UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
HOLLISTER FIELD OFFICE

ENVIRONMENTAL ASSESSMENT
Clear Creek Asbestos Decontamination Facility
DOI-BLM-CA-0900-2009-001-EA

DATE INITIATED: October 1, 2008

CONTROL NUMBER: DOI-BLM-CA-0900-2009-001-EA

CASE FILE/SERIAL NUMBER: NA

PROPONENT: BLM

PROJECT: Decontamination Facility Construction

LOCATION: Clear Creek Management Area, Middle Oak Flat
NW¼ of SW¼, Section 16, T18S, R11E, MDBM

AFFECTED ACREAGE: 3.1 acres

USGS 7.5' QUADRANGLE: Hepsedam Peak

LAND STATUS: Public - BLM

SPECIAL DESIGNATION AREA: Special Recreation Management Area (SRMA)

AUTHORITY: Federal Land Management and Policy Act of 1978, as amended.

LAND USE PLAN CONFORMANCE:

The proposed action is subject to and in conformance with the Hollister Resource Management Plan (RMP) of 1984 (as amended) and the Record of Decision for the Clear Creek Management Area RMP Amendment and Route Designation (2006) in accordance with Title 43 Code of Federal Regulations 1610.5-3. The Hollister RMP was amended twice (in 1986 and 1995) to address human health concerns associated with exposure to asbestos and other emerging issues. The Record of Decision for the Clear Creek Management Area RMP Amendment and Route Designation (approved in 2006) also included management goals and objectives to reduce and minimize risk to human health and the environment. All three RMP amendments identified the need to provide a vehicle washing facility at the main entrance to Clear Creek to remove asbestos-laden soils from the undercarriage of vehicles to eliminate 'track-out' of asbestos fibers from CCMA and the potential for increased human health risks from prolonged exposure to hazardous airborne asbestos fibers.

I. PURPOSE AND NEED FOR PROPOSED ACTION:

The purpose of the proposed action is to reduce the human health risk associated with exposure to asbestos in the Clear Creek Management Area (CCMA). The proposed action is necessary to minimize the transport of asbestos to locations outside of CCMA on the undercarriage of vehicles and other equipment.

The CCMA is located on one of the largest naturally occurring asbestos (NOA) deposits in the world. The CCMA is managed by the Bureau of Land Management's (BLM) Hollister Field Office. Within the CCMA boundary is the Serpentine Area of Critical Environmental Concern (ACEC) covering about 30,200 acres. The ACEC was designated in 1984 based on the human health risks associated with exposure to the naturally occurring asbestos within the serpentine soils and because of the unique vegetation and forest types associated with serpentine soil. The Serpentine ACEC is sometimes referred to as the Hazardous Asbestos Area (HAA).

Asbestos is a generic term that refers to a class of needle-shaped mineral types, all of which occur naturally in the environment. Asbestos found in the Clear Creek area is primarily of the chrysotile mineral type. Both animal and human studies have demonstrated that inhalation of all types of asbestos can be carcinogenic (PTI, 1992), and although there are uncertainties with regards to the cancer potency of asbestos fiber types, chrysotile asbestos has been classified as a human carcinogen by EPA and the Department of Health and Human Services (DHHS).

The proposed facility would support asbestos decontamination of BLM employees and equipment, and would provide a storage area for BLM project materials. The proposed Clear Creek Asbestos Decontamination Facility is needed to replace the existing decontamination facility, which is located several miles to the west of the CCMA on Coalinga Road. The existing decontamination facility has been determined to be too far from the asbestos area and is not adequate for decontaminating large equipment.

In the CCMA, BLM personnel conduct a variety of activities that require operation of heavy equipment, including abandoned mine lands clean-up, watershed restoration projects, and maintenance of roads, trails, and other recreation facilities in and out of the HAA. Personnel and equipment need to be decontaminated before leaving the area to comply with Occupational Safety and Health Administration (OSHA) regulations.

The new facility would be separated by fencing and signage into "clean" and "dirty" sides. The dirty side would be for vehicles and personnel coming from, or working in, nearby areas containing NOA. The clean side would be for vehicles and personnel that have been decontaminated or that arrive from "clean" locations and would remain on the clean side of the facility. The Decontamination Building would straddle both sides, and provide the means by which employees can decontaminate themselves before moving to the clean side and/or leaving the area at the end of a shift. The determination of "clean" versus "dirty" is not quantitative, and would remain the judgment of BLM personnel as to the level of decontamination that would be acceptable for passage from the dirty side to the clean side.

II. PROPOSED ACTION AND ALTERNATIVES:

A. PROPOSED ACTION

BLM proposes to construct the Clear Creek Asbestos Decontamination Facility on a three-acre site outside the Serpentine ACEC at the main entrance to Clear Creek Canyon. The Clear Creek Asbestos Decontamination Facility (facility) would be located on the north side of Clear Creek Road, one mile east of Coalinga Road, 55 miles south of Hollister, CA in southern San Benito County.

The proposed facility would consist of approximately one-quarter mile of access roads, a vehicle wash pad (3,100 $ft.^2$), the Decontamination Building (5,500 $ft.^2$), the Storage Shop (1,200 $ft.^2$), and a pad for excavated materials storage (40,000 $ft.^2$) in the three-acre project area.

The work would involve: site preparation, earthwork and base aggregate, including grading, compacting, drainage structures, placement of base aggregate, stockpile, compact and grade excess soil stockpile, site finish grading and erosion control for the site. The proposed action also includes installation of a utility system for two buildings and the vehicle wash station, asphalt paving, and other site work including fencing and gates.

Maps 1 and 2 in Appendix A (Location Plan/Site Plan) show the general project location. Maps 3 and 4 (Appendix A) show the layout of the proposed decontamination facility and the area of potential effects to public lands resources. Appendix B outlines the schedule and duration of construction activities that would be used to coordinate implementation of the proposed action and resources monitoring. Refer to Appendix C and Appendix D for erosion control measures and other best management practice details that are incorporated by reference here into the proposed action.

1. Construction of the Clear Creek Asbestos Decontamination Facility

Refer to Map 3 in Appendix A for the general site details, including the location of access roads, the Decontamination Building and Storage Shop, a leach field for the Decontamination Building's septic system, and a pad for excavated materials storage in the three-acre project area. Map 4 displays an alternative design and layout for the administrative buildings, and includes the location of the vehicle wash pad.

Site clearing, demolition, grading and other earthwork (i.e. excavation), and road building would be necessary in order to prepare the site for construction of the facility.

Site clearing would include trees flagged for removal, in addition to shrubs, brush, downed timber, rotten wood, heavy growth of grass and weeds, vines, rubbish, structure, and debris. Additional grubbing of all stumps, roots, root mats, logs, and debris encountered would also be necessary under areas to be paved, and in 'cut' and 'fill' areas. Potential demolition would include the removal of existing infrastructure buried or above ground within the project area.

Excavation of the hillside behind the proposed facility and other portions of the project area would be necessary to attain the proper slope for building construction and site operations. Maps 3 and 4 describe the existing topography of the site and indicate the finished grade required for construction of the facility, respectively. This work would incorporate all operations in connection with preparation of ground surface for embankments or fills and protection of the finished grade.

Grading of the site would include stripping of topsoil, which would be separated from other subsoil materials, and then stockpiled at the designated 'excavated materials storage' area. This storage (construction tailings) pile would be designed to drain surface water freely.

Topsoil tailings would be compacted and capped on-site to prevent the spread of noxious and invasive weeds, like yellow starthistle, whose seed banks are firmly established in the project area. However, it is possible that the storage pile would be used as a "borrow pit" for other BLM projects once the topsoils containing invasive species seed bank are capped.

Additional earthwork necessary to prepare the site would consist of filling and backfilling of selected material from site excavation or from off-site borrow. Also, trenching and compaction of the site for utilities would take place according to standard specifications for construction of paved (concrete or asphalt) access roads, curbs, and sidewalks; a storm drainage system, and a septic tank system.

Upon completion of major construction activities, the proposed action would allow for seeding, sodding, and landscaping of the project area to rehabilitate disturbed areas and promote the growth of desired vegetation.

2. Access Roads

Access to the proposed facility would involve construction of approximately one-quarter mile of new road designed to allow traffic from Clear Creek Road to enter the site from the eastern portion of the project area as vehicles leave the ACEC. The proposed new route would allow vehicles to drive through the vehicle wash rack to access facility parking or exit to Clear Creek Road from the western portion of the site. Refer to Appendix A for the general location of access roads.

The road in-to and out-of the vehicle wash area would be slightly sloped towards the wheel wash unit to enhance collection of fugitive water, and would be constructed of reinforced concrete to support vehicle loads and minimize water loss. The roadway material and adjacent drainage control curbs would be asphaltic concrete along the main entrance and exit drive, with the remaining areas compacted aggregate base. Concrete would be provided for building and equipment pads and in the vehicle wash area.

3. Fencing and Layout

The proposed site would be fenced to force the flow of both vehicular and foot traffic through the site. The flow direction would be sustained in order to maintain the highest possible "cleanliness" level on the clean side of the facility. The clean side would be approximately one quarter of the total site area.

Six-foot galvanized chain link fencing with three-strand barbed wire would surround the site for security purposes and to separate the clean and dirty sides. The vehicular entrances and exits would be controlled with six-foot galvanized chain link gates to restrict entrance by any vehicles not associated with BLM activity in the area.

4. Electric Service

The facility would require a 300-ampere, 480/277-volt, 3-phase, 4-wire service from Pacific Gas & Electric (PG&E). It is anticipated that service would be provided from the overhead lines at the south end of the site. A transformer would be located at the site for stepping down distribution voltage to 480/277 volts. The service panel would be sized for the initial demand load of the site, but would include 25 percent extra capacity for future loads.

A 100-kilowatt standby diesel engine generator would provide back-up power to the entire facility when normal utility power is interrupted. The generator would be housed in a weatherproof enclosure with a sub-base, double-contained, fuel tank sized to run the generator for 24 hours at 100-percent load. Additional fuel would be delivered to the site for outages lasting longer than 24 hours.

5. Water System

Delivery and Storage

Water for the facility would be trucked into the site and stored in a 13,000-gallon tank since none of the exploration wells produce useable groundwater. This water would meet all applicable drinking water standards. The storage tank would provide water for facility use and 5,000 gallons for fire flow. The water system, including tank and booster pumps, would be located on the clean side of the site in the lower southwest corner (Appendix A). The tank would be fitted with an inlet, outlet, overflow, ultra-sonic level sensor, and a manway to permit inspection. A lighted beacon would provide a visual warning that the tank level is low.

Disinfection

Disinfection of the water system would be maintained with a chlorinator. The chlorinator would be a self-contained system complete with a brine tank, day tank, sample pump, reagent-less chlorine analyzer, recirculation pump, and control panel. The chlorinator would sample the storage tank and inject chlorine based on user set-point chlorine levels. The chlorine concentration in the day tank would be below the hazardous level and thus would not require secondary containment.

6. Decontamination Process

Vehicle Decontamination

Vehicle cleaning and decontamination would be a three-step process consisting of wheel wash, wand wash, and vacuum. This process would take place in the vehicle wash area located near the facility's entrance from the ACEC (Appendix A). Vehicles may be washed using the wheel wash, wand wash, or both. ATVs and motorcycles would be washed with a wand. The wheel wash and wand wash area would be located prior to the turnoff onto the circular drive, thus allowing vehicles to proceed into the dirty side for parking, working, or to the vacuum area prior to exiting the site. The wash areas would be almost 100-feet in length, large enough to accommodate oversized vehicles and equipment (i.e., a low-bed truck trailer).

Wheel Wash

The wheel wash system would be a manufactured unit consisting of two wheel wash systems, an automatic wheel wash system and a manual wheel wash system, and a water recycling system. The automatic wheel wash would have a steel roadbed that houses spray nozzles as shown in Figure 1.

The manual wheel wash area would be a concrete slab sloped towards a concrete channel. It would be used primarily for heavy equipment, ATVs, and smaller equipment with open cabs for which the automated wheel wash would not be practical. It would also reduce the facility's water usage at the manual wand wash system. A wash water channel underneath the two wheel wash systems would direct solids and dirty water to a water recycling tank.

A 10,000-gallon water recycling tank would separate solids and recycle the water back to the wheel wash systems. In addition, a fine screen surface filter vessel would be installed in a pre-cast concrete vault adjacent to the water recycling tank to filter out solids from the gravity overflow.

Figure 1: Example of a Wheel Washing System

The wash water channel underneath the central wash station would direct solids and dirty water to the 10,000-gallon recycling tank as shown in Figure 2. The recycling tank would have a settlement chamber and a pump chamber. Polymer would be added to the settlement chamber to promote settling of solids. Settled water would overflow to the pump chamber where it would be recycled to the wheel wash station.

Figure 2: Water Recycling Tank

Wand Wash

Water for the wand wash system would be supplied from the facility's water system. The wand wash area and the walkway from the vacuum area to the dirty side entrance of the Decontamination Building would be covered. These covers would limit the amount of rain and stormwater entering the wash water system.

For ATVs and smaller equipment with open cabs, the automated wheel wash would not be practical. These vehicles would use the manual wheel wash followed by the wand wash, then vacuum if applicable. The driver would then proceed to the Decontamination Building.

The wand wash would allow drivers to wash selective areas; clean areas not covered by the wheel wash, and hard to remove solids. The wand wash system would include water storage, a high pressure pump, and a spray wand. The wand wash area would be supplied with two retractable overhead hose reels, as well as one retractable hose reel at ground level. Drainage from the wand area would flow into the wheel wash catchment area.

The high volume power wash would supply approximately 7 gpm per hose at 100 psi. A concrete pad would be placed under the water storage tank for housekeeping purposes. A minimum of two bollards would be placed at the station to protect the equipment.

HEPA Vacuum Area

The vacuum area would allow for cleaning of the vehicle interior. The vacuum cleaning area would be located near the Decontamination Building. The walkway/steps from the vacuum area to the dirty side entrance of the Decontamination Building would be covered.

Personal Decontamination

Prior to entering the Decontamination Building, employees would decontaminate the exterior and interior of any vehicle intending to enter the clean part of the site. After vacuuming the vehicle interior, employees would not be allowed to enter the vehicle until after completing decontaminating themselves. The vehicle would remain in the vacuum area until this is done. Employees would enter through the mud room entrance and shower and hose off excess mud and dirt onto the grated floor. Wet rain gear and boots would be placed on hooks and shelves assigned to that particular employee. Employees would then proceed into the gender-specific change room. Employees would disrobe in change room and place the contaminated clothing and respirator cartridge in the bin located in shower. Employees would shower to decontaminate themselves, wash the respirator, and also wash the exterior of the bin thoroughly. The employees would dry themselves, the respirator, and the bin. Employees would seal the bin and take it and the respirator to their personal locker, get dressed in street clothes, and put the decontaminated respirator in their locker. The employee would then place the sealed bin on the exterior of the building under the eave next to the locker entrance designated as "dirty laundry pickup," then go to the vehicle vacuum area to retrieve the decontaminated vehicle.

7. Description and Details of Erosion Controls

Refer to Appendix C and D (attached) for erosion control measures and other best management practice details proposed in the site plan, including but not limited the following:

i. Disturbed cut slopes would be stabilized by covering the area with geotextile fabric that would be anchored in place.

ii. At the time existing slopes are excavated, a permanent drainage swale would be constructed at the base of the slope of disturbed soils.

iii. Stockpiled excess dirt (i.e. the Storage Pile) would be seeded and covered with weed-free straw.

MITIGATION MEASURES

1. Work would begin after April 15th and would be completed by October 15th, prior to the start of the rainy season.

2. Identify primary (and secondary access) routes from the unpaved Clear Creek Road to minimize the number of temporary roads to access the project site. Inspect all vehicles for

invasive weeds (yellow starthistle and medusahead grass) upon entering and leaving the project area.

3. A segment (approx 400 feet) of Clear Creek Road would be wetted down frequently during construction of the proposed facility to mitigate dust and reduce asbestos emissions.

4. Protect existing trees and other vegetation to remain against damage.
   - o Stop topsoil stripping at sufficient distances to prevent damage to the main root system(s) of desired tree species (esp. Valley Oaks).
   - o Establish temporary protection barriers, as required.
   - o Repair or replace desired tree species and vegetation damaged by construction activities.

5. Prior to stripping topsoil and excavation, implement soil erosion and sediment controls in accordance with the "Standards and Specifications for Soil Erosion and Sediment Controls in Developing Areas" prepared by the US Department of Agriculture (USDA) Soil Conservation Service.
   - o Blasting with any type of explosives is prohibited.
   - o Waste materials would be contained on-site or disposed of, legally, off-site.
   - o During construction, shape and drain embankments and excavations.
   - o Maintain ditches and drains to provide drainage at all times.

6. Provide for internal drainage of paved areas to concentrate contaminated materials on-site. Personal decontamination areas are to be designed with floor drains to facilitate cleaning.

7. Construct facility to be ADA compliant.

8. Prior to surface disturbance and during construction activities, a qualified archeologist will meet with the project contractor on-site and monitor the proposed site preparation, grading, and construction activities. In the event that any artifacts or other cultural materials are unearthed, then all work will cease in the immediate area of the discovery and the archeologist will evaluate the find and initiate mitigation measures if necessary.

B. NO ACTION ALTERNATIVE

The proposed action would not be undertaken as proposed. Existing management and use of the Section 8 Decontamination Facility would continue subject to applicable statutes, regulations, policy and land use plans.

C. ALTERNATIVE CONSIDERED, BUT NOT ANALYZED

Location 2. This location is south of Clear Creek Road and is shown on Map 1 in Appendix A. This site was not considered further due to presence of special status plant species.

Location 3. This location is on the southwest side of Clear Creek Road, near the main entrance to the CCMA, and is also shown on Map 1 in Appendix A. The site was not considered further because of its limited size and proximity to cultural resources.

Both of these locations, as well as another BLM parcel adjacent to Coalinga Road (T18S R11E, Section 17), were excluded from further analysis because of their proximity to the San Benito River floodplain, and because they would require contaminated vehicles to travel farther distances outside the Serpentine ACEC than the proposed location of the facility at Middle Oak Flat (Map 2).

III. AFFECTED ENVIRONMENT

Critical Element	Potentially Affected Yes	No	Critical Element	Potentially Affected Yes	No
Air Quality		X	Native American Values		X
ACEC/RNA		X	T & E Species		X
Cultural Resources	X		Vegetation	X	
Environmental Justice		X	Wastes, Hazardous/Solid	X	
Farmlands, Prime/Unique		X	Water Quality (ground/surface)	X	
Fish and Wildlife		X	Wetlands/Riparian Zones		X
Floodplains		X	Wild & Scenic Rivers		X
Invasive Weeds	X		Wilderness		X

The following elements of the human environment, subject to review specified in statute, regulation or executive order, are not located within the project area and are not analyzed further: Ecologically Critical Area, Floodplains, Prime or Unique Farm Lands, Wetlands and Riparian Zones, and Wild and Scenic Rivers.

Air Quality

Within the boundaries of the Serpentine ACEC is the Atlas Asbestos Mine Superfund site. The United States Environmental Protection Agency (EPA) issued a Record of Decision (ROD) selecting a cleanup remedy for the Atlas Asbestos Operable Unit of the Atlas Asbestos Mine Superfund Site on February 14, 1991. This document included four distinct geographical areas including a large portion of CCMA, which was included as part of the Atlas Mine Superfund Site because asbestos mining and milling waste has been transported throughout the CCMA by wind, water, and vehicular traffic. Rather than specify a clean-up method for the CCMA, the Atlas ROD (1991) stated that EPA would evaluate whether amendments to BLM's land use plan for CCMA would minimize airborne asbestos emissions enough to protect of human health and the environment.

Surface disturbance, primarily from vehicle use on the unpaved roads in this area, generates asbestos emissions that can exceed the EPA Superfund Program's acceptable risk range for asbestos (defined as 10^{-4} (1 in 10,000) to 10^{-6} (1 in 1,000,000) excess lifetime cancer risk), and the Occupational Safety and Health Administration (OSHA) standards (0.1fiber/cc) for the Personal Exposure Level (PEL) to chrysotile asbestos.

The project area is accessed from the unpaved Clear Creek Road, which has been sampled and shown to contain asbestos levels between 4% -- 10%. Use of this road can generate asbestos emissions in excess of the OSHA PEL, and the National Emission Standards for Hazardous Air Pollutants (NESHAPS) includes an asbestos standard. However, this standard pertains only to asbestos mining and milling operations and does not set any airborne "threshold" for acceptable levels of airborne asbestos. Nevertheless, BLM must conform to the Asbestos Air Toxic Control Measure (ATCM) adopted by the MBUAPCD, relating to road construction and maintenance operations and the control of airborne asbestos emissions in CCMA.

Geology and Soils

At the proposed site, the Etchegoin Formation of Pliocene age is exposed, and is underlain by the Panoche Formation (upper Cretaceous). The Panoche Formation (Fm.) has been subdivided by Dibblee (1969) into three units, an upper unit of clay-shale, a middle unit of sandstone and a lower unit of conglomerate. The clay-shale unit is mapped east of the proposed site, upstream in Clear Creek Canyon. The Panoche Fm. in this locality has been structurally deformed into a synclinal structure that has its axis trending southeast-northwest, and crosses beneath San Benito Creek just south of the site, where it bends northward in section 17, T. 18 S., R. 11 E.

Soil series within the project area consists of Gaviota loam. The soil is well-drained. Runoff is medium to rapid. Hazard of erosion is moderate to severe.

Surface and Ground Water Quality

Surface Water

The proposed project site is adjacent to Clear Creek, a tributary of the San Benito River that flows from southeast to northwest, and feeds into Hernandez Reservoir about 1 ½ miles northwest of the site. The proposed facility would be located on the north side of Clear Creek Road, approximately 1 mile east of the junction of the confluence of San Benito River and Clear Creek. There are two unnamed drainages that feed into Clear Creek from the proposed project location. However, average annual precipitation does not support surface water flow in these unnamed drainages, and culverts would be installed to accommodate run-off during extreme weather events.

The State of California Regional Water Control Boards (RWCB) with jurisdiction over water resources in the CCMA, as authorized by the Environmental Protection Agency under the Clean Water Act (CWA) are: the Central Valley Regional Water Control Board and the Central Coast Regional Water Control Board.

In 2002, the California Water Resources Control Board listed Clean Water Act Section 303 (d) Water Quality Limited Segments for the following streams; Clear Creek (mercury), San Benito River (fecal coliform and sedimentation), and Hernandez Reservoir (mercury).

Ground Water

Stream flow from the San Benito River recharges the Panoche Fm. sandstone beds. Although not exposed at the surface, the sandstone unit boundary of the Panoche Formation swings northwest under the San Benito River less than a quarter-mile west of the proposed site, and is mapped extending northward along Byles Canyon.

Ground water moves from the higher elevations towards San Benito Creek, driven by a steep hydraulic gradient. An analysis of the drainage patterns and erosional features in aerial photos for the proposed site indicates that the Etchegoin Fm. and the sandstone unit of the Panoche FM. is quite permeable, and it is assumed that recharge from precipitation is a major contributor to the ground water system in this locality.

Cultural Resources and Native American Values

The majority of the CCMA is traditionally within the Costanoan/Ohlone California Indian ethnographic area, but there are also areas within the CCMA that can be ascribed to the Yokuts California Indians, traditionally affiliated with the San Joaquin Valley region. There are no known cultural resources within the immediate project Area of Potential Effect (APE) however there are several prehistoric archeological sites within a quarter-mile of the APE.

Biological Resources

Vegetation

The project area includes oak woodland and chaparral. Oak woodlands are dominated by blue oak (*Quercus douglasii*), valley oak (*Quercus lobata*), and foothill pine (*Pinus sabiniana*). Several large oak trees are located within the project site. They include: one valley oak with a trunk of 5 foot diameter at breast height (DBH) at the south-east corner of the excavated area polygon, three blue oaks of 3.5, 1.5, and 1 foot DBH near the center of the polygon, and four valley oaks south of the polygon in the leach field measuring 3-4 foot DBH, and three blue oaks of 1-2 foot DBH within the proposed east site entrance delineation. Chaparral is dominated by chamise (*Adenostoma fasciculatum*), buckbrush (*Ceanothus cuneatus*), and scrub oak (*Quercus berberidifolia*). A dense cover of California annual grassland dominated by exotic annual grasses and forbs occurs in the woodland understory. Some remnant native bunchgrasses include nodding needlegrass (*Nassella cernua*), creeping wildrye (*Leymus triticoides*), and bluegrass (*Poa secunda*) are occasional in the grassland. The shallow unnamed drainages within the project site do not support riparian vegetation, although riparian vegetation does occur south of the project site along Clear Creek. Riparian vegetation there is dominated by Brewer's willow (*Salix breweri*), hoary coffeeberry (*Rhamnus tomentella*), scratchgrass (*Muhlenbergia asperifolia*), and Guirado's goldenrod (*Solidago guiradonis*).

Invasive, Nonnative Species

Yellow starthistle (*Centaurea solstitialis*) and medusahead grass (*Taeniatherum caput-medusae*) are invasive weeds that are present in and around the project area. Both are rated as 'Highly Invasive' by Cal-IPC and are rated 'Class C' by the CDFA. Both of these weeds may be spread by vehicle traffic. The BLM has been managing these weeds in the project area for 3 years using prescribed burns, mechanical removal, and herbicides. Although the abundance of these species has been greatly reduced, significant populations remain.

Wildlife

The woodlands provide food and cover for many species including elk, deer, feral pigs, gray fox, bobcat, mountain lion, songbirds, raptors, and reptiles. Elk are known to occasionally use the project area and have been seen using Clear Creek in summer. The oaks themselves are important food resources for mule deer (i.e., acorns and browse) and bird nesting habitat. Literature suggests that 30 bird species known to use oak habitats in California include acorns in their diet. Especially common birds in the project area include: California quail, mourning dove, western wood-pewee, ash-throated flycatcher, scrub jay, oak titmouse, Bewick's wren, western bluebird, wren, tit, spotted towhee, California towhee, black–headed grosbeak, and acorn woodpecker. Chaparral habitats support mainly songbirds, small mammals and reptiles. Deer and elk use is less than that of woodlands due to dense shrub and less herbaceous browse.

Fish

Clear Creek and its associated fish populations occur in the project area. The fish assemblage is characterized as freshwater and managed as a wild fishery. Typical species include speckled dace, and California roach. No anadromous fish are present due to Hernandez Reservoir and dry sections of the San Benito River downstream.

Special Status Animals

The following sensitive aquatic animal species occur in serpentine riparian habitat adjacent to the proposed project site: foothill yellow-legged frog (*Rana boylii* – BLM sensitive, USFWS species of concern, DFG sensitive species of concern), Northwestern pond turtle (*Clemmys marmorata* – BLM sensitive, USFWS species of concern, DFG sensitive species of concern), and the two-striped garter snake (*Thamnophis hammondi* – BLM sensitive, DFG sensitive species of concern). The California condor (federally Endangered) is known to fly over the area and may use the project area as foraging habitat. There are no nesting raptors in the vicinity of the project area.

Special Status Plants

One rare species, Indian Valley bush mallow (*Malacothamnus aboriginum*) occurs within the project site. This species is a California Native Plant Society List 1B species (plants that are rare, threatened, or endangered in California and elsewhere). This species, which is a disturbance and fire follower, appeared within the project site after a portion of it was brush mowed for site survey purposes for development. A large population of approximately 80 mature plants occurs on the northern portion of the site, north of the excavated area polygon. The population occupies an area of approximately 7680 square feet. One isolated plant occurs within the northwest corner of the proposed excavated material storage polygon.

The following additional rare species are known to occur near, but not within the proposed project site: San Benito evening primrose (*Camissonia benitensis*), slender pentachaeta (*Pentachaeta exilis* ssp. *aeolica*), and stinkbells (*Fritillaria agrestis*). San Benito evening primrose, a federally-listed Threatened species, grows on serpentine stream terraces and moist meadows throughout the CCMA. The proposed project site is not occupied by San Benito evening primrose, nor is it regarded as potential habitat since the site is underlain by nonserpentine Gaviota loam. The nearest San Benito evening primrose occupied and potential habitat is located 0.3 miles to the west (downstream) of the project site, adjacent to Clear Creek. Slender pentachaeta is only known to occur in five locations in Monterey and San Benito counties and is a CNPS List 1B species (plants that are rare, threatened, or endangered in California and elsewhere). The nearest slender pentachaeta occurrence to the project area is 0.2 miles to the west of the project site. Stinkbells is on the CNPS watch list, (List 4 includes species of limited distribution). The nearest known stinkbells population is 0.3 miles to the west of the project site.

Environmental Justice

No minority communities or low income communities are located within or adjacent to the proposed project area.

IV. ENVIRONMENTAL CONSEQUENCES:

A. IMPACTS OF THE PROPOSED ACTION

Air Quality

Studies have been conducted over the past decade by regulatory agencies to determine the impacts to air quality from vehicle use on unpaved roads in natural asbestos areas. The results of these studies indicate that the force of vehicle wheels on the road surface causes pulverization of the serpentine surface material, lifting asbestos fibers up by the passing vehicles and strong air currents, and suspending these particles in the air (EPA, 1989). The quantity of dust emitted depends on vehicle traffic, vehicle weight, the number of wheels per vehicle, vehicle speed, soil moisture, and concentration of asbestos in the soil.

The proposed Decontamination Facility, and the associated decontamination activities, would remove asbestos-laden soils from the undercarriage of vehicles, equipment, and clothing, which would .have major long-term major beneficial impacts to air quality by reducing asbestos emissions from BLM management activities and minimizing transport of asbestos fibers outside CCMA.

The project area is accessed from the unpaved Clear Creek Road, which has been sampled and shown to contain asbestos levels between 4% -- 10%. Use of this road can generate asbestos emissions in excess of EPA's acceptable risk range and the OSHA PEL. Therefore, this road segment (approx 400 feet) would be wetted down frequently during implementation of the proposed action to mitigate dust and reduce asbestos emissions.

Geology and Soils

Approximately 15,750 cubic-yards of topsoil and parent material would be excavated from the footprint of the proposed decontamination facility, then transported, compacted, and capped at the designated storage pile identified on Map 3 in Appendix A.

Soils in the footprint of the proposed decontamination facility would be permanently compacted, while soils in areas surrounding the site's footprint would only be "temporarily compacted" by surface disturbance and compaction. Soil compaction leads to adverse secondary environmental impacts including poor revegetation (inability of plants to become reestablished) and increased runoff (due to decreased infiltration). The project site is underlain by Gaviota loam. Susceptibility of a soil to compaction is primarily dependent upon soil texture, among other factors, such as soil moisture content, chemical properties, and aggregate stability. Soil texture is determined by the relative proportion of sand, silt and clay. Soil loam textures like that of the Gaviota series are in the mid-range of susceptibility to compaction

between sand and clay. Activities associated with construction and operation of the decontamination facility would likely lead to some level of soil compaction, particularly in high-traffic areas. If the soil impacts are not repeated over a long period of time, the soils may be regarded as "temporarily compacted" and can decompact on their own with soil wetting and drying cycles. Therefore, the proposed action would only have long-term adverse impacts on soils within the proposed project site.

Surface and Ground Water Quality

Sedimentation from the denuded areas into Clear Creek (approximately 200 feet downslope) would be a major concern for BLM. However, the materials storage pile would incorporate soil and erosion control features and the facility and be equipped with a storm water drainage system to mitigate potential run-off and sedimentation of the two unnamed drainages into Clear Creek.

Vehicle traffic would be limited to the roads and parking areas identified on Maps 3 and 4 in Appendix A, and all concrete or asphalt surfaces would also be designed to mitigate potential for soil loss and erosion. A surface runoff management plan would also be incorporated into the proposed site plan, as required by the State of California, and all RWCB requirements for grading and permitting of the leach field would be acquired by the Hollister Field Office and incorporated into BLM's operation of the facility.

BLM proposes to contain all wash water from the decontamination facility on-site by utilizing a series of storage tanks to recirculate the water supply necessary for the vehicle wash rack, as described under the proposed action. BLM permits from the RWCB would ensure that operation of the decontamination building's septic system and leach field maintain established water quality standards.

Potential fuels spillage and lubricant leakage would be prevented by implementing procedures outlined in Appendix E, Best Management Practices (BMPs) for fueling and maintain equipment on site. Therefore, the impacts of the proposed water storage system and leach field on surface and ground water resources would be negligible.

Cultural Resources and Native American Values

There are no known Native American traditional use issues within the proposed APE. However there are other cultural resources adjacent to the proposed project area; in particular a prehistoric archeological site (CA-SBn-167) consisting of a lithic flake scatter with reported finished lithic artifacts. Prior to the proposed project surface disturbance and during construction activities if necessary, a qualified archeologist will monitor the proposed site preparation, grading, and construction activities. In the event that any artifacts or other cultural materials are unearthed during project construction then all work will halt in the area of the discovery and a qualified archeologist will evaluate the finding and initiate mitigation measures as needed [ref. Mitigation Measures #8].

Biological Resources

Vegetation

Removal of trees will be avoided where possible, but it is likely that the project would result in the permanent loss of several large oak trees and a number of smaller foothill pines , including one valley oak with a trunk of 5 foot diameter at breast height (DBH) at the south-east corner of the excavated area polygon, three blue oaks of 3.5, 1.5, and 1 foot DBH near the center of the polygon, and four valley oaks south of the polygon in the leach field measuring 3-4 foot DBH, and three blue oaks of 1-2 foot DBH within the proposed east site entrance delineation.

Construction will result in the permanent degradation of herbaceous vegetation and chaparral at the excavation area and associated access roads, as well as the excavation material storage area. Total area of ground disturbance is estimated to be 135,000 ft^2. Although vegetation may eventually reestablish upon the excavation material storage pile, vegetation is not expected to recover in the footprint of the decontamination facility nor access roads as those areas will be covered with base rock and buildings or other infrastructure would be established upon them.

Invasive, Nonnative Species

Yellow starthistle and medusahead grass may increase in disturbed areas. However, re-vegetating disturbed areas with native bunchgrass will provide vegetation that will resist a reinvasion of the site by weeds. Continued implementation of the ongoing yellow starthistle and medusa head grass abatement program would include monitoring and control of any new weed populations.

Special Status Plants

Approximately 1110 square feet of the large Indian Valley Bush Mallow population would be adversely impacted by grading of the excavated area, with at least 20 plants and their habitat permanently lost as a result of the proposed action. The single plant within the excavated material storage polygon will also be permanently adversely impacted through burial and loss of habitat.

There would be no effects to special status plant species, including the San Benito evening primrose. San Benito evening primrose occupied and potential habitat adjacent to Clear Creek would not be impacted by construction or continuing operation of the decontamination facility. Impacts to other species of concern from construction and operation of the facility would be minor, due to possible increased runoff associated with soil compaction and paving. Such activity may increase runoff to Clear Creek, but this slight increase in runoff would be negligible when compared to size of the Clear Creek watershed.

No adverse direct or indirect impacts are anticipated for slender pentachaeta or stinkbells as known populations of those species grow in uplands some distance from the project site.

Wildlife

There would be short-term adverse impacts to wildlife in the proposed project area from site preparation and construction activities, including noise and traffic to and from the site. This type of disturbance and the finished, fenced decontamination facility would permanently modify habitat for wildlife within the three acre project area. Nevertheless, animals that would be temporarily displaced during construction would return to the project area once major construction is complete. No nesting raptors are within ¼ mile of the project area, so no impacts to raptors are anticipated. However, songbirds and other animals that use the oak and foothill pines described under vegetation resources would be adversely impacted from complete removal of trees and brush from the project area. However, these effects would be negligible because they would be localized to the project site and BLM would replace oaks lost trees during implementation of the proposed action.

Special Status Animals

Yellow-legged frogs, two-striped garter snakes, and pond turtles in Clear Creek may be affected by the run-off and sedimentation from the two unnamed drainages that feed into Clear Creek. However the amount of sediment that is expected to be transported is negligible compared to natural background erosion rates.

Environmental Justice

The proposed action would not result in disproportionately high or adverse human health or environmental effects on low-income or minority communities.

B. IMPACTS OF THE NO ACTION ALTERNATIVE

Air Quality

Sampling of the existing administrative site (Section 8) conducted by BLM has shown asbestos contamination that is likely being transported to the site from the Serpentine ACEC. Locating the facility within the CCMA will prevent BLM personnel from transporting asbestos-bearing materials off-site on vehicles and clothing. Under the No Action Alternative, BLM would not construct a new decontamination facility, which would allow off-site transport of asbestos fibers by BLM personnel on vehicles and clothing to continue at existing levels.

Soils

There would be no impacts to soil resources under the no action alternative.

Surface and Ground Water Quality

There would be no impacts to water resources under the no action alternative.

Cultural Resources and Native American Values

There would be no impacts to cultural resources or Native American traditional use values under the No Action alternative.

Biological Resources

There would be no impacts to biological resources under the no action alternative.

Environmental Justice

The no action alternative would not have disproportionately high or adverse human health or environmental effects on low-income or minority populations; but it would generate track-out of asbestos fibers from the Clear Creek Serpentine ACEC consistent with existing use patterns, and continue to perpetuate the associated human health risks from asbestos emissions within the rural communities of southern San Benito County.

C. CUMULATIVE IMPACTS

Cumulative impacts are those impacts on the environment which result "from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions." (40 CFR 1508.7). In this case, past, present, and reasonably foreseeable future actions in the project vicinity include the operation and maintenance of the Clear Creek Asbestos Decontamination Facility.

Naturally occurring asbestos would be present at the site but would be contained in the contaminated portion of the facility. A contractor would be employed for regular disposal of asbestos-contaminated parts of the facility, including the sump in the vehicle wash station(s) and the water storage tanks. Facility design would incorporate measures to contain asbestos residue, and prevent contamination of the "clean" areas.

Sampling of the existing administrative site (Section 8) conducted by BLM has shown asbestos contamination that is likely being transported to the site from the Serpentine ACEC. Locating the facility within the CCMA would prevent BLM personnel from transporting asbestos-bearing materials off-site on vehicles and clothing. Establishing the facility at this location would also allow BLM to consider providing public use of the Clear Creek Asbestos Decontamination Facility to further reduce off-site transport of asbestos fibers on public visitor's vehicles and clothing.

A primary goal of the proposed action is to improve BLM employee's ability to adhere to established health and safety procedures. Facility design would incorporate all applicable health and safety guidelines addressing naturally occurring asbestos. Specialists would be employed in the design and construction as appropriate to ensure these requirements are met or exceeded.

The facility would incorporate design and containment features superior to those of the current administrative site (Section 8). Reducing asbestos dispersal would lead to moderate cumulative benefits to air quality and an improvement in human health risks from exposure to asbestos fibers from CCMA compared to existing conditions.

V. CONSULTATION

BLM contracted services through HDR, Inc. for design and construction of the Clear Creek Asbestos Decontamination Facility.

VI. LIST OF PREPARERS

Paul Summers, BLM Hydrogeologist, National Science and Technology Center
Accompanied in field by:
Glenn Yamashita, BLM Engineer, Bakersfield Field Office
David Slibsager, BLM Hollister Field Office
John Wrobel, BLM CET, Hollister Field Office

Sky Murphy, Environmental Planning Specialist
Ryan O'Dell, Natural Resources Specialist – Botany/Soils
Michael Westphal, Ecologist
Erik Zaborsky, Archeologist

NOTIFICATION

Notification of the proposed action and analysis has been prominently posted in the Hollister Field Office public area and on the Field Office web page during its undertaking.

DOCUMENT REVIEW

Planning and Environmental Coordinator — Date 4/15/2009

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
HOLLISTER FIELD OFFICE

FINDING OF NO SIGNIFICANT IMPACT/DECISION RECORD
Clear Creek Asbestos Decontamination Facility
DOI-BLM-CA-0900-2009-001-EA

DECISION: It is my decision to approve and implement the BLM proposal to construct the Clear Creek Asbestos Decontamination Facility as evaluated in the attached environmental assessment. Measures mitigating project impacts are formulated into the proposed action, incorporated by reference as the decision of the Bureau of Land Management regarding this action. A copy of this Decision Record and attendant conditions shall be in the possession of the on-site operator during all undertakings approved herein.

FINDING OF NO SIGNIFICANT IMPACT: Based on the analysis of potential environmental impacts contained in the attached environmental assessment (DOI-BLM-CA-0900-2009-001-EA), and considering the significance criteria in 40 CFR 1508.27, I have determined that the action will not have a significant effect on the human environment and is not a major federal action. Therefore, preparation of an Environmental Impact Statement (EIS) pursuant to Section 102(2) (c) of the National Environmental Policy Act of 1969 is not required.

RATIONALE FOR DECISION: The proposed action does not result in any unnecessary or undue environmental degradation and is in conformance with the Hollister Resource Management Plan (1984), as amended, the Record of Decision for the CCMA RMP Amendment and Route Designation (2006) and with other applicable law, regulation and policy. My decision is based on these findings, as documented in the attached environmental assessment and the FONSI determination above.

Reviewed by: _____ Environmental Coordinator — Date 4/15/2009

Recommended by: _____ Assistant Field Manager — Date _____

Approved by: for _____ Field Manager, Hollister Field Office — Date 4/15/09

APPEAL:

This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in Title 43 Code of Federal Regulations (CFR) Part 4 and the enclosed Form 1842-1. If an appeal is taken, a notice of appeal must be filed in the Hollister Field Office, Bureau of Land Management, U.S. Department of the Interior, 20 Hamilton Court, California 95023, within 30 days from receipt of this decision. The appellant has the burden of showing that the decision appealed from is in error.

If the appellant wishes to file a petition pursuant to regulation for a stay of the effectiveness of this decision during the time that the appeal is being reviewed by the Board, the petition for a stay must accompany the notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If a stay is requested, the appellant has the burden of proof to demonstrate that a stay should be granted.

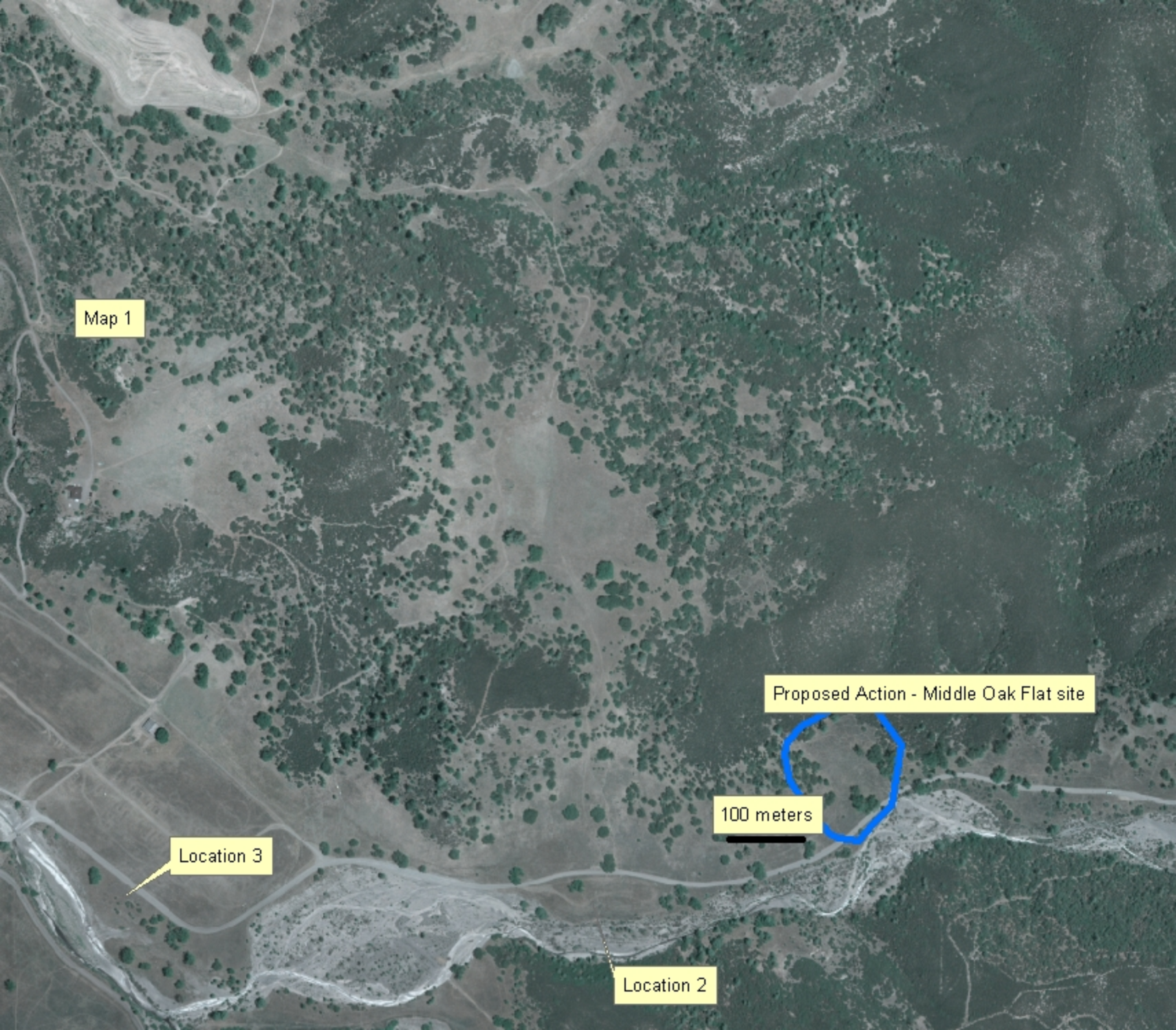
Standards for Obtaining a Stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

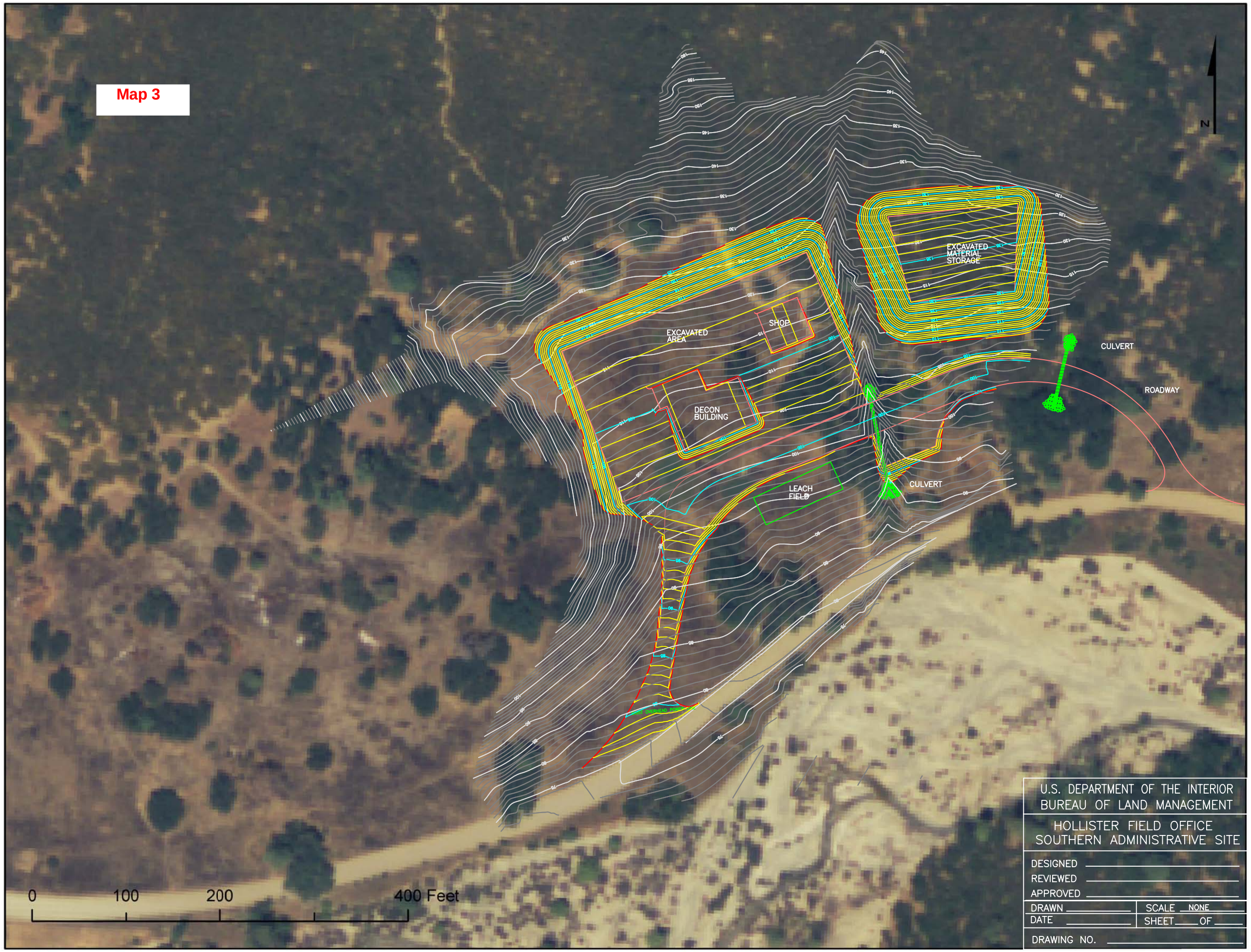
(1) The relative harm to the parties if the stay is granted or denied;
(2) The likelihood of the appellant's success on the merits;
(3) The likelihood of immediate and irreparable harm if the stay is not granted; and
(4) Whether the public interest favors granting the stay

Appendix A

Site Plan/Maps


Map 1
Proposed Action - Middle Oak Flat site
100 meters
Location 3
Location 2


Map 2
Proposed Action - Middle Oak Flat site
100 meters



U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

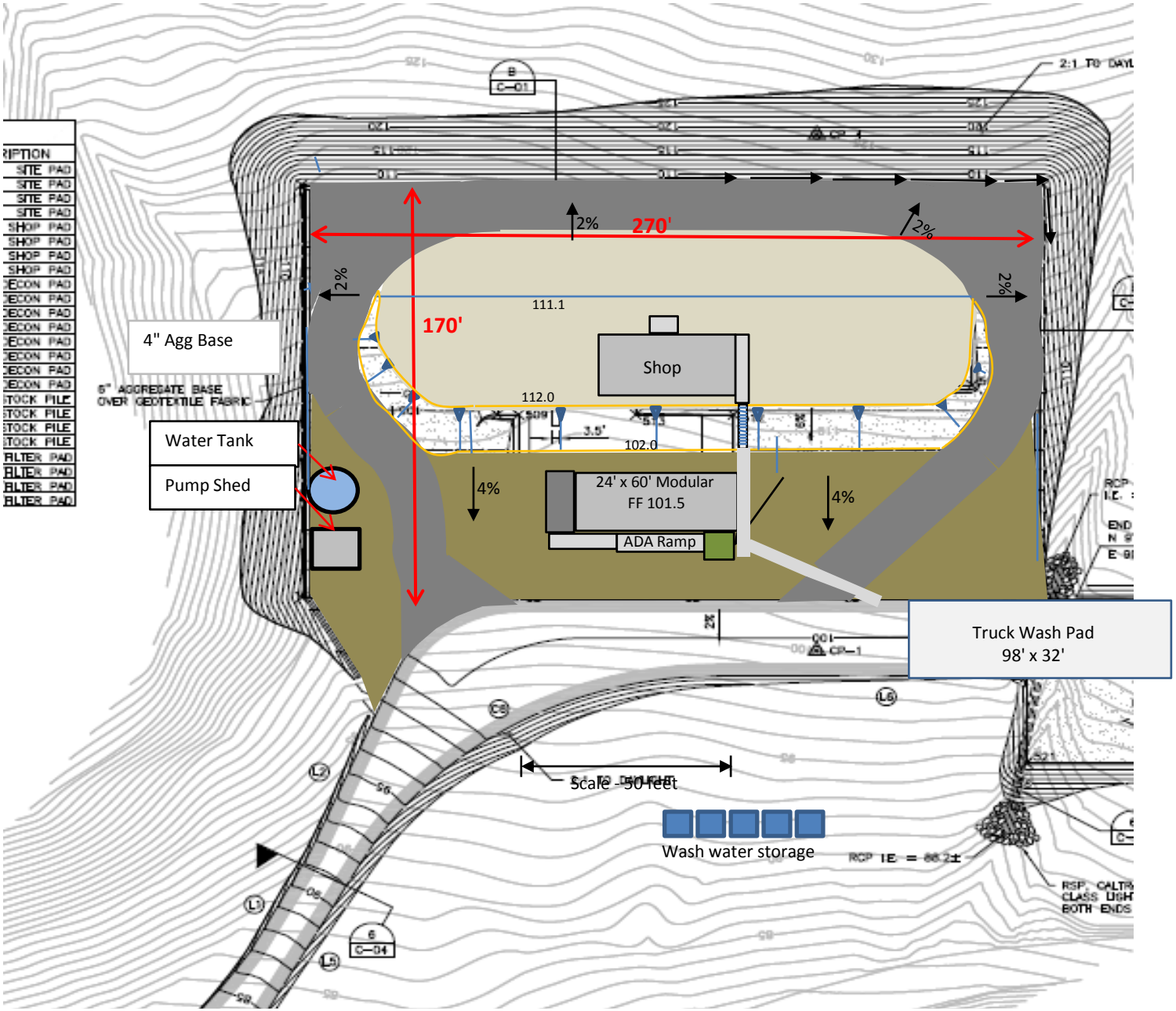
HOLLISTER FIELD OFFICE
SOUTHERN ADMINISTRATIVE SITE

DESIGNED _____
REVIEWED _____
APPROVED _____

DRAWN _____ SCALE NONE
DATE _____ SHEET ___ OF ___

DRAWING NO. _____

Map 4


270'
170'
2%
111.1
112.0
102.0
3.5'
Shop
4" Agg Base
6" AGGREGATE BASE
OVER GEOTEXTILE FABRIC
Water Tank
Pump Shed
24' x 60' Modular
FF 101.5
ADA Ramp
4%
4%
Truck Wash Pad
98' x 32'
Scale - 50 feet
Wash water storage
2:1 TO DAYL

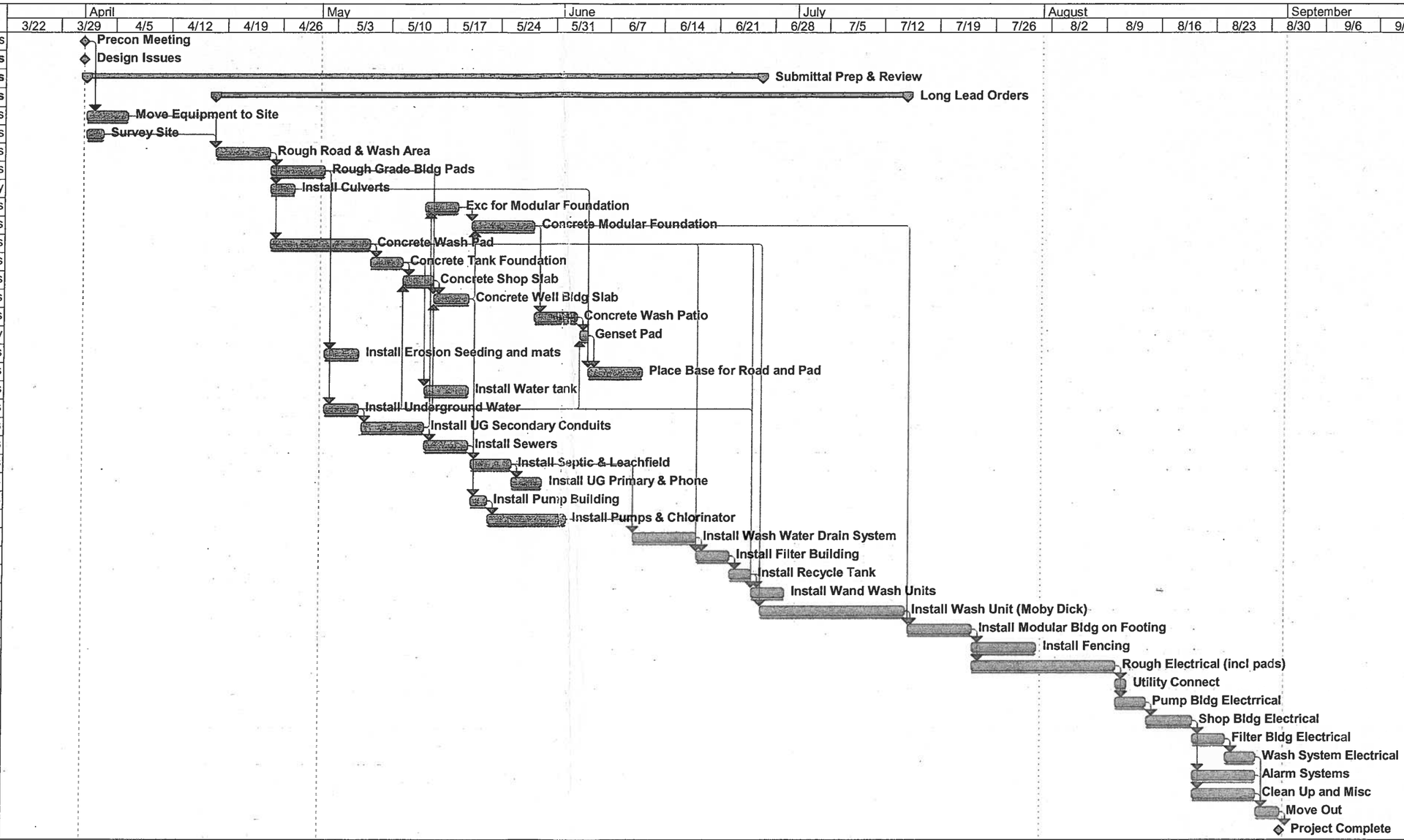

C1
EXIST OVERHEAD POWER LINE
OB
C2
N 1206.35
E 1199.80
CONFORM TO EXISTING
OB
OB
CP-2

Appendix B

Schedule of Activities

US Department of the Interior
Bureau of Land Management
Clear Creek Asbestos Decontamination Facility

ID	Task Name	Duration
1	Precon Meeting	0 days
2	**Design Issues**	**0 days**
4	**Submittal Prep & Review**	**50 days**
28	**Long Lead Orders**	**50 days**
41	Move Equipment to Site	3 days
42	Survey Site	2 days
43	Rough Road & Wash Area	4 days
44	Rough Grade Bldg Pads	4 days
45	Install Culverts	1 day
46	Exc for Modular Foundation	2 days
47	Concrete Modular Foundation	5 days
48	Concrete Wash Pad	7 days
49	Concrete Tank Foundation	2 days
50	Concrete Shop Slab	3 days
51	Concrete Well Bldg Slab	2 days
52	Concrete Wash Patio	3 days
53	Genset Pad	1 day
54	Install Erosion Seeding and mats	2 days
55	Place Base for Road and Pad	4 days
56	Install Water tank	3 days
57	Install Underground Water	2 days
58	Install UG Secondary Conduits	5 days
59	Install Sewers	3 days
60	Install Septic & Leachfield	3 days
61	Install UG Primary & Phone	3 days
62	Install Pump Building	2 days
63	Install Pumps & Chlorinator	5 days
64	Install Wash Water Drain System	5 days
65	Install Filter Building	2 days
66	Install Recycle Tank	2 days
67	Install Wand Wash Units	2 days
68	Install Wash Unit (Moby Dick)	10 days
69	Install Modular Bldg on Footing	5 days
70	Install Fencing	5 days
71	Rough Electrical (incl pads)	10 days
72	Utility Connect	1 day
73	Pump Bldg Electrrical	3 days
74	Shop Bldg Electrical	3 days
75	Filter Bldg Electrical	2 days
76	Wash System Electrical	3 days
77	Alarm Systems	5 days
78	Clean Up and Misc	5 days
79	Move Out	1 day
80	Project Complete	0 days



Erick Ammon, Inc.
Baseline Schedule 3-23-09

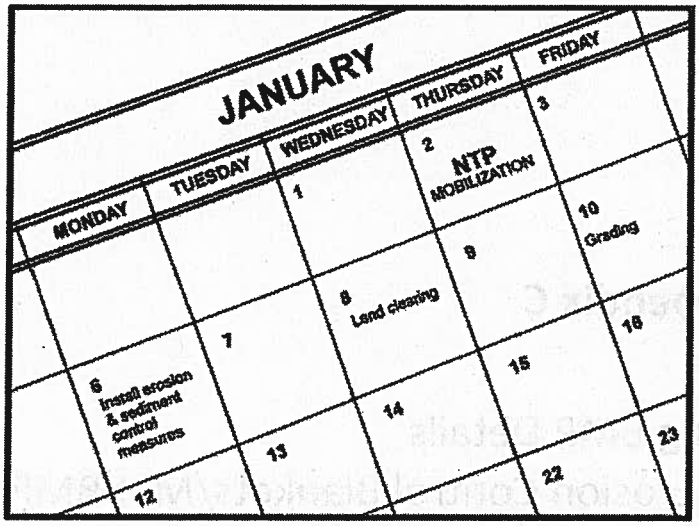
Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

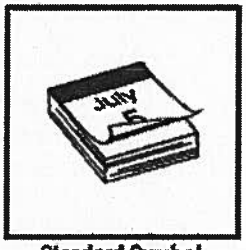
Appendix C

Scheduling BMP Details
Geotextiles, Plastic Covers & Erosion Control Blankets/Mat BMP Details
Earth Dikes/Drainage Swales and Lined Ditches BMP Details
Fiber Rolls BMP Details

Scheduling

SS-1





Standard Symbol

BMP Objectives

- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

Definition and Purpose

This best management practice (BMP) involves developing, for every project, a schedule that includes sequencing of construction activities with the implementation of construction site BMPs such as temporary soil stabilization (erosion control) and temporary sediment controls measures. The purpose is to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

Appropriate Applications

Construction sequencing shall be scheduled to minimize land disturbance for all projects during the rainy and non-rainy season. Appropriate BMPs shall be implemented during both rainy and non-rainy seasons.

Limitations

None identified.

Standards and Specifications

- Developing a schedule and planning the project are the very first steps in an effective storm water program. The schedule shall clearly show how the rainy season relates to soil-disturbing and re-stabilization activities. The construction schedule shall be incorporated into the SWPPP or WPCP.
- The schedule shall include detail on the rainy season implementation and deployment of:
  - Temporary soil stabilization BMPs.
  - Temporary sediment control BMPs.
  - Tracking control BMPs.
  - Wind erosion control BMPs.

- Non-storm water BMPs.
- Waste management and materials pollution control BMPs.

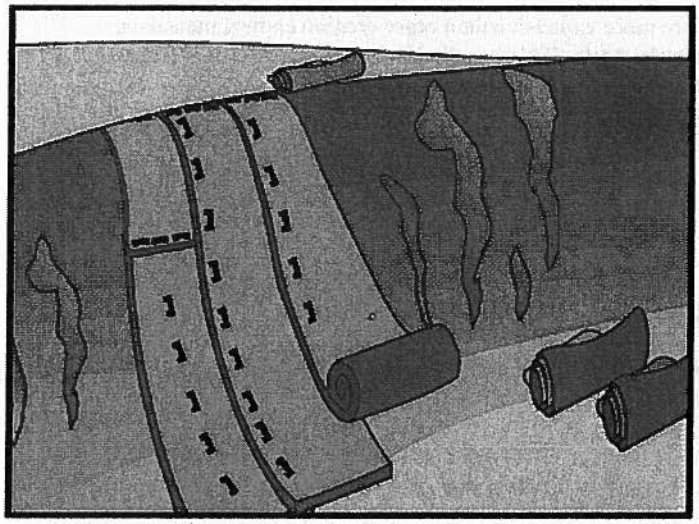
- Schedule shall also include dates for significant long-term operations or activities that may have planned non-storm water discharges such as dewatering, sawcutting, grinding, drilling, boring, crushing, blasting, painting, hydro-demolition, mortar mixing, bridge cleaning, etc.
- Schedule work to minimize soil disturbing activities during the rainy season.
- Develop the sequencing and timetable for the start and completion of each item such as site clearing and grubbing, grading, excavation, paving, pouring foundations, installing utilities, etc., to minimize the active construction area during the rainy season.
- Schedule major grading operations for the non-rainy season when practical.
- Stabilize non-active areas within 14 days from the cessation of soil-disturbing activities or one day prior to the onset of precipitation, whichever occurs first.
- Monitor the weather forecast for rainfall.
- When rainfall is predicted, adjust the construction schedule to allow the implementation of soil stabilization and sediment controls and sediment treatment controls on all disturbed areas prior to the onset of rain.
- Be prepared year-round to deploy soil stabilization and sediment control practices as required by Section 2 of this Manual. Erosion may be caused during dry seasons by unseasonal rainfall, wind, and vehicle tracking. Keep the site stabilized year-round, and retain and maintain rainy season sediment trapping devices in operational condition.
- Sequence trenching activities so that most open portions are closed before new trenching begins.
- Incorporate staged seeding and re-vegetation of graded slopes as work progresses.
- Consider scheduling when establishing permanent vegetation (appropriate planting time for specified vegetation).
- Apply permanent erosion control to areas deemed substantially complete during the project's defined seeding window.

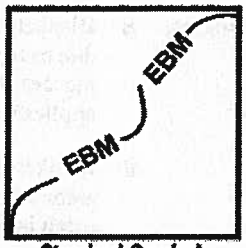
Maintenance and Inspection

- Verify that work is progressing in accordance with the schedule. If progress deviates, take corrective actions.
- Amend the schedule when changes are warranted or when directed by the Resident Engineer (RE).
- The Special Provisions require annual submittal of a rainy season implementation schedule. Amend the schedule prior to the rainy season to show updated information on the deployment and implementation of construction site BMPs.

Geotextiles, Mats, Plastic Covers and Erosion Control Blankets

SS-7





Standard Symbol

BMP Objectives
- ● Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ● Wind Erosion Control
- ○ Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

This Best Management Practice (BMP) involves the placement of geotextiles, mats, plastic covers, or erosion control blankets to stabilize disturbed soil areas and protect soils from erosion by wind or water. This is one of five temporary soil stabilization alternatives to consider.

Appropriate Applications

These measures are used when disturbed soils may be particularly difficult to stabilize, including the following situations:

- Steep slopes, generally steeper than 1:3 (V:H).
- Slopes where the erosion potential is high.
- Slopes and disturbed soils where mulch must be anchored.
- Disturbed areas where plants are slow to develop.
- Channels with flows exceeding 1.0 m/s (3.3 ft/s).
- Channels to be vegetated.
- Stockpiles.
- Slopes adjacent to water bodies of Environmentally Sensitive Areas (ESAs).

Geotextiles, Mats, Plastic Covers and Erosion Control Blankets

SS-7

Limitations

- Blankets and mats are more expensive than other erosion control measures, due to labor and material costs. This usually limits their application to areas inaccessible to hydraulic equipment, or where other measures are not applicable, such as channels.
- Blankets and mats are generally not suitable for excessively rocky sites, or areas where the final vegetation will be mowed (since staples and netting can catch in mowers).
- Blankets and mats must be removed and disposed of prior to application of permanent soil stabilization measures.
- Plastic sheeting is easily vandalized, easily torn, photodegradable, and must be disposed of at a landfill.
- Plastic results in 100% runoff, which may cause serious erosion problems in the areas receiving the increased flow.
- The use of plastic shall be limited to covering stockpiles, or very small graded areas for short periods of time (such as through one imminent storm event), until alternative measures, such as seeding and mulching, may be installed.
- Geotextiles, mats, plastic covers, and erosion control covers have maximum flow rate limitations; consult the manufacturer for proper selection.

Standards and Specifications

Material Selection

There are many types of erosion control blankets and mats, and selection of the appropriate type shall be based on the specific type of application and site conditions. Selection(s) made by the Contractor must be approved by the Resident Engineer (RE); certification of compliance shall be in accordance with Standard Specifications Section 6-1.07.

Geotextiles

- Material shall be a woven polypropylene fabric with minimum thickness of 1.5 mm (0.06 inch), minimum width of 3.7 m (12 ft) and shall have minimum tensile strength of 0.67 kN (warp) 0.36 kN (fill) in conformance with the requirements in ASTM Designation: D 4632. The permittivity of the fabric shall be approximately 0.07 sec –1 in conformance with the requirements in ASTM Designation: D4491. The fabric shall have an ultraviolet (UV) stability of 70 percent in conformance with the requirements in ASTM designation: D4355. Geotextile blankets shall be secured in place with wire staples or sandbags and by keying into tops of slopes and edges to prevent infiltration of surface waters under Geotextile. Staples shall be made of 3.05-mm (0.12-inch) steel wire and shall be U-shaped with 200-mm (8-inch) legs and 50-mm (2-inch) crown.
- Geotextiles may be reused if, in the opinion of the RE, they are suitable for the use intended.

Geotextiles, Mats, Plastic Covers and Erosion Control Blankets

SS-7

Plastic Covers

- Plastic sheeting shall have a minimum thickness of 6 mil, and shall be keyed in at the top of slope and firmly held in place with sandbags or other weights placed no more than 3 m (10 ft) apart. Seams are typically taped or weighted down their entire length, and there shall be at least a 300 mm to 600 mm (12 to 24 inches) overlap of all seams. Edges shall be embedded a minimum of 150 mm (6 inches) in soil.

- All sheeting shall be inspected periodically after installation and after significant rainstorms to check for erosion, undermining, and anchorage failure. Any failures shall be repaired immediately. If washout or breakages occurs, the material shall be re-installed after repairing the damage to the slope.

Erosion Control Blankets/Mats

- Biodegradable rolled erosion control products (RECPs) are typically composed of jute fibers, curled wood fibers, straw, coconut fiber, or a combination of these materials. For an RECP to be considered 100% biodegradable, the netting, sewing or adhesive system that holds the biodegradable mulch fibers together must also be biodegradable.

  - **Jute** is a natural fiber that is made into a yarn, which is loosely woven into a biodegradable mesh. It is designed to be used in conjunction with vegetation and has longevity of approximately one year. The material is supplied in rolled strips, which shall be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Excelsior (curled wood fiber)** blanket material shall consist of machine produced mats of curled wood excelsior with 80 percent of the fiber 150 mm (6 inches) or longer. The excelsior blanket shall be of consistent thickness. The wood fiber shall be evenly distributed over the entire area of the blanket. The top surface of the blanket shall be covered with a photodegradable extruded plastic mesh. The blanket shall be smolder resistant without the use of chemical additives and shall be non-toxic and non-injurious to plant and animal life. Excelsior blanket shall be furnished in rolled strips, a minimum of 1220 mm (48 inches) wide, and shall have an average weight of 0.5 kg/m^2 (12 lb/ft^2), ±10 percent, at the time of manufacture. Excelsior blankets shall be secured in place with wire staples. Staples shall be made of 3.05-mm (0.12 inch) steel wire and shall be U-shaped with 200-mm (8-inch) legs and 50-mm (2-inch) crown.

Geotextiles, Mats, Plastic Covers and Erosion Control Blankets

SS-7

- **Straw blanket** shall be machine-produced mats of straw with a lightweight biodegradable netting top layer. The straw shall be attached to the netting with biodegradable thread or glue strips. The straw blanket shall be of consistent thickness. The straw shall be evenly distributed over the entire area of the blanket. Straw blanket shall be furnished in rolled strips a minimum of 2 m (6.5 ft) wide, a minimum of 25 m (80 ft) long and a minimum of 0.27 kg/m2 (6.4 lb/ft2). Straw blankets shall be secured in place with wire staples. Staples shall be made of 3.05-mm (0.12 inch) steel wire and shall be U-shaped with 200-mm (8-inch) legs and 50-mm (2-inch) crown.

- **Wood fiber blanket** is composed of biodegradable fiber mulch with extruded plastic netting held together with adhesives. The material is designed to enhance revegetation. The material is furnished in rolled strips, which shall be secured to the ground with U-shaped staples or stakes in accordance with manufacturers' recommendations.

- **Coconut fiber blanket** shall be machine-produced mats of 100% coconut fiber with biodegradable netting on the top and bottom. The coconut fiber shall be attached to the netting with biodegradable thread or glue strips. The coconut fiber blanket shall be of consistent thickness. The coconut fiber shall be evenly distributed over the entire area of the blanket. Coconut fiber blanket shall be furnished in rolled strips with a minimum of 2 m (6.5 ft) wide, a minimum of 25 m (80 ft) long and a minimum of 0.27-kg/m2 (6.4 lb/ft2). Coconut fiber blankets shall be secured in place with wire staples. Staples shall be made of 3.05-mm (0.12 inch) steel wire and shall be U-shaped with 200-mm (8-inch) legs and 50-mm (2-inch) crown.

- **Coconut fiber mesh** is a thin permeable membrane made from coconut or corn fiber that is spun into a yarn and woven into a biodegradable mat. It is designed to be used in conjunction with vegetation and typically has longevity of several years. The material is supplied in rolled strips, which shall be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

- **Straw coconut fiber blanket** shall be machine-produced mats of 70% straw and 30% coconut fiber with a biodegradable netting top layer and a biodegradable bottom net. The straw and coconut fiber shall be attached to the netting with biodegradable thread or glue strips. The straw coconut fiber blanket shall be of consistent thickness. The straw and coconut fiber shall be evenly distributed over the entire area of the blanket. Straw coconut fiber blanket shall be furnished in rolled strips a minimum of 2 m (6.5 ft) wide, a minimum of 25 m (80 ft) long and a minimum of 0.27 kg/m2 (6.4 lb/ft2). Straw coconut fiber blankets shall be secured in place with wire staples. Staples shall be made of 3.05-mm (0.12-inch) steel wire and shall be U-shaped with 200-mm (8-inch) legs and 50-mm (2-inch) crown.

Geotextiles, Mats, Plastic Covers and Erosion Control Blankets

SS-7

- Non-biodegradable RECPs are typically composed of polypropylene, polyethylene, nylon or other synthetic fibers. In some cases, a combination of biodegradable and synthetic fibers is used to construct the RECP. Netting used to hold these fibers together is typically non-biodegradable as well.

  - **Plastic netting** is a lightweight biaxially-oriented netting designed for securing loose mulches like straw to soil surfaces to establish vegetation. The netting is photodegradable. The netting is supplied in rolled strips, which shall be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Plastic mesh** is an open-weave geotextile that is composed of an extruded synthetic fiber woven into a mesh with an opening size of less than 0.5 cm (0.2 inch). It is used with revegetation or may be used to secure loose fiber such as straw to the ground. The material is supplied in rolled strips, which shall be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Synthetic fiber with netting** is a mat that is composed of durable synthetic fibers treated to resist chemicals and ultraviolet light. The mat is a dense, three-dimensional mesh of synthetic (typically polyolefin) fibers stitched between two polypropylene nets. The mats are designed to be revegetated and provide a permanent composite system of soil, roots, and geomatrix. The material is furnished in rolled strips, which shall be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Bonded synthetic fibers** consist of a three-dimensional geomatrix nylon (or other synthetic) matting. Typically it has more than 90% open area, which facilitates root growth. Its tough root-reinforcing system anchors vegetation and protects against hydraulic lift and shear forces created by high volume discharges. It can be installed over prepared soil, followed by seeding into the mat. Once vegetated, it becomes an invisible composite system of soil, roots, and geomatrix. The material is furnished in rolled strips that shall be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Combination synthetic and biodegradable RECPs** consist of biodegradable fibers, such as wood fiber or coconut fiber, with a heavy polypropylene net stitched to the top and a high-strength continuous-filament geomatrix or net stitched to the bottom. The material is designed to enhance revegetation. The material is furnished in rolled strips, which shall be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

Geotextiles, Mats, Plastic Covers and Erosion Control Blankets

SS-7

Site Preparation

- Proper site preparation is essential to ensure complete contact of the blanket or matting with the soil.
- Grade and shape the area of installation.
- Remove all rocks, clods, vegetation or other obstructions so that the installed blankets or mats will have complete, direct contact with the soil.
- Prepare seedbed by loosening 50 mm (2 in) to 75 mm (3 in) of topsoil.

Seeding

Seed the area before blanket installation for erosion control and revegetation. Seeding after mat installation is often specified for turf reinforcement application. When seeding prior to blanket installation, all check slots and other areas disturbed during installation must be re-seeded. Where soil filling is specified, seed the matting and the entire disturbed area after installation and prior to filling the mat with soil.

Anchoring

- U-shaped wire staples, metal geotextile stake pins or triangular wooden stakes can be used to anchor mats and blankets to the ground surface.
- Staples shall be made of 3.05 mm (0.12 inch) steel wire and shall be U-shaped with 200-mm (8-inch) legs and 50-mm (2-inch) crown.
- Metal stake pins shall be 5 mm (0.188 in) diameter steel with a 40 mm (1.5 in) steel washer at the head of the pin.
- Wire staples and metal stakes shall be driven flush to the soil surface.
- All anchors shall be 150 mm (6 in) to 450 mm (18 in) long and have sufficient ground penetration to resist pullout. Longer anchors may be required for loose soils.

Installation on Slopes

Installation shall be in accordance with the manufacturer's recommendations. In general, these will be as follows:

- Begin at the top of the slope and anchor the blanket in a 150 mm (6 in) deep by 150 mm (6 in) wide trench. Backfill trench and tamp earth firmly.
- Unroll blanket downslope in the direction of water flow.

- Overlap the edges of adjacent parallel rolls 50 mm (2 in) to 75 mm (3 in) and staple every 1 m (3 ft).
- When blankets must be spliced, place blankets end over end (shingle style) with 150 mm (6 in) overlap. Staple through overlapped area, approximately 300 mm (12 in) apart.
- Lay blankets loosely and maintain direct contact with the soil. Do not stretch.
- Staple blankets sufficiently to anchor blanket and maintain contact with the soil. Staples shall be placed down the center and staggered with the staples placed along the edges. Steep slopes, 1:1 (V:H) to 1:2 (V:H), require a minimum of 2 staples/m2 (2 staples/yd2). Moderate slopes, 1:2 (V:H) to 1:3 (V:H), require a minimum of 1½ staples/m2 (1 ½ staples/yd2), placing 1 staple/m (1 staple/yd) on centers. Gentle slopes require a minimum of 1 staple/m2 (1 staple/yd2).

Installation in Channels

Installation shall be in accordance with the manufacturer's recommendations. In general, these will be as follows:

- Dig initial anchor trench 300 mm (12 in) deep and 150 mm (6 in) wide across the channel at the lower end of the project area.
- Excavate intermittent check slots, 150 mm (6 in) deep and 150 mm (6 in) wide across the channel at 8 m to 10 m (25 ft to 30 ft) intervals along the channels.
- Cut longitudinal channel anchor slots 100 mm (4 in) deep and 100 mm (4 in) wide along each side of the installation to bury edges of matting, whenever possible extend matting 50 mm (2 in) to 75 mm (3 in) above the crest of the channel side slopes.
- Beginning at the downstream end and in the center of the channel, place the initial end of the first roll in the anchor trench and secure with fastening devices at 300 mm (12 in) intervals. Note: matting will initially be upside down in anchor trench.
- In the same manner, position adjacent rolls in anchor trench, overlapping the preceding roll a minimum of 75 mm (3 in).
- Secure these initial ends of mats with anchors at 300 mm (12 in) intervals, backfill and compact soil.
- Unroll center strip of matting upstream. Stop at next check slot or terminal anchor trench. Unroll adjacent mats upstream in similar fashion, maintaining a 75 mm (3 in) overlap.

- Fold and secure all rolls of matting snugly into all transverse check slots. Lay mat in the bottom of the slot then fold back against itself. Anchor through both layers of mat at 300 mm (12 in) intervals, then backfill and compact soil. Continue rolling all mat widths upstream to the next check slot or terminal anchor trench.
- Alternate method for non-critical installations: Place two rows of anchors on 150 mm (6 in) centers at 8 m (25 ft) to 10 m (30 ft) intervals in lieu of excavated check slots.
- Shingle-lap spliced ends by a minimum of 300 mm (12 in) apart on 300 mm (12 in) intervals.
- Place edges of outside mats in previously excavated longitudinal slots, anchor using prescribed staple pattern, backfill and compact soil.
- Anchor, fill and compact upstream end of mat in a 300 mm (12 in) by 150 mm (6 in) terminal trench.
- Secure mat to ground surface using U-shaped wire staples, geotextile pins, or wooden stakes.
- Seed and fill turf reinforcement matting with soil, if specified.

Soil Filling (if specified for turf reinforcement)

- Always consult the manufacturer's recommendations for installation.
- Do not drive tracked or heavy equipment over mat.
- Avoid any traffic over matting if loose or wet soil conditions exist.
- Use shovels, rakes or brooms for fine grading and touch up.
- Smooth out soil filling, just exposing top netting of mat.

Temporary Soil Stabilization Removal

- When no longer required for the work, temporary soil stabilization shall become the property of the Contractor. Temporary soil stabilization removed from the site of the work shall be disposed of outside the highway right-of-way in conformance with the provisions in Standard Specifications Section 7-1.13. If approved by the RE, the contractor may leave the temporary soil stabilizer in place.

Geotextiles, Mats, Plastic Covers and Erosion Control Blankets

SS-7

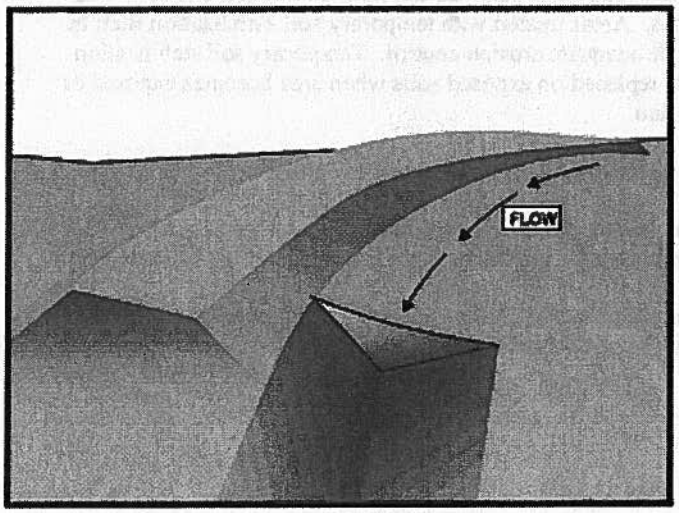
Maintenance and Inspection

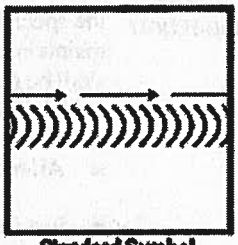
Areas treated with temporary soil stabilization shall be inspected as specified in the special provisions. Areas treated with temporary soil stabilization shall be maintained to provide adequate erosion control. Temporary soil stabilization shall be reapplied or replaced on exposed soils when area becomes exposed or exhibits visible erosion.

- All blankets and mats shall be inspected periodically after installation.
- Installation shall be inspected after significant rain storms to check for erosion and undermining. Any failures shall be repaired immediately.
- If washout or breakage occurs, re-install the material after repairing the damage to the slope or channel.

Earth Dikes/Drainage Swales and Lined Ditches

SS-9





Standard Symbol

BMP Objectives
- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

Definition and Purpose

These are structures that intercept, divert and convey surface run-on, generally sheet flow, to prevent erosion.

Appropriate Applications

- Earth dikes/drainage swales and lined ditches may be used to:
  - Convey surface runoff down sloping land.
  - Intercept and divert runoff to avoid sheet flow over sloped surfaces.
  - Divert and direct runoff towards a stabilized watercourse, drainage pipe or channel.
  - Intercept runoff from paved surfaces.
- Earth dikes/drainage swales and lined ditches also may be used:
  - Below steep grades where runoff begins to concentrate.
  - Along roadways and facility improvements subject to flood drainage.
  - At the top of slopes to divert run-on from adjacent or undisturbed slopes.
  - At bottom and mid-slope locations to intercept sheet flow and convey concentrated flows.
- This BMP may be implemented on a project-by-project basis with other BMPs when determined necessary and feasible by the Resident Engineer (RE).

Earth Dikes/Drainage Swales and Lined Ditches

SS-9

Limitations

- Earth dikes/drainage swales and lined ditches are not suitable as sediment trapping devices.
- May be necessary to use other soil stabilization and sediment controls, such as check dams, plastics, and blankets, to prevent scour and erosion in newly graded dikes, swales and ditches.

Standards and Specifications

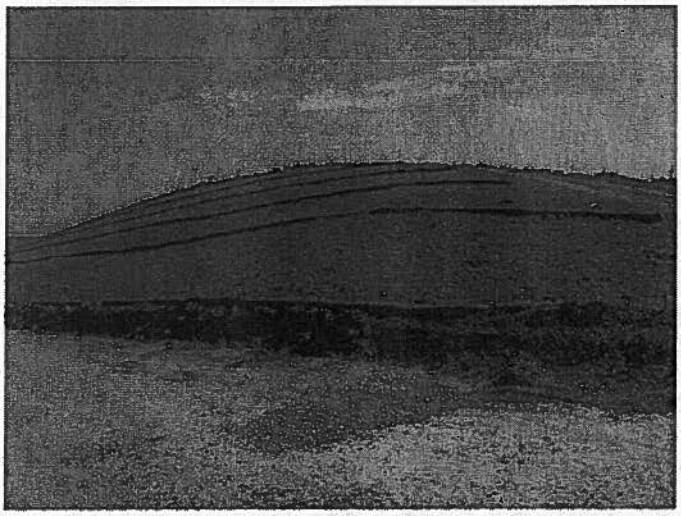
- Care must be applied to correctly size and locate earth dikes, drainage swales and lined ditches. Excessively steep, unlined dikes and swales are subject to erosion and gully formation.
- Conveyances shall be stabilized.
- Use a lined ditch for high flow velocities.
- Select flow velocity based on careful evaluation of the risks due to erosion of the measure, soil types, over topping, flow backups, washout, and drainage flow patterns for each project site.
- Compact any fills to prevent unequal settlement.
- Do not divert runoff from the highway right-of-way onto other property.
- When possible, install and utilize permanent dikes, swales and ditches early in the construction process.
- Provide stabilized outlets. Refer to SS-10, "Outlet Protection/Velocity/ Dissipation Devices."

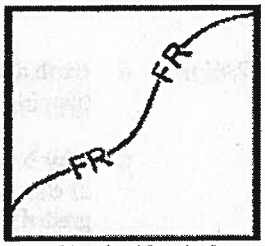
Maintenance and Inspections

- Inspect temporary measures prior to the rainy season, after rainfall events, and regularly (approximately once per week) during the rainy season.
- Inspect ditches and berms for washouts. Replace lost riprap, damaged linings or soil stabilizers as needed.
- Inspect channel linings, embankments, and beds of ditches and berms for erosion and accumulation of debris and sediment. Remove debris and sediment, and repair linings and embankments as needed or as directed by the RE.
- Temporary conveyances shall be completely removed as soon as the surrounding drainage area has been stabilized, or at the completion of construction.

Fiber Rolls

SC-5





Standard Symbol

BMP Objectives

- ● Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

A fiber roll consists of wood excelsior, rice or wheat straw, or coconut fibers that is rolled or bound into a tight tubular roll and placed on the toe and face of slopes to intercept runoff, reduce its flow velocity, release the runoff as sheet flow and provide removal of sediment from the runoff. Fiber rolls may also be used for inlet protection and as check dams under certain situations.

Appropriate Applications

- This BMP may be implemented on a project-by-project basis with other BMPs when determined necessary and feasible by the RE.
- Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
- Below the toe of exposed and erodible slopes.
- Fiber rolls may be used as check dams in unlined ditches if approved by the Resident Engineer (RE) or the District Construction Storm Water Coordinator (refer to SC-4 "Check Dams").
- Fiber rolls may be used for drain inlet protection if approved by the RE or the District Construction Storm Water Coordinator (refer to SC-10 "Storm Drain Inlet Protection").
- Down-slope of exposed soil areas.
- Around temporary stockpiles.
- Along the perimeter of a project.

Fiber Rolls

SC-5

Limitations

- Runoff and erosion may occur if fiber roll is not adequately trenched in.
- Fiber rolls at the toe of slopes greater than 1:5 may require the use of 500 mm (20" diameter) or installations achieving the same protection (i.e., stacked smaller diameter fiber rolls, etc.).
- Fiber rolls may be used for drainage inlet protection if they can be properly anchored.
- Difficult to move once saturated.
- Fiber rolls could be transported by high flows if not properly staked and trenched in.
- Fiber rolls have limited sediment capture zone.
- Do not use fiber rolls on slopes subject to creep, slumping, or landslide.

Standards and Specifications

Fiber Roll Materials

- Fiber rolls shall be either:

  (1) Prefabricated rolls.

  (2) Rolled tubes of erosion control blanket.

Assembly of Field Rolled Fiber Roll

- Roll length of erosion control blanket into a tube of minimum 200 mm (8 in) diameter.
- Bind roll at each end and every 1.2 m (4 ft) along length of roll with jute-type twine.

Installation

- Slope inclination of 1:4 or flatter: fiber rolls shall be placed on slopes 6.0 m apart.
- Slope inclination of 1:4 to 1:2: fiber rolls shall be placed on slopes 4.5 m apart.
- Slope inclination 1:2 or greater: fiber rolls shall be placed on slopes 3.0 m apart.
- Stake fiber rolls into a 50 to 100 mm (2 to 4 in) trench.

- Drive stakes at the end of each fiber roll and spaced 600 mm (2 ft) apart if Type 2 installation is used (refer to Page 4). Otherwise, space stakes 1.2 m (4 ft) maximum on center if installed as shown on Pages 5 and 6.
- Use wood stakes with a nominal classification of 19 by 19 mm (3/4 by 3/4 in), and minimum length of 600 mm (24 in).
- If more than one fiber roll is placed in a row, the rolls shall be overlapped; not abutted.

Removal

- Fiber rolls are typically left in place.
- If fiber rolls are removed, collect and dispose of sediment accumulation, and fill and compact holes, trenches, depressions or any other ground disturbance to blend with adjacent ground.

Maintenance and Inspection

- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- Inspect fiber rolls when rain is forecast. Perform maintenance as needed or as required by the RE.
- Inspect fiber rolls following rainfall events and a least daily during prolonged rainfall. Perform maintenance as needed or as required by the RE.
- Maintain fiber rolls to provide an adequate sediment holding capacity. Sediment shall be removed when the sediment accumulation reaches three quarters (3/4) of the barrier height. Removed sediment shall be incorporated in the project at locations designated by the RE or disposed of outside the highway right-of-way in conformance with the Standard Specifications.

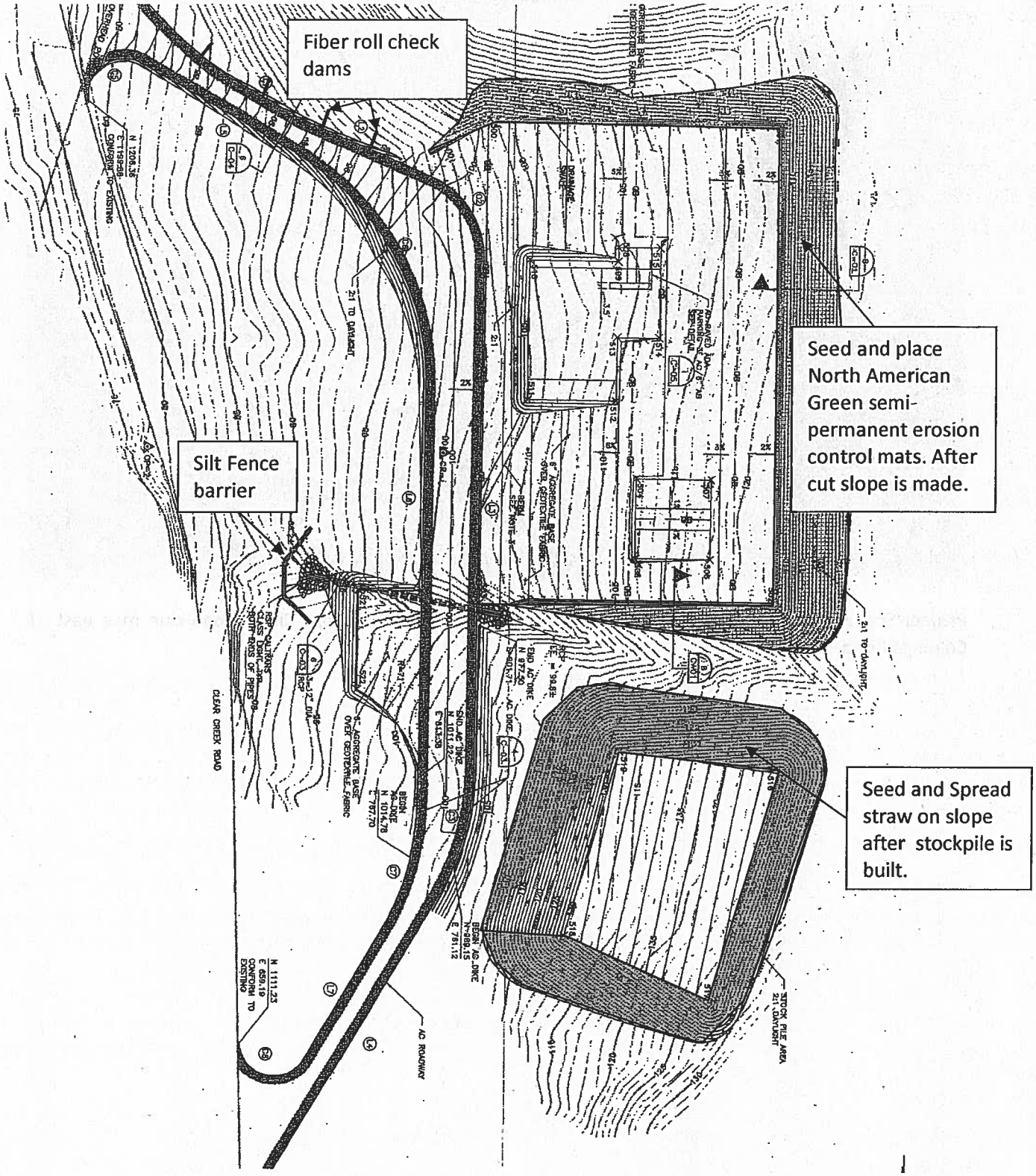
Appendix D

Erosion Control Site Plan
(See Site Plan)

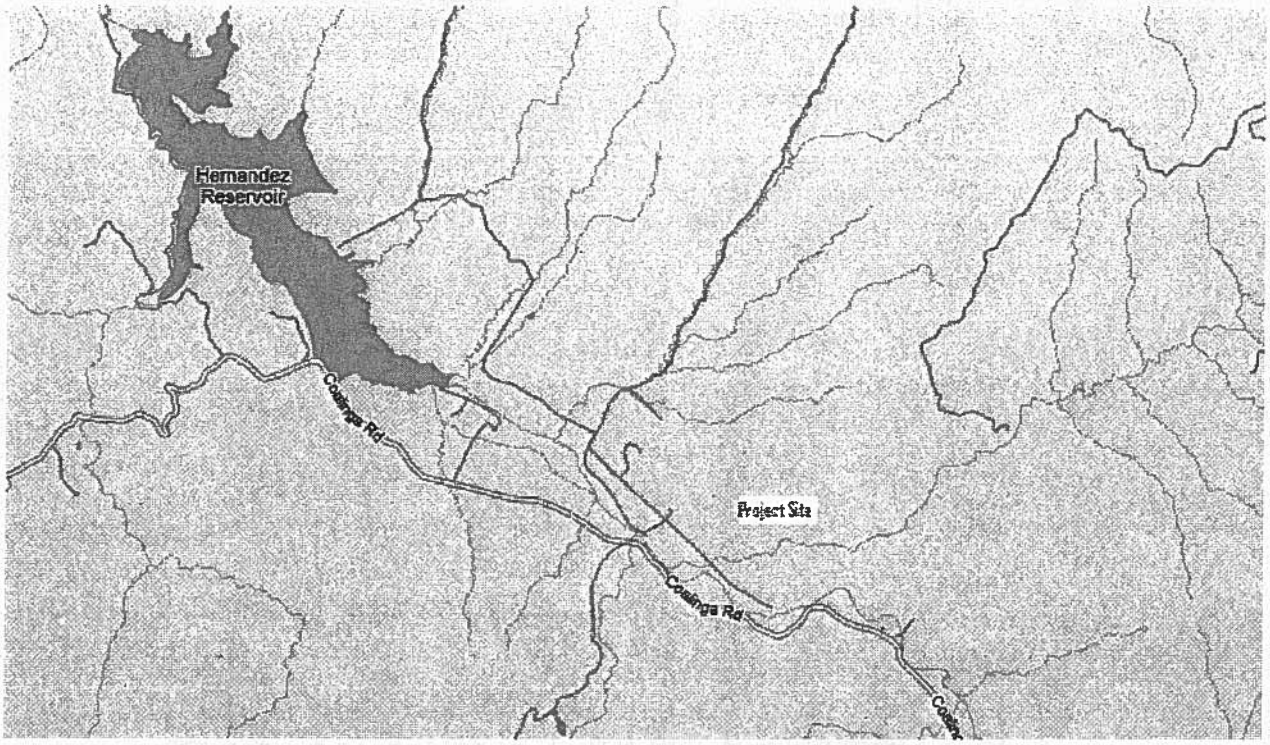
Appendix E

Storm Water BMP Inspection Form

Erosion Control & Site Plan



Project Location



Project Site is located in San Benito County on the north side of Clear Creek Road one mile east of Coalinga Road.