps so animals such as frogs, salamanders, snakes, and foxes won't get trapped.
- Minimize the need for restoration by minimizing disturbance.
- Avoid disturbing nesting birds by staying 500 feet away. Have the Biological Monitor clear the area before you begin any and all work.
- Project construction boundaries are positioned to protect wetlands and sensitive biological resources, and must not be crossed at any time.

Mitigation Measures as Conditions of Certification:

- Biological Monitors must be onsite or on call during construction.
- Construction exclusion zones must be clearly marked to protect sensitive habitats. Cyclone, silt, and/or orange fencing with Keep Out signs mark your access boundaries—be aware of your limits.
- Pre-construction surveys must be conducted by the Designated Biologist or Biological Monitor prior to all ground disturbances.
- Erosion control and revegetation will be implemented in all construction areas.
- Impacts on biological resources will be monitored and reported to the appropriate agencies.
- During construction, all pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at the construction site overnight must be thoroughly inspected for wildlife before using or moving the equipment or materials.

Wetlands and other Waterbodies

The MEP site and vicinity supports a variety of wetlands and other water features (such as drainages and ponds) that were determined to be jurisdictional by the U.S. Army Corps of Engineers, California Department of Fish and Game, and State Water Resources Control Board. These aquatic habitats support a diversity of plants and wildlife, and are known to be occupied by California red-legged frog, California tiger salamander, and vernal pool fairy shrimp, three protected species. The resource agencies require avoidance and minimization measures when working near or within aquatic habitats for the protection of plants and animals, as well as for water quality. Please notify the Designated Biologist or Biological Monitor before initiating work in wetlands or drainages.

Nesting and Migratory Birds

The MEP project site and vicinity supports various nesting opportunities for native **raptors** such as **hawks** and **owls**, **waterfowl**, and **songbirds**. The birds, nests, eggs, and young are all protected under California Fish and Game laws and by the Federal Migratory Bird Treaty Act (MBTA).

Work areas will be surveyed for nesting birds prior to and during construction. If an active nest is found, the immediate area will be temporarily off limits. **Be sure to get clearance from the Designated Biologist or a Biological Monitor before initiating work in previously undisturbed areas, including gravel pads and equipment yards.**

The **Swainson's hawk** is an example of a protected raptor that might nest or forage near or on the project site. Typical adult Swainson's hawks have bright white wing linings contrasting with dark leading wing feathers, a narrow brown chestband between a white throat and white belly, and a gray tail above that is often white and streaked at the base. This bird is listed as Threatened under the California Endangered Species Act. This species is a long-distance migrant, spending winters as far south as South America and returning to California in early spring. In the spring and summer, Swainson's hawks are found throughout the agricultural areas of the Central Valley, including Alameda County. They often nest in trees adjacent to crop fields (such as alfalfa, hay, and row crops) and feed on rodents and insects.



Swainson's Hawk

Swainson's hawk, white-tailed kite, red-tailed hawk, American kestrel, loggerhead shrike and northern harrier have been identified in the project vicinity and may nest or forage on or near the site. If you see a nest or injured hawk, report it immediately to the Designated Biologist or Biological Monitor. If a Swainson's hawk nest is identified within 0.5 mile of the site, construction may not occur within the area between the construction corridor and the nest tree.

If another species of hawk nests on or near the project site, a setback will be established from the nest tree (an example is a 250 foot buffer). In the event a raptor nest is identified within the project boundaries, orange protective fencing and "KEEP OUT SENSITIVE RESOURCE" signage will be placed around the construction exclusion zone. This protection measure will be used to protect the nests of hawks and other birds.

The **while-tailed kite** is a white hawk with black shoulder patches. It hovers while foraging for rodents and other prey. The **northern harrier** is a brownish/gray hawk with brown and gray spots on its light underbelly. The **loggerhead shrike** is a gray and black passerine with a white belly. All three of these raptors are California species of concern and the white-tailed kite is a Fully Protected in California—no take is allowed.

Waterfowl and **migratory birds** such as geese, ducks, herons, shorebirds, and cranes use the Pacific Flyway as a major winter migration route and may be observed utilizing the project site or surrounding areas. If dead or injured animals are found, contact the Designated Biologist, Biological Monitor or the Environmental Compliance Manager so that the injured or dead animal can be correctly cared for.

The **western burrowing owl**, a California species of special concern, inhabits dry open grasslands and typically nests in small burrows that have been constructed and abandoned by burrowing mammals, such as ground squirrels or badgers. Burrowing owls are year-long residents; their breeding season is late February through August. Juvenile and adult burrowing owls have been killed by destruction, plugging, and flooding of occupied burrows; collisions with motor vehicles and construction equipment; predation by native and domestic animals; exposure to certain insecticides and rodenticides; and shooting. California ground squirrel burrows are abundant at the MEP site and surrounding area. Burrowing owls currently use the project area burrows as cover or nest sites. No construction will be allowed within 250 feet of an active owl burrow during the nesting season (February 1 – August 31). This avoidance buffer can be shortened to 160 feet from an active burrow during the non-nesting season (September 1 – January 31).

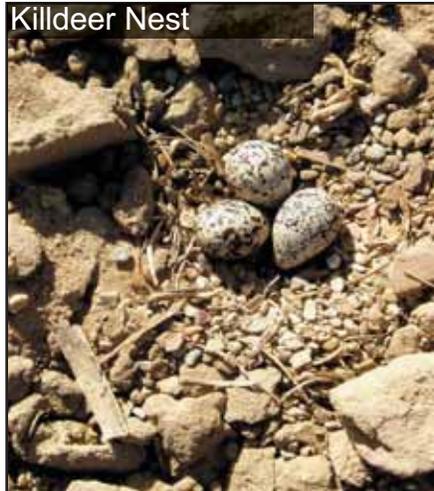
**DO NOT HARM OR
HANDLE BIRDS,
NESTS, OR EGGS**

Mariposa Energy, LLC
Mariposa Energy Project

Please report immediately all nests or injured birds to
the Designated Biologist at (408) 839-2402



Burrowing Owl



Killdeer Nest

Most birds are busy building nests, laying eggs, and raising young in the early spring through mid-summer.

Not all nests are in trees. Many birds build their nests in man-made structures and some, such as burrowing owls, northern harriers, and killdeers make nests on the ground or in burrows. Construction sites can actually provide unlikely nesting opportunities for a variety of bird species. A killdeer nest, for instance, is usually little more than a scrape on the ground in a large barren area—making a cleared construction site a perfect nesting opportunity.

Killdeer eggs can be difficult to see but if you notice lots of killdeer activity in an area, a nest is probably close by. After hatching, the killdeer chicks are on the move, like chickens and ducklings. The chicks can be difficult to see, but they usually stay close to their parents. When threatened, the chicks will freeze making them even more difficult to see and avoid.

Other birds, like mourning doves and house finches, may build their nests directly in or on site structures or equipment. If you observe birds building nests in equipment or on the ground, contact the Biological Monitor immediately.



Mourning Dove Nest

Except for a limited few, nearly all birds are protected by federal and state laws. Destruction of nests or eggs is a violation of the MBTA and California Fish and Game codes. An offense is considered criminal and can include substantial fines and possible jail time.

REMEMBER

All nests shall be avoided and reported to the Designated Biologist, Todd Ellwood at (408) 839-2402 or to the Compliance Manager, Chris Curry at (213) 346-2134.

Amphibians and Reptiles

Western Pond Turtle

The western pond turtle is a California Department of Fish and Game Species of Special Concern. The western pond turtle occurs in both permanent and intermittent waters, including marshes, streams, rivers, ponds, lakes and irrigation canals. They favor habitats with large amounts of emergent logs or boulders where they congregate to bask in the sun. Despite their name, pond turtles regularly utilize upland terrestrial habitat, most often during nesting or overland dispersal.



Western pond turtle may occur in portions of the drainages along the water supply pipeline alignment. To avoid potential adverse effects to the turtle, the following avoidance and minimization measures will be implemented during construction:

- Pre-construction surveys for western pond turtle will be conducted concurrent with the California red-legged frog and California tiger salamander pre-construction surveys;
- Western pond turtle avoidance areas will be delineated by exclusionary fencing. An exclusion zone of 100 feet from occupied aquatic habitats will be maintained until construction activities have been completed. No work activities will be conducted within the designated exclusion zones.
- Biologists will inspect work areas prior to commencement of construction activities, and biologists will have the authority to stop work if a western pond turtle is encountered during construction;
- The biological monitor will be present during any new ground-disturbing activities. Construction personnel shall inspect and examine any open excavations prior to the start of construction each morning. If a western pond turtle is observed contact the Designated Biologist, Biological Monitor or your site supervisor immediately. The biological monitor will transport the turtle out of the project area and release it into suitable habitat.

California red-legged frog and California tiger salamander

The California red-legged frog is a Federal threatened species and California species of concern, and California tiger salamander is classified as both Federal and California threatened. They can be found in aquatic and surrounding riparian and open grassland habitats, including potential dispersal and aestivation (refuge) habitat throughout the project area in California ground squirrel burrows. If you find a California red-legged frog or California tiger salamander in or adjacent to the work area, please stop work in that area to protect the frog and/or salamander from being killed or injured. Contact the biological monitor immediately for further assistance and do not attempt to move the animal yourself.

To avoid potential adverse effects to the California red-legged frog and California tiger salamander, the following avoidance and minimization measures will be implemented during construction:

- The Designated Biologist will determine an exclusion zone from identified aquatic habitats, and the zone will be maintained until construction activities have been completed. No work activities will be conducted within the designated exclusion zones.
- Burrows will be avoided to the extent possible. Burrows within a vehicle access route that cannot be avoided will be temporarily reinforced prior to allowing vehicle access (dry season only), and removed immediately after access is completed.
- Before disturbance to aquatic habitat, the Designated Biologist or Biological Monitor will check for California red-legged frog and California tiger salamander within the aquatic habitat or surrounding area.
- Before the start of linear work each morning, the Designated Biologist or Biological Monitor will check for frogs and salamanders under any equipment such as vehicles and stored pipes and all excavated steep-walled holes or trenches. Frogs and salamanders will be removed by the Designated Biologist or Biological Monitor and relocated.
- During wet-season construction if large volumes of construction traffic (25 vehicles or more) are scheduled to arrive or depart after dusk or before dawn, Biological monitors will survey Bruns Road and the access road, to detect and move any red-legged frog or tiger salamander prior to the expected construction traffic arrival.



Special-status Branchiopods

Fairy Shrimp

Two species of protected fairy shrimp occur near the MEP site. They include longhorn fairy shrimp and vernal pool fairy shrimp, and are listed as federally endangered and threatened species, respectively.

These species may be present both onsite in seasonal wetlands and seasonally

inundated areas as well as offsite in vernal pools and seasonal alkali wetlands east of the proposed gas pipeline route on the Lee Property and near the transmission line route. Ground disturbance within 250 feet of suitable habitat will be strictly monitored by the biological monitor, which in most cases will be limited to overland travel only during dry conditions. Be sure to get clearance from the Designated Biologist or one of the biological monitors before starting work in or near seasonal wetlands areas that were previously undisturbed.



To avoid potential adverse effects to the fairy shrimp, the following avoidance and minimization measures will be implemented during construction:

- Fairy shrimp avoidance areas will be delineated by exclusionary fencing. An exclusion zone of 250 feet or the limit of the immediate watershed supporting the seasonal wetland (whichever is larger) will be maintained until construction activities have been completed. No work activities will be conducted within the designated exclusion zones.
- A Biological Monitor will be onsite during all ground disturbing work within 250 feet of potential fairy shrimp habitat, and will oversee all off-road vehicle access for the project. No ground disturbance (including grading and excavation) will occur within 250 feet of shrimp habitat.

Mammals

San Joaquin Kit Fox

The San Joaquin kit fox, a federally endangered and California threatened species, is primarily nocturnal, but is commonly seen during the day in late spring and early summer. This species typically occurs in valley and foothill grassland or mixed shrub/grassland habitats throughout low, rolling hills and valleys and also utilizes habitats that have been altered by humans, such as agricultural lands and oil fields.



To avoid potential adverse effects to the kit fox, the following avoidance and minimization measures will be implemented during construction:

- Pre-construction surveys for San Joaquin kit fox dens in the project area, including areas within 200 feet of all project facilities, utility corridors, and access roads will be conducted.
- Configuration of exclusion zones, flagging and fencing around the San Joaquin kit fox dens will be 50 to 100 feet. Exclusion zone fencing will be maintained until all construction related or operational disturbances have been terminated.
- All construction, vehicle operation, material storage, or any other type of surface-disturbing activity are prohibited within the exclusion zones except for essential vehicle operation on existing roads and foot traffic.
- If a San Joaquin kit fox is encountered or any animal that construction personnel believe may be San Joaquin kit fox, the following protocol will be followed:
 - a. All work that could result in direct injury, disturbance, or harassment of the individual animal will immediately cease.
 - b. The construction manager, Designated Biologist and/or Biological Monitor will be immediately notified.
 - c. The animal will be allowed to leave the site on its own.

American Badger

American Badgers, a California Species of Special Concern, were once fairly widespread throughout open grassland habitats of California. They are now uncommon, permanent residents throughout most of the state, with the exception of the northern North Coast area. They are most abundant in the drier open stages of most shrub, forest, and herbaceous habitats with friable soils. The American badger may den in the vicinity of the project site.



To avoid potential adverse effects to the American Badger, the following avoidance and minimization measures will be implemented during construction:

- Pre-construction surveys will be conducted concurrent with the San Joaquin kit fox and burrowing owl pre-construction surveys including areas within 200 feet of all project facilities, utility corridors, and access roads.
- Den avoidance, monitoring, and destruction methods will adhere to those prescribed for San Joaquin kit fox.

If any animals are present in your work area, temporarily stop work and notify the Designated Biologist, Biological Monitor, or MEP Environmental Compliance Manager to have it removed. Do not attempt to handle injured or dead animals without first contacting the Designated Biologist or Biological Monitor.

Your Responsibility

- All personnel, equipment, and vehicles must remain inside the project boundary fence or in designated parking areas.
- If any animals (including snakes) are present in your work area, temporarily stop work and notify the Designated Biologist, Biological Monitor, or MEP Environmental Compliance Manager to have it removed.
- If wildlife is accidentally harmed, immediately notify the Biological Monitor.
- Do not handle wildlife.
- Do not feed or disturb wildlife.
- Report wildlife observations to the Designated Biologist, Biological Monitor, or MEP Environmental Compliance Manager.
- Fill out a Wildlife Observation form (in Environmental Compliance Manager's trailer and safety training trailer) for all wildlife observed on the site—alive, injured, or dead.

General Work Practices

- Stay in approved work areas (construction zone limits).
- Use only approved access roads.
- Keep out of designated exclusion areas.
- Inspect open trenches for wildlife each morning before starting work.
- Do not litter.
- No pets, firearms, or hunting allowed on the project site or in the project area.
- No fires.
- Smoke only in authorized cleared areas and discard used cigarettes appropriately into a trash receptacle.
- Keep fluid spill containment and clean up materials readily available.
- Clean up and report all hazardous material spills immediately.
- Do not discharge water into unapproved areas.
- Protect waterways and storm drains by implementing protective measures, such as silt fencing.
- Report trapped, injured, or dead wildlife to the Designated Biologist, Biological Monitor, or MEP Environmental Compliance Manager, and record the specifics on a Wildlife Observation Form. Forms are available in the Environmental Compliance Manager's trailer and the safety training trailer.



REMEMBER

Always ask before you act.

Wildlife Observation Form

It is the responsibility of all personnel to complete a wildlife observation form whenever they encounter an animal; alive, injured, or dead; or an animal nest, burrow, or other animal sign onsite that requires displacement. These forms will be available in the Environmental Compliance Manager's office and the safety training trailer. Sightings must also be reported to the Biological Monitor. The monitor will assist you if you have any questions about completing these forms.

Figure G-1. Wildlife Observation Form

WILDLIFE OBSERVATION FORM
To Record Animals Found In Mariposa Energy Project Areas
To be filled out by personnel who find active nest sites and burrows, dens, and dead or injured wildlife, or other biological resources during daily construction activities.

Name of employee: _____

Date: _____

Location of observation: _____

Wildlife species: _____

Condition of wildlife: Alive Dead

Possible cause of injury or death: _____

Where is the animal currently? _____

Is the resource in danger of project (or other) impacts? _____

Comments: _____

Please contact the Designated Biologist for questions and to report any wildlife, nest, or den in the project area that could be disturbed. The Designated Biologist will advise personnel on measures required by California Department of Fish and Game (CDFG) and United States Fish and Wildlife Service (USFWS) to protect fish, wildlife and vegetation from construction impacts.

DESIGNATED BIOLOGIST
Todd Ellwood: (408) 839-2402

BIOLOGICAL FIELD MONITORS
TBD

CH2MHILL • 2485 Natomas Park Drive, Suite 600, Sacramento, California 95833 • (916) 920-0300

Cultural Resources

Any trace of past human activity older than 50 years could be an important cultural resource. Places or sites where these traces occur are a part of a proud heritage that belongs to all of us. In the Alameda and Contra Costa County area, there are archaeological remains that represent over 11,000 years of Native American prehistory and continue until 1769, when Spanish settlement occurred in California. Historical archaeological features, deposits, and architectural structural resources may also be found in the area. Significant cultural resources represent historical events, engineering achievements, and art or architecture styles that define what Americans have experienced. Ethnographic resources are also cultural resources, and they may include traditional plant gathering areas, shrines and ceremonial areas, cemeteries, natural landscape features, and ethnic structures or districts. Because these achievements define what we are and affect what we become, the past belongs to us all and we all have a responsibility to help preserve significant cultural resources.

Archaeological and historical sites are a non-renewable resource. Though we are always creating new cultural resources for people of the future to interpret or preserve for posterity, historical and archaeological sites, once destroyed, cannot be recreated.

Archaeological remains are often so fragmentary that it is possible to scrape, dig, or bulldoze right through a buried site without realizing it. Here's what to look for:

- Discolored soil, particularly gray-black soil with a “greasy” feel to it, in an area of lighter colored soils.
- Any animal or human bone. The proper treatment of Native American graves is of great concern. Possession of artifacts or human remains from a Native American grave is a felony (PRC 5097.99).
- A thin layer, or series of layers, particularly dark layers containing charcoal or ash, in an excavation side wall.
- Shell, freshwater or marine, or shell artifacts
- Any unusual concentration of rocks, particularly if they seem to form a pattern (such as a campfire).
- A concentration of small pieces of broken rock, particularly obsidian or chert with sharp edges.
- A concentration of historic-era trash, including bottles, broken glass, broken ceramic, bone, and metal pieces.
- A concentration of brick, concrete, or mortared stone that might indicate a structural foundation.

The kinds of cultural resources that may be discovered at the MEP project site include prehistoric artifacts such as grinding stones, arrowheads, and stone flakes, and historic artifacts such as glass bottles, metal objects, animal bones, and building foundations. Human skeletons may also be exposed.

Examples of Cultural Resources

The following are examples of cultural resources that could be uncovered in the project area. The first seven examples are all stone tools shaped for specific functions.

The first example is a small **hammer stone**. Hammer stones were used for a wide range of tasks and may show wear at one or both ends.



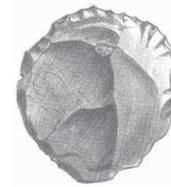
Hammer Stone



Flaked Cobble

Flaked cobbles were used for scraping, digging, or cutting. They can occur in a variety of shapes and sizes, with a smooth end for holding.

Scrapers had a variety of uses including preparing animal skins, shaping wood, or preparing food. Depending on their function, scrapers come in many shapes and sizes.



Scraper



Lithic Debitage

Lithic debitage is the waste material produced during the manufacture of flaked stone tools such as knives and projectile points. Debitage may be found in a variety of shapes and sizes, often as a concentration of small flakes of stone.



Flaked Knives

Flaked knives are very distinctive and easily identified by shape and flaking pattern. Flaked knives can be found in a large number of shapes and sizes.

Projectile Points are also very distinctive, and are commonly referred to as arrowheads. Projectile points can range in size from one to six inches long and several inches wide.



Arrowheads



Mortar and Pestle

The **Mortar** and **Pestle** were used together as a grinding tool. They were used to prepare foods, pigments, medicines, and potions.

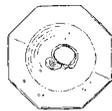
Historic artifacts that may be present include glass bottles, bone, ceramics, metal cans, and other metal objects, including wire, nails, and building hardware, as well as the remains of former building foundations and underground utilities.



Medicine Bottle



Glass Ink Bottle
*Clear glass octagonal ink bottle
early 20th century*



Glass Milk Bottle
*One quart milk bottle
Hester Dairy, San Jose, CA
circa 1935*

Your Responsibility

If a Cultural Resources Monitor is present when a cultural resource is exposed, he or she will direct you to stop work at the location of the “find.” The Cultural Resource Specialist and Cultural Resource Monitors have the authority to halt construction in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the Cultural Resource Specialist. Stopping construction in the vicinity of an archaeological find is an important condition of the project's license from the CEC and one with which we expect you to comply. Work may be stopped or redirected for only a few minutes, or it may be shut down for an extended period of time, depending on what is found.

If a Cultural Resources Monitor is not present when a cultural resource is found, it is your responsibility to stop work and notify your supervisor and the Cultural Resource Specialist or Cultural Resource Monitor. Work may not resume until the construction supervisor and the Cultural Resource Specialist determine how to redirect work to avoid the find until the CEC and Cultural Resources Specialist can evaluate its significance.

It is illegal for you to collect any objects, including old bottles, from public land according to the California Public Resources Code (sections 5097.5 and 5097.9). Disturbing Native American burial sites is a felony under California Public Resources Code Section 5097.99. In addition, the deliberate destruction and removal of cultural resources on private land is prohibited under the conditions of the project's license from the CEC.

The following state and federal laws and regulations affect the management of cultural resources:

- Archaeological Resources Protection Act
- National Historic Preservation Act
- California Environmental Quality Act
- California Public Resources Code (Sections 5097.5, 5097.9, and 5097.99)

Violations of these regulations can result in federal indictment, and are punishable by civil and criminal penalties, including both fines and/or imprisonment, and could result in the revocation of project certifications and shutdown of the project at the direction of the appropriate state agency.

Only authorized personnel may handle cultural resources. Notify the Cultural Resources Monitor or Site Superintendent if you think you may have found a cultural resource. Do not touch or move the object.

If you have any questions about these procedures, please ask your Site Superintendent or Cultural Resources Monitor for more information.

Paleontological Resources

Paleontological resources, or fossils, are the remains of prehistoric plants and animals. Fossils include animal bones and teeth, shells, and plant remains such as logs and prehistoric leaf litter. Fossils also include such things as ancient burrows and tracks, and even very small remains like the bones of birds and rodents, and even seeds.

Paleontological resources are protected by federal, state, and local laws, and it is a violation of those laws to collect fossils without proper authorization or to disturb fossils except during a scientifically controlled recovery. Violations of these laws can result in fines, delays, and even revocation of certification and shutdown of the project.

Mariposa Energy, LLC is committed to obeying the laws regarding paleontological resources monitoring and mitigation during construction of MEP. The following laws and regulations affect the management of paleontological resources at this site:

- California Environmental Quality Act
- California Public Resources Code (Sections 5097.5 and 5097.9)
- Alameda County East Planning Area General Plan
- Contra Costa General Plan

It's these laws that require all of us to specifically watch for and take steps to protect fossils during excavations for MEP. The laws protecting fossils are specific:

NO individual can disturb fossils except in the course of their scientific investigation and controlled recovery. If a fossil is encountered during construction excavation, that discovery must be the first step in its scientific recovery.

Paleontological Resources Specialist and Monitors

Fossils have been found in the project area; therefore, MEP construction activities will include a paleontological resources protection program. As part of the program, a designated Paleontological Resources Specialist (PRS) will conduct paleontological resources monitoring during all ground-disturbing activities. The PRS will be assisted by Paleontological Resources Monitors (PRMs) who will be onsite during excavation of undisturbed sediments that might contain fossils. If a potential fossil is discovered, the PRM and PRS will evaluate it to determine if it is a fossil.

The Paleontological Resources Monitor has the authority to stop or redirect work in the immediate vicinity of a fossil find until it is properly recorded and recovered.

Examples of Paleontological Resources

It is important that MEP site employees are able to recognize fossils. Fossils are non-renewable resources because they represent life and environments that no longer exist. If they are damaged, destroyed, or taken without proper, scientifically controlled collection, the detailed evidence of that past life is lost forever. When properly collected, fossils provide important scientific evidence not only of the types of animals or plants of the distant past, but also data on past environments, climate change and past extinction events.

Scientifically significant fossils come in all shapes and sizes. This photograph shows the track of an extinct trilobite preserved in mica-rich shale with a trilobite fossil of about the right size. These animals went extinct some 250 million years ago.



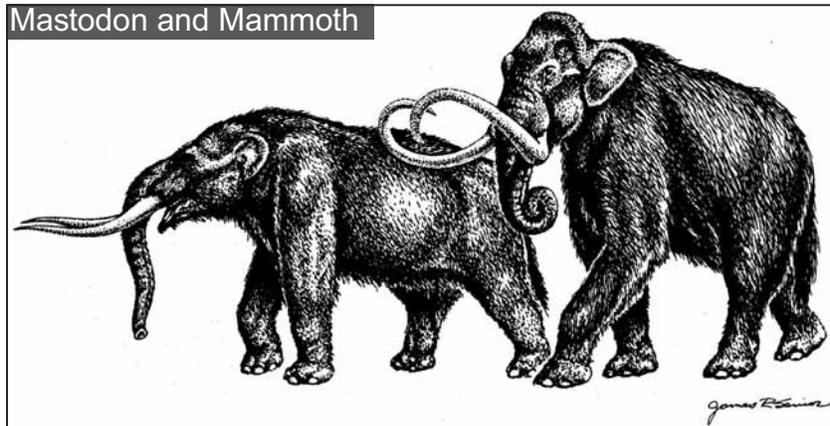
And here are two ammonites, which were essentially squids living in shells, recovered from rocks laid down when the ocean covered most of California, including the MEP site, up to about 65 million years ago when they went extinct.



Keep in mind that even very small fossils are protected by law. Here is an example of a coral fossil, found during excavations. So it is important to take care during excavations to identify and protect any fossils that may be uncovered until they are examined and removed by a qualified paleontologist.



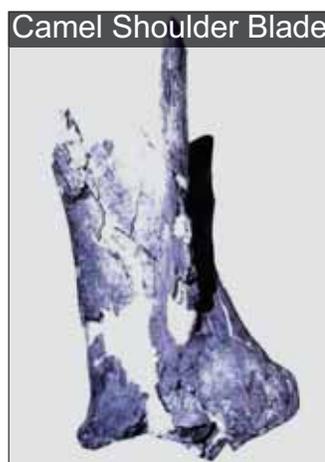
Important fossils have come from sediments like those at the MEP site. The remains of Ice Age animals and plants were included in the sediment washed out of the Diablo Range and deposited here. These could include any of a number of extinct species: Mammoth and mastodon lived in the Central Valley during the last Ice Age. In this sketch the mastodon is the shorter, stockier “elephantid” to the left, the mammoth is to the right.



From studies of the geology of the site we know that there are areas underlain by sediment that may contain fossils such as vertebrae of the extinct North American camel, or fossil teeth, such as this mammoth tooth.



A PRM will be present during excavations in paleontologically sensitive sediment. But the monitor only has two eyes, and your eyes are needed too. When they're covered with dirt, fossils are never as obvious as these cleaned specimens, so if it doesn't look like a rock, it may not be a rock, and might well be a fossil. Here we have a shoulder blade of the extinct North American camel.



And, even though it looks like nothing more than a discarded peach pit, this is actually a fossil walnut that came from a well boring near Turlock that is about 700,000 years old.



Your Responsibility

Fossils at the MEP site are likely to be found in the unconsolidated soil below the disturbed material covering the site. The water supply pipeline route will cross a hill of sediment which may yield fossils. Fossils could also be found during excavations for the natural gas pipeline, transmission line, or water supply pipeline, as well as any other ground-disturbing activities. That is why the CEC requires a PRM to be present during excavations in these areas. But we need your help as well.

Be on the look-out for anything that looks strange or different—a bone, a shell, a log, or any other object that is just out of place or is shaped strangely. These need to be brought to the attention of either the PRS or PRM, or to your construction supervisor. What you find may be a fossil that will need to be recovered properly to avoid violating laws protecting it.

If you think you have found a fossil, leave it where it is, contact the PRM, and divert construction activities away from the find. It is important to remember that the PRM has the authority to stop excavations near any fossil find. When a fossil is discovered, the PRM will cordon off the site of the find to protect the area and keep heavy equipment out.

If a PRM is not immediately available, notify your supervisor and cordon off the area yourself with avoidance fencing or lathe and construction avoidance tape so that others will know not to enter that area. The PRS and PRM will determine whether something scientifically significant has actually been found, and if so, the site will remain off limits until the find is scientifically recovered. Excavation work can continue in other areas away from the find provided adequate monitoring of the excavations continues.

Do not congregate near the find or impede the scientists investigating the find in any way. They will work as quickly as possible to excavate the find while recovering its scientific values as required by law. Construction excavations can continue elsewhere while the fossil find is assessed and removed, provided the excavations are monitored adequately. Depending on the nature of the sediment the fossils are found in, steps might also be taken to remove and save a sample of the dirt for later screening for small bones and teeth. After scientific recovery is completed, the avoidance barrier will be taken down and your supervisor will be informed that work may resume there. The delay while recovery takes place will be kept as short as possible to scientifically recover the fossil find.

Stormwater Management

Polluted runoff can negatively impact birds, aquatic life, livestock, recreation, pipe systems, navigation in waterways, and sources of drinking water. The primary stormwater pollutant at construction sites is excess sediment. At the national level, the U.S. EPA states that 40% of all U.S. waters are not fishable or swimmable, and has identified sediment from construction sites as the #1 non-point source pollutant. Sediment also transports other pollutants such as pesticides, metals, oils, and greases.



National Pollutant Discharge Elimination System General Permit Order No. 2009-0009-DWQ, also known as the Construction General Permit, regulates discharges of pollutants in stormwater discharges to waters of the U.S. from construction sites that disturb one or more acres of land surface. It is illegal to pollute local waterways, and fines and criminal charges are becoming more common. Members of regulatory agencies with jurisdiction over stormwater discharges from a construction site, such as the Regional Water Quality Control Board, can arrive at the site unannounced at any time to inspect all areas for compliance with the Construction General Permit.

The Stormwater Pollution Prevention Plan

A Stormwater Pollution Prevention Plan, also known as a SWPPP, was developed to address the construction activities associated with the MEP project and identify Best Management Practices (BMPs) for stormwater pollution prevention. Adherence to the BMPs is required in order to keep the project site in compliance with applicable regulations and prevent the levying of fines or even an Immediate Cease and Desist Order.

The Qualified SWPPP Practitioner has primary responsibility for the implementation, inspection, and maintenance of the BMPs identified in the SWPPP. BMPs implemented onsite include controls for erosion, sedimentation, tracking, wind erosion, non-stormwater discharges, and waste management.

Best Management Practices

Erosion control, also referred to as soil stabilization, is a source control measure that is designed to prevent soil particles from detaching and becoming transported in stormwater runoff. Erosion-control BMPs protect the soil surface by covering or binding soil particles. Examples of erosion controls are the use of mulch or geotextiles.

- Sediment controls are designed to intercept and settle out soil particles that have been detached and transported by the force of water. Examples of sediment controls are the use of silt fence or fiber rolls.



- Tracking controls prevent sediment and other loose construction materials from being tracked off the project site. An example of a tracking control is the use of a stabilized construction entrance or exit.

- Dust erosion control measures, such as watering the disturbed areas at the construction site, are implemented to minimize the wind-blown loss of soil from the site.
- Non-stormwater control measures address the storage, use, and disposal of materials such as vehicle fluids and curing compounds.
- Waste management controls manage the various waste streams generated from construction activities, such as the disposal of excess concrete.



Your Responsibility

At the job site, you can assist in the effort to prevent pollutant-laden stormwater from discharging offsite by:

- Installing fencing to protect sensitive resources and limit construction areas in coordination with the Site Supervisor and Biological Monitor. Respect the boundaries of these fenced areas, and only open or remove them upon direction of the Site Supervisor and Biological Monitor.
- Installing fiber rolls, silt fence, covers on stockpiled materials, and other BMPs as directed by the Site Supervisor.
- Only moving, adjusting, or removing BMPs in coordination with the Site Supervisor.
- Immediately contacting the Site Supervisor if you see fiber rolls, silt fence, or other BMPs in need of maintenance or repair.

To minimize dust:

- Drive vehicles onsite at the posted speed limit.
- Use the stabilized construction entrances/exits to prevent dirt on tires from being tracked-out onto public or paved roads.
- Inspect equipment vehicle tires and wash as necessary to be free of dust prior to entering paved roadways.
- Sweep or vacuum tracked dirt from paved roads daily, and as directed by the Air Quality Construction Mitigation Manager.
- Water the project site as directed by the Site Supervisor to control dust associated with vehicle traffic and construction activities.
- Cover and berm stockpiles of loose construction materials, such as soil, that are not actively being used.

To minimize the potential of a release of pollutants into stormwater:

- Use the designated concrete washout area, material storage areas, and vehicle maintenance and fueling areas as specified in the SWPPP.
- Walk, drive, and park only in designated areas and paths.
- Inspect your vehicles and equipment daily for leaks, and report leaks to the Site Supervisor.
- Refuel equipment or vehicles only in designated areas.
- Use drip pans or absorbent pads for all vehicle and equipment maintenance activities that involve grease, oil, solvents, or other vehicle fluids.
- Wash equipment and vehicles only in designated areas. When feasible, wash them offsite.
- Store all materials only in their designated areas.
- Put all waste materials only in their respective designated containers.
- Close disposal containers, including trash bins, at the end of every business day and during a rain event.
- Use the designated concrete washout area when needing to wash out concrete trucks or dispose of Portland cement concrete or asphalt concrete waste.
- Park paving equipment over plastic when not in use.
- Check with the Site Supervisor before you discharge groundwater or any wastewater.
- Report leaks, spills, or discovery of contaminated soil immediately to the Site Supervisor. Implement clean-up procedures as directed.

To help with the detection of pollutants in stormwater:

- Immediately report any dirty water or sedimentation or discharge of pollutants leaving the project site to the Site Supervisor.
- Immediately report the discovery of any debris in water areas to the Site Supervisor.

Contact Personnel

MEP Construction Manager, Phil Knox
(770) 883-4470

Onsite Construction Manager, James Spicer
(213) 346-2135

Environmental Compliance Manager, Chris Curry
(213) 346-2134

Biological Monitors

Designated Biologist/Biological Monitor, Todd Ellwood
Cell (408) 839-2402, Office (415) 541-7220 x37040

Biological Field Monitor, John Hale
Cell (530) 864-5049

Cultural Resources Monitors

Cultural Resources Monitor, Clint Helton
Cell (949) 500-2496

Alternate Cultural Resources Monitor, Aaron Fergusson
Cell (801) 541-0366, Office (435) 843-1378

Paleontological Resources Monitors

Paleontological Resources Monitor, Dr. Geof Spaulding
Cell (702) 524-5860, Office (702) 953-1233

Paleontological Resources Monitor, Jaspal Saini
Cell (916) 225-3100

Paleontological Resources Monitor, James Verhoff
Cell (267) 253-9236, Office (714) 435-6039

Mariposa Energy Project

