Appendix E
Cultural Resources

Class III Archeological Survey of the Mendota Dam and Downstream Areas, Fresno and Madera Counties, CA

CLASS III ARCHEOLOGICAL SURVEY OF THE MENDOTA DAM AND DOWNSTREAM AREAS, FRESNO AND MADERA COUNTIES, CA

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U.S. Bureau of Reclamation
Sacramento, CA 95825

Date: March 1998
Coverage: ca. 10 acres
USGS Quad: Mendota Dam 7.5, 1956
Keywords: Madera County, Fresno County, Township 13 S, Range 15 E, San Joaquin River, Dam, Henry Miller, Miller & Lux.

Class III Archeological Survey of the Mendota Dam and Downstream Areas, Fresno and Madera Counties, CA

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Introduction

The Bureau of Reclamation in cooperation with the U.S. Fish and Wildlife Service and California Department of Fish and Game want to eliminate the required dewatering of Mendota Pool. This will be accomplished through replacement of the existing Mendota Dam (Figure 1). Currently, Mendota Pool, which stores water that is ultimately delivered to the Mendota Wildlife Area, is routinely dewatered for inspection and maintenance. Therefore, year-round delivery capability does not exist. The new dam would allow for the conveyance of firm, average annual historical water deliveries, in addition to an incremental amount of water supplies required for optimal wildlife management at Mendota Wildlife Area, as required by Title 34 of Public Law 102-575 (Central Valley Project Improvement Act). The agency who will construct the dam has yet to be determined, but in all likelihood, it will be either Reclamation or the Central California Irrigation District.

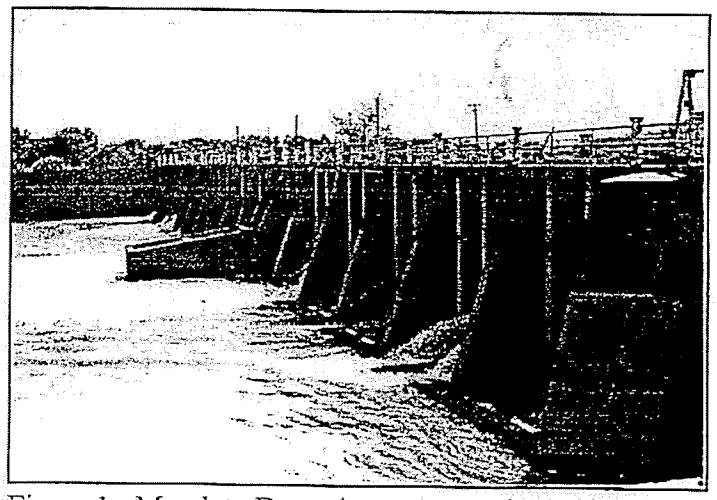


Figure 1. Mendota Dam, downstream view of dam and fish ladder, looking east.

The proposed new dam will be located approximately 400 feet downstream from the existing dam, which will not be removed. The downstream face of Mendota Dam would be flooded and its' gates (wood drop boards) would be removed for fish passage. The proposed new dam will consist of earthen embankments, with a 115-foot wide, eight-bay gated concrete structure near the center of the San Joaquin River channel. The new dam will be designed so that it can be retrofitted with a fish passageway in the future to allow for upstream and downstream movements of anadromous fish. The borrow area for the new dam has not yet been identified.

Maintenance and safety of dams inspections of Mendota Dam and Pool occur on a bi-yearly basis from about November 27 to January 15. If minor dam or pool repairs are required, the pool is kept dewatered until the repairs are made. If the repairs are extensive, the Central California Irrigation District, the owner/operator of the dam, schedules them at another time of the year

when irrigators do not need the water (which requires an additional dewatering and makes less water available for the Mendota Wildlife Area). A new dam would eliminate the dewatering of Mendota Pool, required for inspection and maintenance of existing facilities.

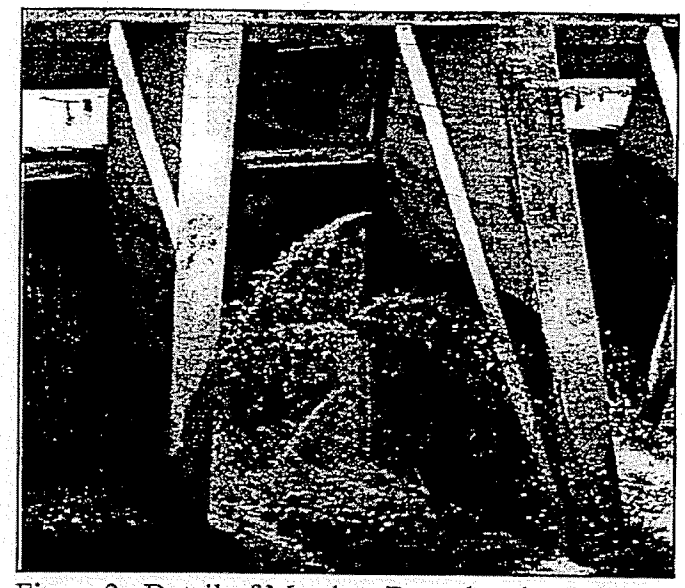


Figure 2. Detail of Mendota Dam showing leaky flash boards.

Mendota Dam leaks extensively (Figure 2); but according to Chris White of the Central California Irrigation District, "leakage from Mendota Dam from January 15th to November 15th does not exceed the irrigation demands of San Luis Canal Company, who diverts their water out of the San Joaquin River at the Sack Dam diversion. In addition, leakage from November 15th to January 15th is also diverted at the Sack Dam by San Luis Canal Company for deliveries to the Fish and Wildlife refuge. At no time is water 'lost' due to leakage through Mendota Dam."

The new dam would increase the capacity of Mendota Pool (currently 3,000 acre-feet) by about 13 acre-feet. The added pool would be 150 feet wide, 400 feet long, and 10 feet deep. The maximum water surface of the pool would not increase. An additional 3 acres of dry land would be inundated by construction of the new dam.

Location and Area of Potential Effect

The project area is located on the San Joaquin River in western Fresno and Madera counties some 2 miles north-northwest of the town of Mendota (Figure 3). The Mendota Dam (Figure 4) backs water up the San Joaquin River and Fresno Slough forming what is termed the Mendota Pool (Figure 5). The area is surrounded by agricultural lands. The Area of Potential Effect (APE) covers about 10 acres, of which about six are covered with water.

Methods

The entire APE that was above water was examined on foot. Bureau of Reclamation records were checked (National Register of Historic Places, California Historical Landmarks, California Inventory of Historic Resources) and library (Reclamation, UC Davis, Personal) research was undertaken. Original dam construction drawings borrowed from the Central California Irrigation District were redrawn and digitized. The irrigation district provided additional information on the dam.

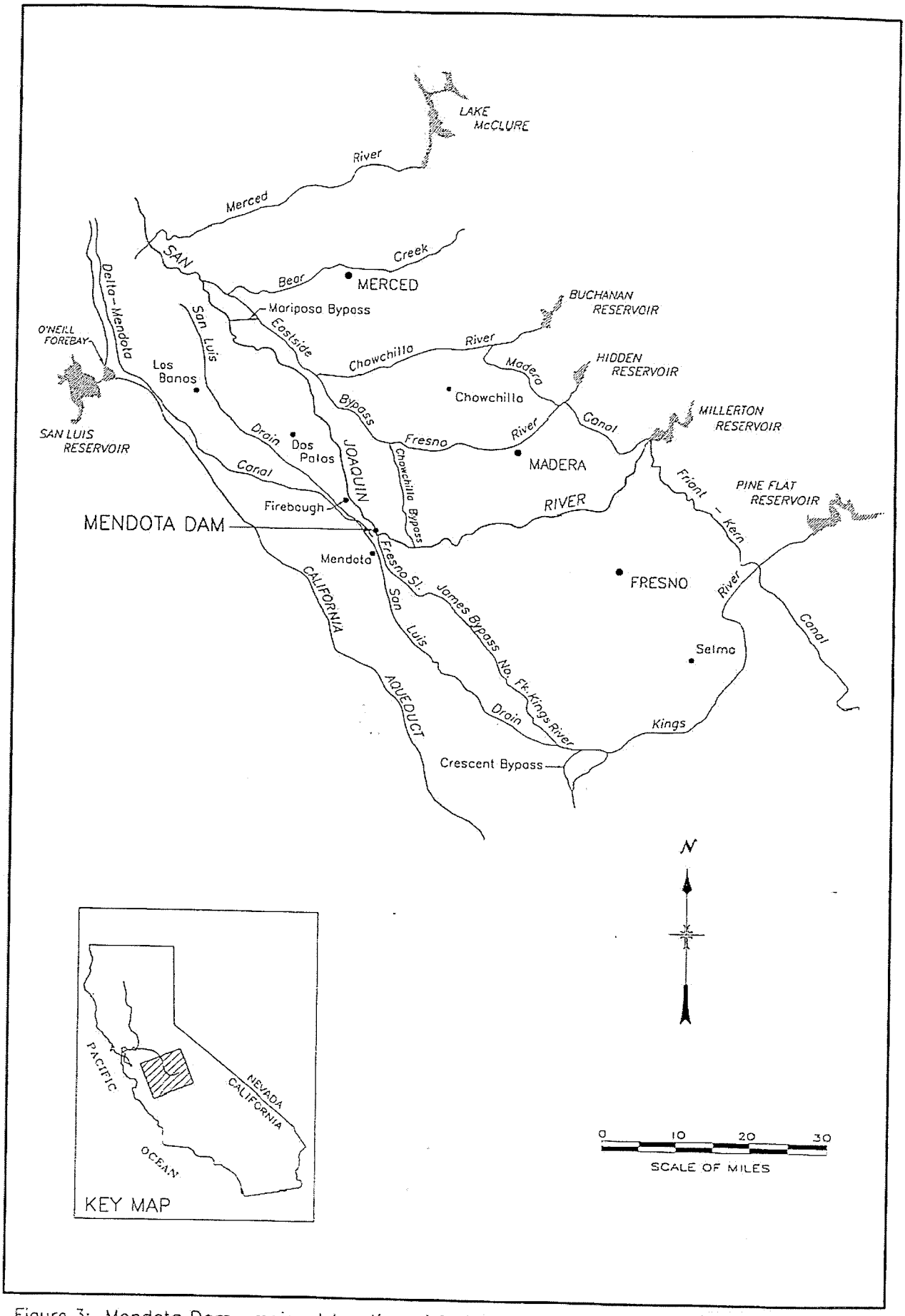


Figure 3: Mendota Dam, regional location of facility.

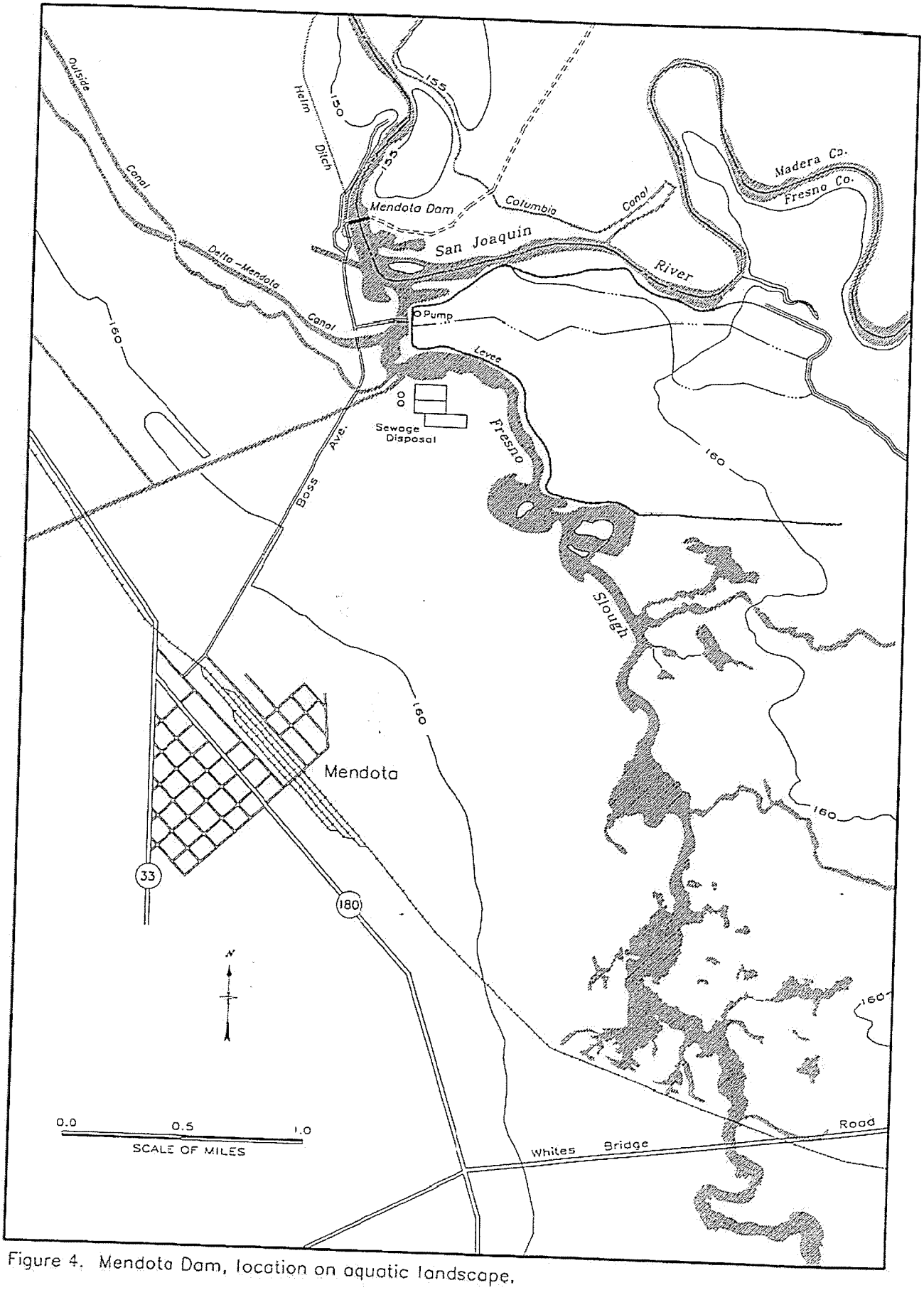


Figure 4. Mendota Dam, location on aquatic landscape.

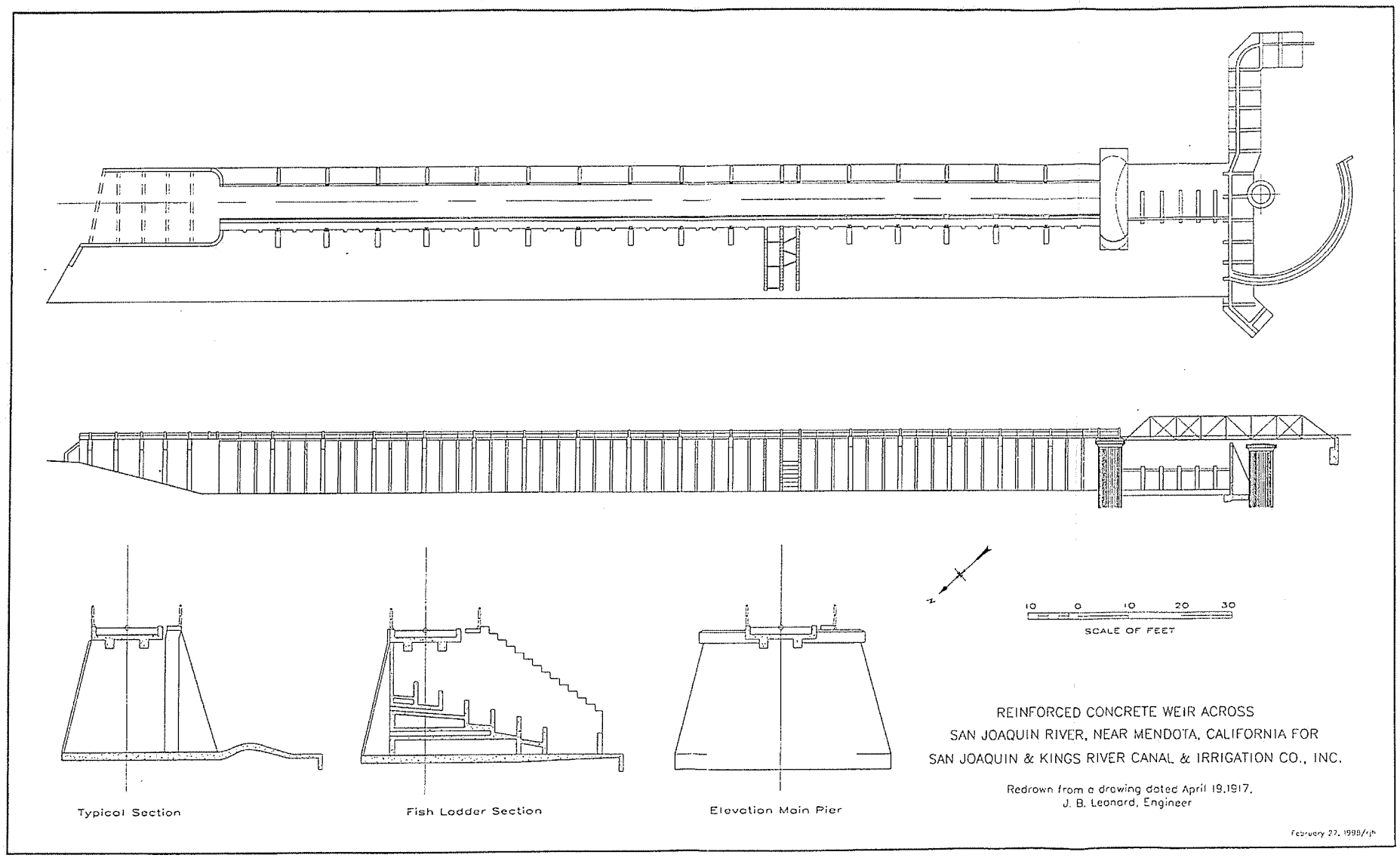


Figure 5. Engineering drawing of Mendota Dam.

Results

Our records search indicated that the APE had been previously surveyed for cultural resources as part of a study for a small hydroelectric project that was never constructed (Napton 1982). During our field examinations we found that the APE had been completely altered from its natural state and no original contours remain. Trash and debris litter much of the downstream area which is used by transients and fishermen. Bass Avenue runs along the left abutment of the dam and lands along the right abutment have been totally altered by grading and filling. Parts of the downstream banks are covered with dense impenetrable stands of giant reed (*Arundo Donax* L.). Surrounding lands are agricultural fields.

No prehistoric artifacts or cultural deposits were noted in the records check or during the field survey in the APE. Nearby, six prehistoric sites are recorded upstream on the San Joaquin River and Fresno Slough; these sites will not be affected by the proposed project. The only prominent feature in the APE is the Mendota Dam.

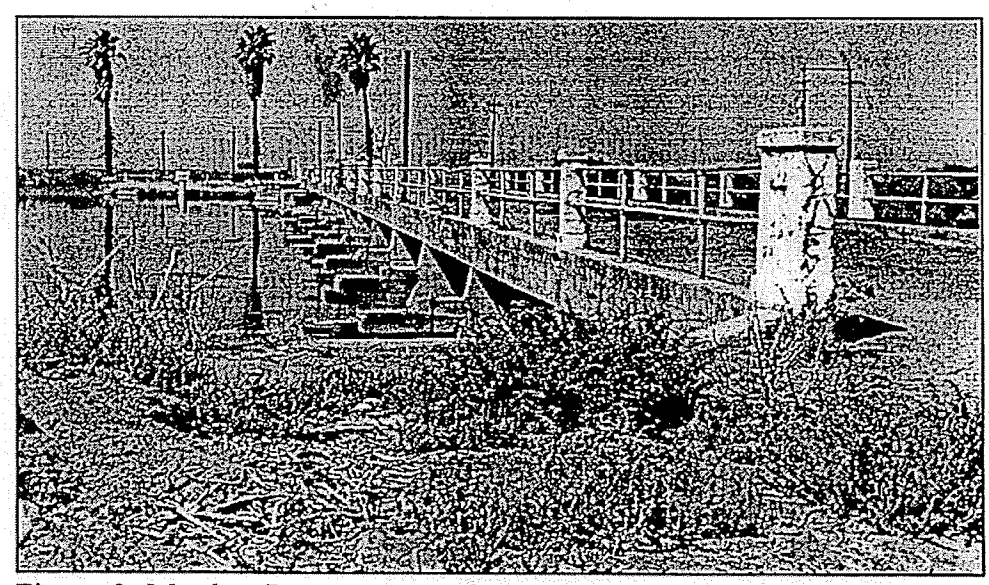


Figure 6. Mendota Dam, upstream face and Mendota Pool, looking west.

Discussion

Historically, the San Joaquin Valley floor contained a diverse and productive patch work of aquatic, wetland, riparian forest, and surrounding terrestrial habitats that supported abundant populations of resident and migratory species of wildlife. Huge herds of pronghorn, Tule elk, and mule deer grazed the prairies, and large flocks of wildfowl occurred in the extensive wetlands. Such rich biological diversity and productivity supported one of the densest non-agricultural population of Native Americans in North America (Latta 1949; Cook 1955; Kroeber

1961). While prehistoric sites are present in the region, none were recorded in the APE, and none of the previously recorded sites upstream of the dam will be affected by the proposed project.

The history of settlement and agriculture in the western San Joaquin Valley was most strongly influenced by Henry Miller of Miller & Lux. To quote:

> "Miller & Lux Incorporated is the outgrowth of a partnership Henry Miller and Charles Lux formed in San Francisco in 1858. Both partners were of German descent; Miller arrived in San Francisco in 1850; Lux had arrived shortly before; and by 1858 they were two of the town's leading butchers.
>
> This partnership flourished for over thirty years with Lux managing financial affairs in the city, and Miller buying and developing land and building up huge herds of cattle in California's San Joaquin Valley, in Oregon, Nevada and elsewhere. Lux died in 1887, and subsequently Miller acquired his interest and continued to expand the business until his death in 1916.
>
> At its peak, Miller & Lux owned over a million acres of land spread over five states, over a million head of livestock, two banks, a large packing plant, plus numerous water companies. Among Henry Miller's great contributions to California's agricultural economy were development of beef cattle as we know them today from the original scrawny Mexican "longhorns"; and his pioneering in flood control and irrigation practices, including the construction of reservoirs and canals, most of which are still in use.
>
> After Miller's death, the company suffered financial reverses which necessitated liquidation of most of its holdings.
>
> Today the company owns and operated land in Merced, Fresno, and Kern counties, and is engaged in diversified farming, engineering, and investment management." (*California Historical Society Quarterly*, 1963, Vol. 42: "289" (no printed page number))

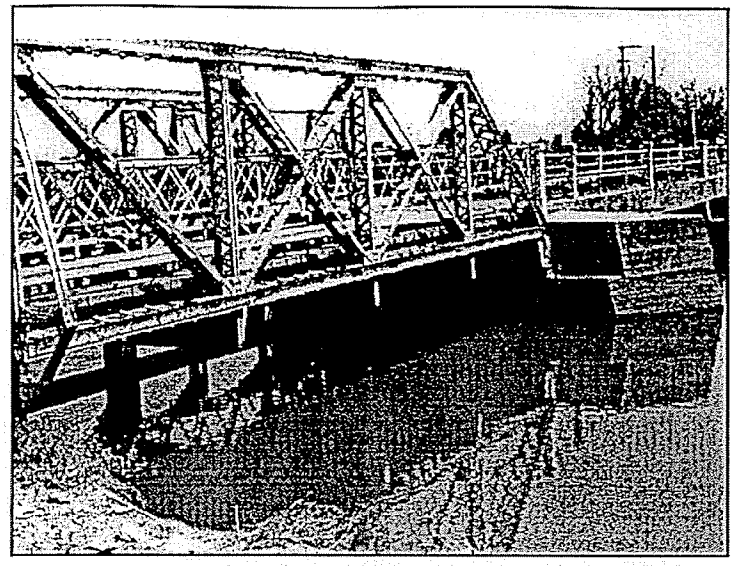


Figure 7. Mendota Dam, swing bridge to allow passage of barges, upstream face, looking east.

The San Joaquin and Kings River Canal Company was organized in 1871 to divert water from the San Joaquin River in a northwesterly direction to and across the Miller & Lux lands. By 1873 it had constructed forty miles of canal from Mendota (Harding 1960:99). This canal was 54 feet wide at its water surface. Sixty-seven miles of canals and ditches were constructed at a cost of 1.3 million dollars. While not financially successful for all, it greatly benefited Miller & Lux's cattle operations. Miller & Lux quickly bought the stock from investors who were bailing out from a losing operation at greatly reduced prices. This early large irrigation system was essentially a land-development project in which construction of the irrigation canals was the means used to permit cultivation of lands in large ownerships or for colonization and sale to settlers.

The engineer for this system in its early years was R.M. Brereton, an Englishman who had worked in many parts of the world. He began his work in 1871 and constructed the first permanent diversion facility at the Mendota Pool and sufficient canals to enable 5,000 acres to be irrigated and demonstrate the results which could be obtained (Harding 1960:100). The canal was constructed "just wherever the contour line will admit of the present grade being carried with economy of excavation, and this makes the canal more crooked than it perhaps would otherwise be (Brereton in Harding 1960)." The dam impounded the entire flow of the San Joaquin River and Fresno Slough, rediverting these waters to the headworks of the main canal. From 1871 through the 1920's virtually all of what is now the Central California Irrigation District's system was constructed (CCID 1992).

In 1880 the State Engineer reported that at the headworks of the San Joaquin and Kings River Canal, a sluiceway on the west end was provided with a capstan by which steamers and barges could be drawn up through the sluiceway during the navigable season. When the diversion dam was rebuilt in 1916 a movable section fifty feet long (Figures 6 and 7) was included for use as a navigable pass at high stages (Harding 1960:76).

John Leonard designed the new 1916 Mendota Dam. Mr. Leonard is well known for his pioneering work in designing reinforced concrete bridges, a style popular at the turn of the 20th century. His 1911 Fern Bridge across the Eel River in Humboldt County is the largest closed spandrel concrete arch bridge in California (Caltrans 1985). Mountain Quarries Railroad Bridge was designed by Leonard and built in 1912.

Mendota Dam is approximately 400 feet long with an upstream water depth of about 16 feet. The dam is of reinforced concrete construction and has seventeen 19.5 foot bays. Fifteen bays have six by eight inch timber weir boards set in groves that are manually removed or added to control the height and flow of water through the dam. Two bays contain three 48 inch sluice gates to control down stream irrigation deliveries. Originally the dam contained an active fish ladder and a swing-bridge for navigation purposes. These features remain but are no longer functional.

The San Joaquin and Kings River Canal, of which Mendota Dam is the primary diversion structure, operated as a public utility until 1954, when it was purchased from San Joaquin Canal Company (Miller & Lux) by the Central California Irrigation District. This district includes the area formerly served by this canal company.

Conclusions and Recommendations

Although the dam was constructed the year Henry Miller died, Mendota Dam is associated with Miller & Lux which was headed by Henry Miller up to the time of his death. Miller was one of the most prominent individuals in the history of the San Joaquin Valley. As a major developer, he headed one of the largest land holding/agricultural companies in the Nation, and as a result of many court battles he helped shape California's water laws. It was through Miller's management decisions that the dam was constructed. Therefore, we conclude that Mendota Dam is historically significant under criteria B (36 CFR 60.4) since it is ". . . associated with lives of persons significant in our past."

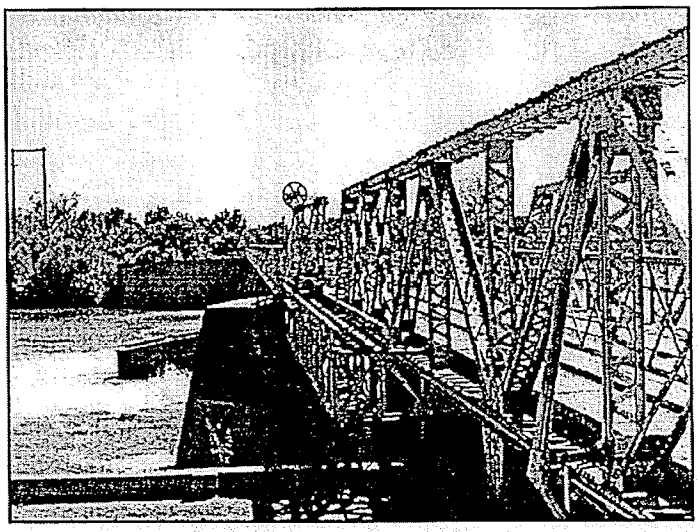


Figure 8. Mendota Dam, swing bridge to allow passage of barges, downstream face, east.

On the other hand , the dam has no outstanding architectural or engineering features and has been modified from its original configuration. The fish ladder and boat/barge lock are no longer functional. The modifications made in 1940 and the non-working features do not significantly alter the general integrity of the property. The overall configuration of

the dam looks much like it did when it was constructed, except that it is well worn and leaks like a sieve.

The dam is not eligible under criteria A since it is not associated with any event that has made a significant contribution to the broad patterns of our history. It is not the first dam at the site since it replaced an earlier one constructed in 1871. There are numerous irrigation diversion dams throughout the state and the nation that serve a similar function. The construction of the dam did not start any new program, trend, or institution but merely allowed the continued irrigation of local lands. While it may have some local significance it is not nationally significant. The dam is not eligible under criteria D, other than its recordation and association, it will not yield information important to our history.

Recommended mitigation measures include the completion of a Historic American Engineering Record for the dam and a interpretative plaque or sign that describes the historical significance of the property. Finally, prior to final selection of the borrow area the area will be evaluated for the likelihood of the presence of historic properties.

References

California Historical Quarterly, various volumes.

Caltrans 1985 Historic Bridges in California. Request for Determination of Eligibility.

Central California Irrigation District 1992 Annual Report, Los Banos.

Cook, S.F. 1955 The Aboriginal Population of the San Joaquin Valley, California. University of California Anthropological Records 16 (2):31-80. Berkeley.

Harding, S. T. 1960 Water in California. N-P Publications, Palo Alto, pp. 231.

Kroeber, A.L. 1961 Handbook of the Indians of California. California Book Co., Berkeley.

Latta, F. 1949 Handbook of Yokuts Indians. Bakersfield, CA: Kern County Museum.

Napton, L. D. 1982 Cultural Resource Reconnaissance of the Mendota Dam Small Hydroelectric Plant Site, Fresno County, California. Report on file at the Central San Joaquin Valley Information Center, California State College, Stanislaus.

Summers Engineering, 1988 Central California Irrigation District Reconnaissance Report-Mendota Dam Relocation, Hanford, CA.

State Engineer, 1880 Report. California Department of Water Resources, Sacramento.

State of California - The Resources Agency	Primary #	Mad-P20-002279 / Rre-P-10-3200
DEPARTMENT OF PARKS AND RECREATION	HRI#	
PRIMARY RECORD	Trinomial	
	NRHP Status Code	2S2
Other Listings		
Review Code	Reviewer	Date

 ***Resource Name or #:** Mendota Dam

P1. Other Identifier: Reinforced Concrete Weir Across San Joaquin River, Near Mendota, Calif.

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** Fresno & Madera (San Joaquin River forms boundary)

***b. USGS 7.5' Quad:** Mendota Dam **Date:** 1956 T. 13 S., R. 15 E.; SW 1/4 of NE 1/4 of Section 19 ; MDM

c. Address Not Applicable (off Bass Avenue)

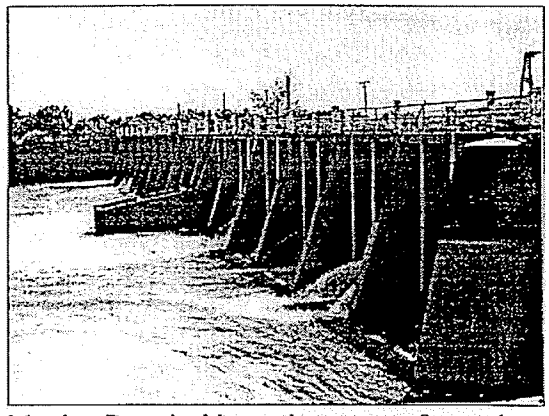
d. UTM: Zone: 10; 755450m E; 4074350m N

e. Location: The Mendota Dam is located approximately two miles northeast of the town of Mendota on the San Joaquin River. It is just downstream of the confluence of the San Joaquin River and Fresno Slough. Ground elevation in the general area of the dam varies from 150 feet to 163 feet above mean sea level (amsl). A bench mark at the dam is 163 feet amsl. State Highway 33 is the major transportation route to the area. Access to the dam is provided on Bass Avenue.

***P3a. Description:** The dam is approximately 400 feet long with an upstream water depth of about 16 feet. The dam is of reinforced concrete construction and has seventeen 19.5 foot bays. Fifteen bays have six by eight inch timber weir boards set in grooves that are manually removed or added to control the height and flow of water through the dam. Two bays contain three 48 inch sluice gates to control downstream irrigation deliveries. Originally the dam contained an active fish ladder and a swing-bridge for navigation purposes. The original dam was constructed in 1917; modifications made in 1940 consisted of the addition of upstream and downstream aprons.

***P3b.Resource Attributes:** HP21

***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)



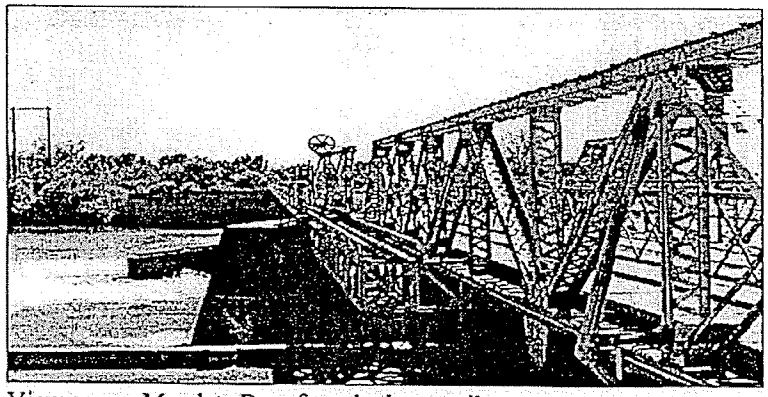
Mendota Dam, looking at downstream face and fish ladder.

P5a. Photo or Drawing:

5b. Description of Photo (View, date, accession #):

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both (1917)

***P7. Owner and Address:**
Central California Irrigation District
P O Box 1231
Los Banos, CA 93635



View across Mendota Dam from lock turnstile.

***P8. Recorded by:**
Patrick Welch/G. James West
Bureau of Reclamation
Sacramento, CA

***P9. Date Recorded:** August 1997

***P10. Survey Type:** Records check, historical research, and on-the-ground complete coverage

***P11. Report Citation:** Summers Engineering, 1988 Central California Irrigation District Reconnaissance Report Mendota Dam Relocation, Hanford, CA.

***Attachments:** ☒Location Map ☒Sketch Map ☐Continuation Sheet ☒Building, Structure and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐Other (List)

DPR 523A (1/95) *Required Information

 NRHP Status Code:

1. Historic Name: Mendota Dam **B2. Common Name:** Same

B3. Original Use: Diversion Dam **B4. Present Use:** Same

B5. Architectural Style: N/A (Reinforced concrete)

B6. Construction History: Constructed in 1917; modified in 1940.

B7. Moved? ☒No ☐Yes ☐Unknown **B8. Related Features:** Mendota Pool, Helm Ditch

B9a. Architect: Jno. B. Leonard, Engineer **b. Builder:** San Joaquin & Kings River Canal & Irrigation Co. Inc. (Miller & Lux)

B10. Significance: (Theme) Economic/ Industrial. Association to Miller & Lux, California pioneers and cattle barons. One element of their vast empire that provided the stability and economics of the west-side of the San Joaquin Valley. Henry Miller (1827-1916) was one of the prime movers of irrigated agriculture on west side and southern San Joaquin Valley. Many of California's water laws were defined as the result of court decisions from litigation between Miller & Lux and numerous parties, one of the most significant being Miller & Lux vs. Haggin.

Period of Significance: Early agriculturally based settlement of the west side of the San Joaquin Valley. Late 1800s to early 1900s.

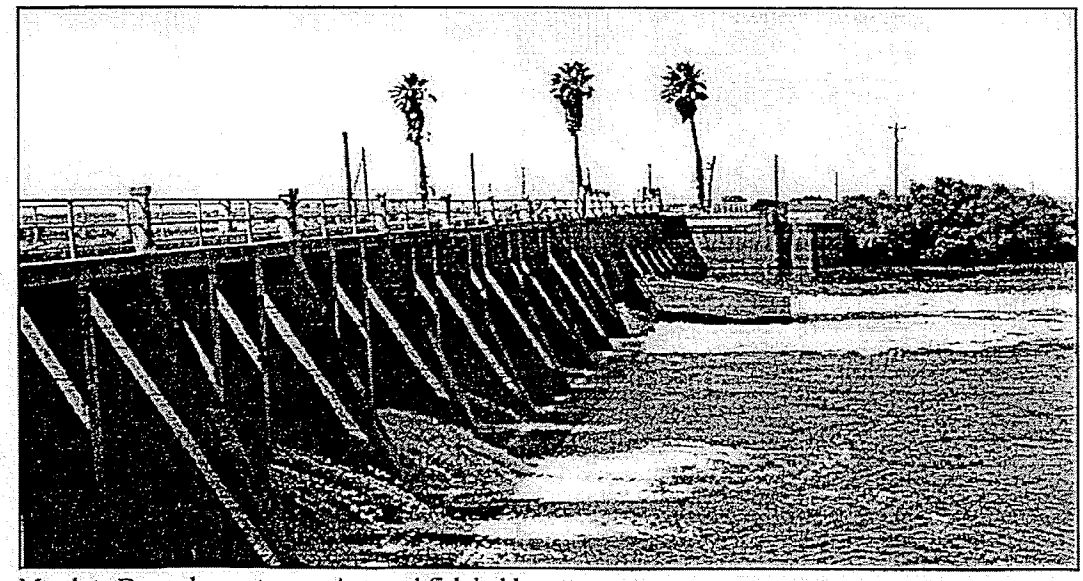
Property Type:

B11. Additional Resource Attributes: Waters from Delta-Mendota Canal spill in to the Mendota Pool. Stream gauging station off left abutment.

B12. References:

B13. Evaluator: Patrick Welch/G. James West **Date:** October 2, 1997

Official Comments:



Mendota Dam, down stream view and fish ladder.

State of California -- The Resources Agency
Department of Parks and Recreation
Location Map

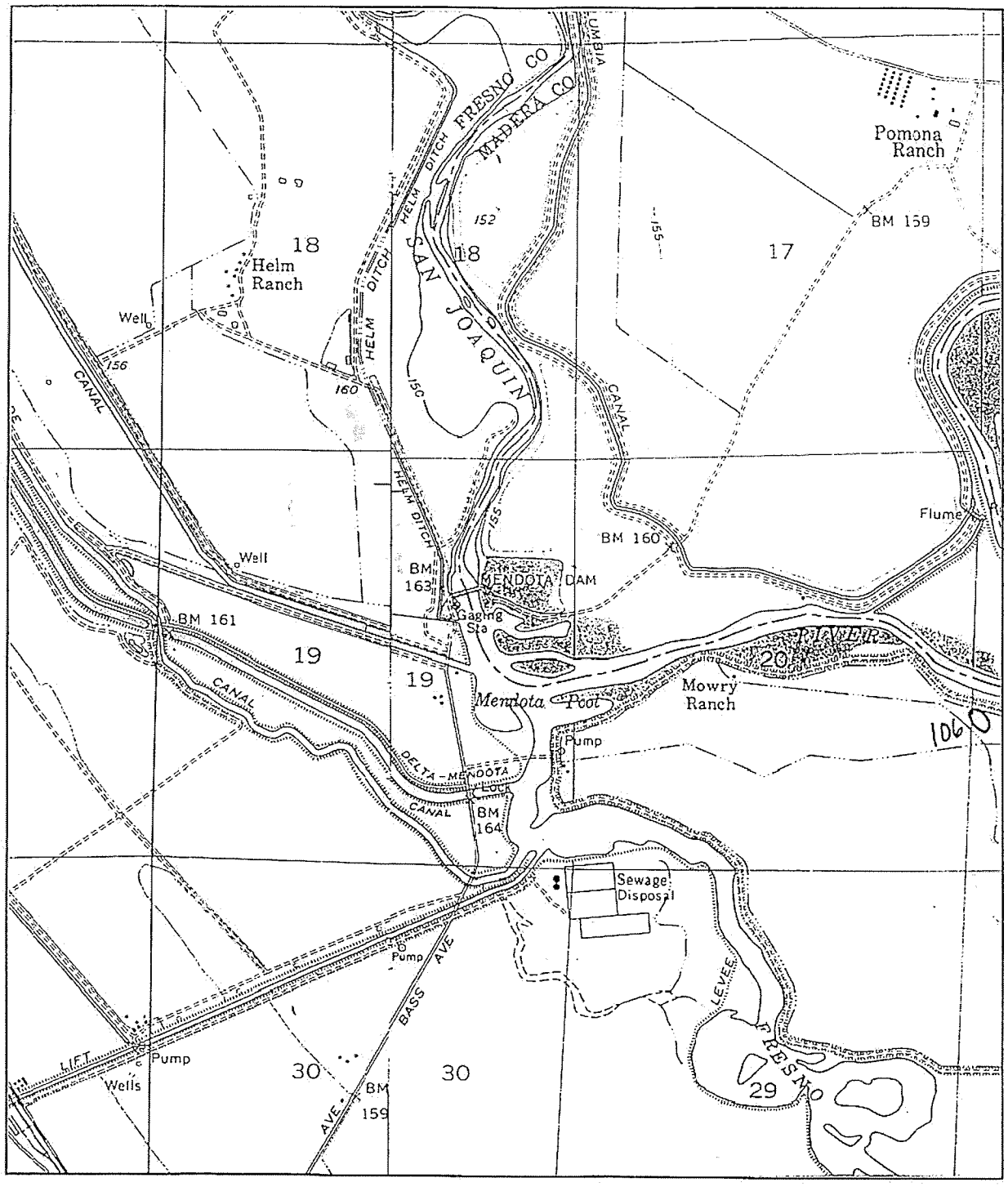
Primary #
HRI#
Trinomial#

*Resource Name or # (Assigned by recorder) Mendota Dam

*Map Name: Mendota Dam(right) and Firebaugh(left)

*Scale: 1:24,000

*Date of Maps: 1956



Cultural Resources Survey of the Mendota Dam and Borrow Areas

Cultural Resources Survey of the Mendota Dam and Borrow Areas

PREPARED FOR: Doug Davy

PREPARED BY: Bob Harmon

DATE: September 16, 2005

This memorandum summarizes the methods and results of an archaeological inventory on behalf of the US Bureau of Reclamation (USBR), Central California Irrigation District (CCID), California Department of Fish and Game and U.S. Fish and Wildlife Service, for the replacement of the existing Mendota Dam to convey water from the San Luis Canal to the Mendota Wildlife Area.

Literature Search

On September 1, 2005, Robert Harmon contacted the Southern San Joaquin Valley Information Center at California State University, Bakersfield and requested a priority cultural resources archives and records search for the proposed Mendota Dam project area. The search (RS# 05-482) was completed by staff of the Information Center, under the direction of Ms. Adele Baldwin, Assistant Coordinator. The search for cultural resources inventories and/or known or recorded cultural resources in or within one-half mile of the project area produced the documents listed in the Sources Reviewed section at the end of this memorandum. The project parcel numbers refer to the project map and aerial photograph provided to Robert Harmon by Craig Williams and do not reflect the parcels' numeric designations on the Information Center map.

Three previous archaeological surveys have included portions of project parcels 2, 3, 4 and 5 (Napton 1982; Weaver 1998; West and Welch 1998). A fourth survey, covering land to the south of where Fresno Slough bends north into Mendota Pool, within 0.4 mile south of parcel 1, did not include any of the present designated project lands (Crist 1975). No part of parcel 1 has been previously surveyed.

Approximately 0.4 mile east of parcel 5, near the left bank of the San Joaquin River, a prehistoric site containing at least five burials and other artifacts was recorded in 1952 (Baumhoff 1952). The Mendota Dam is a recorded historic site (Welch and West 1997) and its replacement was addressed in a previous survey (West and Welch 1998). It is listed in the California Register and has been determined eligible for listing in the National Register of Historic Places (Office of Historic Preservation 2005). This is the only previously recorded cultural site within the boundaries of the present project parcels.

Field Inventory

On September 16, Robert Harmon visited the site and completed the field inventory of the designated project parcels. These included the area adjacent to the existing dam as well as the designated for borrow and construction activity during dam construction. A digital

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camera was used to photograph general views of the project area. Parcels 1, 2 and 3 were surveyed by walking the surface utilizing no greater than 30-meter transect intervals. Small portions of parcel 1 were not accessed because of dense vegetation. Additionally, low grasses and weeds in parts of parcel 1 limited the overall surface visibility to between 60 and 70percent. Parcel 2 was similarly covered, and exhibited approximately the same surface visibility. Along the western edges of parcels 1 and 2, the ground appears to have been cleared, and manure piles are deposited along the Bass Road (west) edge of Parcels 1 and 2.

Parcel 3 is the smallest of the project's numbered lots and has been nearly completely scraped and cleared of vegetation and exhibits numerous vehicle tracks. Parcel 3 is separated from Parcel 2 by a short canal that runs between Mendota Pool and Bass Road. Parcels 1, 2 and 3 are separated from Mendota Pool by an irregular berm that rises up to 6 feet above the ground surface. Parcel 4 is overgrown with dense brush and a variety of trees. The surface is also completely covered with grasses and weeds. This area was surveyed by walking into accessible areas and examining the surface where possible, and scraping the surface to inspect the soil. Parcel 5 was completely flooded and not inspected.

The soil observed within all of the Parcels, (except no. 5) is a generally uniform dark brown to dark grayish brown sandy silt. No evidence of archaeological materials or deposits was observed during the course of the survey.

Sources Reviewed

Baumhoff, Martin A.
1952 University of California Archaeological Site Survey Record for Ca-Fre-106. On file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.

Crist, Michael K.
1975 An Archaeological Survey of a Food Processing Development Area, Fresno County, California. A Cultural Resources Report for McGlasson and Associates, Consulting Engineers. Department of Anthropology, California State University, Fresno. FR 331, on file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.

Napton, L. Kyle
1982 Cultural Resource Reconnaissance of the Mendota Dam Small Hydroelectric Plant Site, Madera County, California. Prepared for Sverdrup & Parcel and Associates, Inc., San Francisco. California State College, Stanislaus, Institute for Archaeological Research. MA 302, on file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.

Office of Historic Preservation
2005 Directory of Properties in the Historic Property Data File for Fresno County, Page 61, 08-09-05. Office of Historic Preservation, State of California. On file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.

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Weaver, Richard A.
1988 Cultural Resources Survey, Lower San Joaquin River and Tributaries Channel Clearing, Fresno and Madera Counties, California (1988). U.S. Army Corps of Engineers, Sacramento District. FR 804/MA 119, on file Southern San Joaquin Valley Information Center, California State University, Bakersfield.

Welch, Patrick and G. James West
1997Department of Parks and Recreation Site Record for Mendota Dam (P-10-003200/P-20-002279). On file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.

West, G. James and Patrick Welch
1998 Class III Archaeological Survey of the Mendota Dam and Downstream Areas, Fresno and Madera Counties, California. FR 265/MA 108, on file, Southern San Joaquin Information Center, California State University, Bakersfield.

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Cultural Resources Survey, Mendota Dam Conveyance Alternative 1B

Cultural Resources Survey, Mendota Dam Conveyance Alternative 1B

PREPARED FOR: Doug Davy

PREPARED BY: Marlene Calicher

DATE: October 28, 2005

This memorandum summarizes the methods and results of an archaeological inventory on behalf of the US Bureau of Reclamation (USBR), Central California Irrigation District (CCID), California Department of Fish and Game and U.S. Fish and Wildlife Service, for Conveyance Alternative 1B to deliver Level 4 Refuge Water Supplies to Mendota Wildlife Area. Alternative lB consists of modifying existing Westlands Water District Facilities to convey water from the San Luis Canal to the Mendota Wildlife Area.

The proposed Alternative 1B project includes a 300-foot bypass at Pumping Plant 6-2 on Lateral 6 (Washington/American Avenue), 3 miles of 80-foot easement on Lateral 5 (Central Avenue) west of its terminus, an 80–foot easement on the west side of the San Luis Canal from Lateral 5 terminus south for a mile to Pumping Plant 6-1 and Mendota WA Pump 7. From Pumping Plant 7-1 on Lateral 7 (Adams Avenue), the route includes an 80-foot-wide easement on the north side of Adams Avenue for less than a half mile, north of farm structures, running east and turning north for two miles along the east side of Stanislaus Avenue, meeting at PP6-1. Also included in the Alternative 1B proposal is a two-acre water discharge point west of PP 7-1, a water discharge point at the San Luis Canal and Stanislaus Avenue, a construction laydown area south of PP 6-1/Pump 7 east of and along Santa Fe Grade Road, and a rubber dam across Fresno Slough.

The project is located in the west side of the central San Joaquin Valley in Fresno County and is about 30 miles west of the City of Fresno, and south and southeast of the town of Mendota. The area is predominantly rural and agricultural, with the exception of the Mendota Wildlife Area, and the terrain is flat. An archaeological records search indicated that several previous archaeological field surveys had been conducted within a mile of the project site, and that there are recorded archaeological sites in the area around the slough but not within the proposed project site area. Pedestrian field reconnaissance for the project included intensive survey of all areas associated with the project.

Literature Review

Marlene Calicher conducted a literature review of the project area on October 18, 2005. The record search was done at the Southern San Joaquin Valley Archaeological Center of the California Historical Reserves Systems in Bakersfield, California. The review found that no known sites exist within the proposed project area but that there are two recorded sites within one mile of the Rubber Dam project site. These sites are CA-Fre-536 (west side of slough at Whites Bridge) and CA-Fre-538 (northeast of Whites Bridge on east side of

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slough). There are other sites within the Mendota Wildlife Area but they are further than a mile from the proposed project area.

No known historic sites occur in the project area. White's Bridge and Watson's Ferry are near the entrance to the Mendota Wildlife Area, and are within a mile of the Rubber Dam project area.

Several archaeological inventories have occurred within a mile of the proposed project area within the area shown on the Tranquility USGS topographic quadrangle. In the northern three-quarters of Section 29, north of Central Avenue, archaeological inventory FR-228 recorded two isolated finds: a utilized cobble and a mano. The FR-228 survey also included the southwest quarter of Section 32 (on Washington Avenue), the eastern quarter of Section 4 on the west side of Stanislaus Avenue, and a quarter-section along the west side of the levee in Section 3. Four surveys have previously been conducted in the vicinity of the proposed rubber dam in the west half of Section 9. These include FR-669 and FR-331 in the far northwestern boundary of the quad, FR-1790 at the Southern Pacific railroad crossing of Fresno Slough, and FR-177 between the railroad and the eastern projection of the slough. No archaeological remains were found during these surveys other than the isolated cobble and mano.

Field Reconnaissance and Survey

CH2M Hill staff conducted a field reconnaissance and survey of project areas on October 19, 20, and 21 of 2005. This field work consisted of intensive survey of all areas designated for project impact. The survey was conducted by Marlene Calicher.

The area surveyed on the 19th of October was the Pump Plant 6-2 bypass and the Rubber Dam site. The pump station was surrounded by cotton fields on north, east, and south, the field to the west was cleared. An area extending approximately 300 feet in all cardinal directions around the plant was surveyed. The rubber dam site at the Mendota Wildlife Area was surveyed on both the north and south sides of the slough. The project area surveyed on the north side of the slough was approximately 800 square feet within and including the access roads going around the slough loop. Visibility was good due to sparse grasses and public foot and vehicle traffic. On the south side of the slough, the area surveyed was restricted to a block approximately 800 by 400 feet, as the south and west ends of the project area consisted of flooded wetlands. Visibility was limited because of thick grasses.

On October 20th, the survey was conducted for Lateral 5 (Central Avenue). Because no specific "work side" of the project had been designated, both sides of the road were surveyed. The survey was started one half-mile west of Ohio Ave and went to the end of Lateral 5 (approximately 3.75 miles), where the route turned south and followed the San Luis Canal. The survey area included harvested and semi-cleared agriculture fields, and visibility was very good on the both sides of the road except in the field west of the intersection of Central and Highway 33 (Derrick Road). This field was fallow and heavily vegetated.

On October 21st, the survey began at Pump Plant 7-1, followed by the two-acre (cleared field) parcel just west of the pump station, and conveyance line going east. The conveyance line continued through a cotton field north of the Pump Plant and behind farm structures.

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The conveyance line route turned north at Stanislaus Avenue, and survey continued on the east side of the road through harvested agricultural fields up to the field just before the San Luis Canal and Santa Fe Grade. This field area was fallow (but with good visibility), and is slated to be a discharge pond. The linear survey continued north, switching to the west side of the road and canal through harvested agricultural fields to meet up with Lateral 5. At Pump Plant 6-1/MWA Pump 7, the proposed laydown area was surveyed. It lies in a sparsely vegetated fallow agriculture field south of the pump plant road. This area covers approximately 1320 square feet between the levee and Santa Fe Grade Road.

Linear surveys were done using a single 25-meter-wide (82-foot-wide) transects paralleling the roadway or canalway. Block survey areas were done with a 10-meter transect interval. Both survey methods included meandering within the transect to check cleared areas, rodent activity areas, soil color discrepancies, drainages and other exposed surfaces. The survey did not result in the finding of any cultural resources.

Conclusions and Recommendations

Neither the literature search, nor the field reconnaissance of previously inventoried areas nor intensive field survey of the project area of potential effects uncovered any evidence that the project would encounter or be likely to encounter historic or prehistoric resources of significance. It is possible, however, that construction could encounter buried archaeological sites. For this reason, it is recommended that construction supervisors and crew halt construction in the immediate vicinity of any buried archaeological find, bones, charcoal, midden, artifacts and contact a qualified archaeologist to evaluate the find and report its significance to the USBR and State Historic Preservation Office.

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