MINUTE ITEM
This Calendar Item No. 13
was approved as Minute Item
No. 13 by the State Lands
Commission by a vote of 3
to 0 at its 2/17/87
meeting.

CALENDAR ITEM

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CERTIFICATION OF THE FINAL EIR/EIS AND
APPROVAL OF GENERAL LEASE - RIGHT-OF-WAY USE

APPLICANT: San Joaquin Valley Pipeline Company
P. O. Box 2648
Houston, Texas 77252

AREA, TYPE LAND AND LOCATION:
A 0.116-acre parcel of tide and submerged land, located in Pacheco Creek at Martinez, Contra Costa County.

LAND USE: Construction and maintenance of a buried crude oil pipeline.

TERMS OF PROPOSED LEASE:
Initial period: 25 years beginning March 1, 1987.

Surety bond: $5,000.

Public liability insurance: Combined single limit coverage of $1,000,000.

CONSIDERATION: $209 per annum; with the State reserving the right to fix a different rental on each fifth anniversary of the lease.

BASIS FOR CONSIDERATION:
Pursuant to 2 Cal. Adm. Code 2003.

APPLICANT STATUS:
Applicant is permittee of upland.

(Added 2/13/87)

PREREQUISITE CONDITIONS, FEES AND EXPENSES:
Filing fee has been received.

STATUTORY AND OTHER REFERENCES:

A. P.R.C.: Div. 6, Parts 1 and 2; Div. 13.

B. Cal. Adm. Code: Title 2, Div. 3; Title 14, Div. 6.

AB 884: 04/02/87 (Including 90-Day Extension).

OTHER PERTINENT INFORMATION:

1. The applicant proposes to construct a 258-mile heated crude oil pipeline in the San Joaquin Valley from Kernridge Oil Field to Martinez which will cross Pacheco Creek in Contra Costa County. The overall purpose of the proposed project is to transport 120,000 barrels per day of crude oil produced in the oil fields to Shell Oil Company Martinez oil refinery. Construction is slated to begin in late 1987, after all other approvals and permits are obtained. Therefore, the applicant requests a two-year construction period with a completion date of March 1, 1989.

   Terms of the lease require the applicant to conduct spring botanical surveys preceding commencement of construction. The proposed survey work and those persons conducting the survey, as well as the results, must be approved by the State Lands Commission Executive Officer in consultation with United States Fish and Wildlife Service and the California Department of Fish and Game. Following construction completion, "as-built plans" are required to be submitted and approved.

   The lease also requires the Lessee to install a remote control shut-off valve and a pressure-sensitive check-value at Pacheco Creek. These mechanisms are oil-spill safety measures required by EIR/EIS mitigation No. 7, as discussed in Exhibit "D" (CEQA findings).

(ADDED 2/13/87)

2. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines (14 Cal. Adm. Code 15025), the staff has caused to be prepared an EIR identified as EIR No. 405, State Clearinghouse No. 85122307. Such EIR was prepared and circulated for public review pursuant to the provisions of the CEQA.

3. The following significant environmental effects were identified in the EIR. These are discussed in detail in Exhibit "D" - CEQA Findings, which include proposed changes, alterations, or permit conditions which should be required in or incorporated into the proposed project:

   Geologic Hazards: The Concord Fault could rupture the pipeline at Pacheco Creek causing a significant oil spill. In addition, the proposed storage tank at mid-station could be damaged by intense ground shaking or liquifaction.

   Soils: Accelerated or recurrent erosion in areas of steep slope could hinder site rehabilitation following trenching activities. Disturbance of saline or alkali soils may prove difficult to rehabilitate.

   Surface Water: Risk of oil spills in surface waters, including stream alteration or scour causing the pipeline to become exposed and damaged.

   Noise: Short-term construction impacts on sensitive receptors.

   Land Use and Recreation: Effects on recreation experience in Black Diamond Mines Regional Preserve and Bethany Reservoir State Park due to construction activities. Also, conflicts in land use relative to proposed future uses and adopted plans.

(ADDED 2/13/87)

Visual Resources: Visual contrast of right-of-way and booster stations and microwave towers.

Paleontology: Loss or disturbance of significant fossil resources.

Cultural Resources: Loss or disturbance of sites eligible for the National Register of Historic Places.

Terrestrial and Aquatic Biology: Potential construction and operation impacts on species or communities, including special status species.

System Safety: Accidents related to systems failure or fires at booster stations.

Oil Spill Potential: Due to design or construction flaws; hazards or accidents; pressure or leaks; lack of security; or lack of organization.

History of Document Preparation

The required Notice of Preparation (NOP) dated January 16, 1986, was sent; as specified in the CEQA Guidelines to responsible agencies and other interested Federal, State and local agencies and jurisdictions.

On February 3rd and 4th two public hearings were conducted in Taft and Martinez respectively. These meetings were used to identify major issues and concerns. Comments received in response to the NOP and at the public "scoping" hearings were addressed in the Draft EIR/EIS.

(ADDED 2/13/87)

Copies of the Draft EIR/EIS were submitted to the State Clearinghouse (OPR) on September 17, 1986 Approximately 250 copies of the document were mailed to responsible agencies, other local, State and Federal agencies and interested parties. The document was circulated for a 60-day review period.

The comment period ended on November 24, 1986. On November 6th and 17th two public hearings were held in Bakersfield and Martinez. No one appeared to present comments on the document at either of these hearings.

Twenty-three letters were received during the public comment period. The Final EIR/EIS addresses all comments received in these letters.

The Final EIR/EIS was distributed on January 30, 1987. Once again approximately 250 copies of the document were distributed.

5. This activity involves lands which have NOT been identified as possessing significant environmental values pursuant to P.R.C. 6370, et seq. However, the Commission has declared that all tide and submerged lands are "significant" by nature of their public ownership (as opposed to "environmental significant"). Since such declaration of significance is not based upon the requirements and criteria of P.R.C. 6370, et seq., use classifications for such lands have not been designated. Therefore, the finding of the project's consistency with the use classification as required by 2 Cal. Adm. Code 2954 is not applicable.

FURTHER APPROVALS REQUIRED:

California Air Quality, USFWS, USACOE, County of Contra Costa, California Department of Fish and Game.

(ADDED 2/13/87)

EXHIBITS:

A. Land Description.
B. Location Map.
C. Executive Summary.
D. CEQA Findings.
E. Statement of Overriding Considerations.

IT IS RECOMMENDED THAT THE COMMISSION:

1. CERTIFY THAT AN EIR NO. 405, STATE CLEARINGHOUSE NO. 85122307, WAS PREPARED FOR THIS PROJECT PURSUANT TO THE PROVISIONS OF THE CEQA AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.

2. ADOPT THE FINDINGS HERETO ATTACHED AS EXHIBIT "D" IN CONNECTION WITH THE PROJECT IN COMPLIANCE WITH THE CEQA (P.R.C. SECTION 21000 ET. SEQ.) AND THE STATE EIR GUIDELINES;

3. ADOPT THE STATEMENT OF OVERRIDING CONSIDERATIONS HERETO ATTACHED AS EXHIBIT "E";

4. FIND THAT THE SIGNIFICANT ENVIRONMENTAL VALUES ORIGINALLY IDENTIFIED PURSUANT TO P.R.C. 6370, ET SEQ., ARE NOT WITHIN THE PROJECT SITE AND WILL NOT BE AFFECTED BY THE PROPOSED PROJECT.

5. AUTHORIZE THE EXECUTIVE OFFICER TO EXAMINE, REVIEW, AND APPROVE, ON BEHALF OF THE COMMISSION, IN CONSULTATION WITH THE UNITED STATES FISH AND WILDLIFE SERVICE, AND THE CALIFORNIA DEPARTMENT OF FISH AND GAME, THE BOTANICAL SURVEY, SUCH APPROVAL TO OCCUR PRIOR TO CONSTRUCTION OF THE PIPELINE WITH A CONSTRUCTION LIMITING DATE FOR COMPLETION OF SUCH PIPELINE TO BE NO LATER THAN MARCH 1, 1989

6. AUTHORIZE ISSUANCE TO SAN JOAQUIN VALLEY PIPELINE COMPANY OF A 25-YEAR GENERAL LEASE - RIGHT-OF-WAY USE BEGINNING MARCH 1, 1987; IN CONSIDERATION OF ANNUAL RENT IN THE AMOUNT OF $209, WITH THE STATE RESERVING THE RIGHT TO FIX A DIFFERENT RENTAL ON EACH FIFTH ANNIVERSARY OF THE LEASE; PROVISION OF A $5,000 SURETY BOND; PROVISION OF PUBLIC LIABILITY INSURANCE FOR COMBINED SINGLE LIMIT COVERAGE OF $1,000,000; FOR CONSTRUCTION AND MAINTENANCE OF A BURIED CRUDE OIL PIPELINE ON THE LAND DESCRIBED ON EXHIBIT "A" ATTACHED AND BY REFERENCE MADE A PART HEREOF.

(ADDED 2/13/87)

EXHIBIT "A"

LAND DESCRIPTION W 23680

A strip of tide and submerged land 22 feet wide in the State-owned bed of Pacheco Creek, Contra Costa County, California, the centerline of said strip being described as follows:

COMMENCING at Point "P-3" as described in the Public Agency Permit to the Contra Costa County Flood Control and Water Conservation District recorded in Book 5918, page 494, Official Records of Contra Costa County; thence from said point "P-3" S 9°54'41" E, 100.00 feet; thence S 82°23'30" W, 115.09 feet to the POINT OF BEGINNING; thence N 82°23'30" E, 230.18 feet to the end of the herein described line.

EXCEPTING THEREFROM any portion lying landward of the ordinary high water mark of Pacheco Creek.

END OF DESCRIPTION

PREPARED JANUARY 27, 1987 BY BOUNDARY SERVICES UNIT, M. L. SHAFER, SUPERVISOR.

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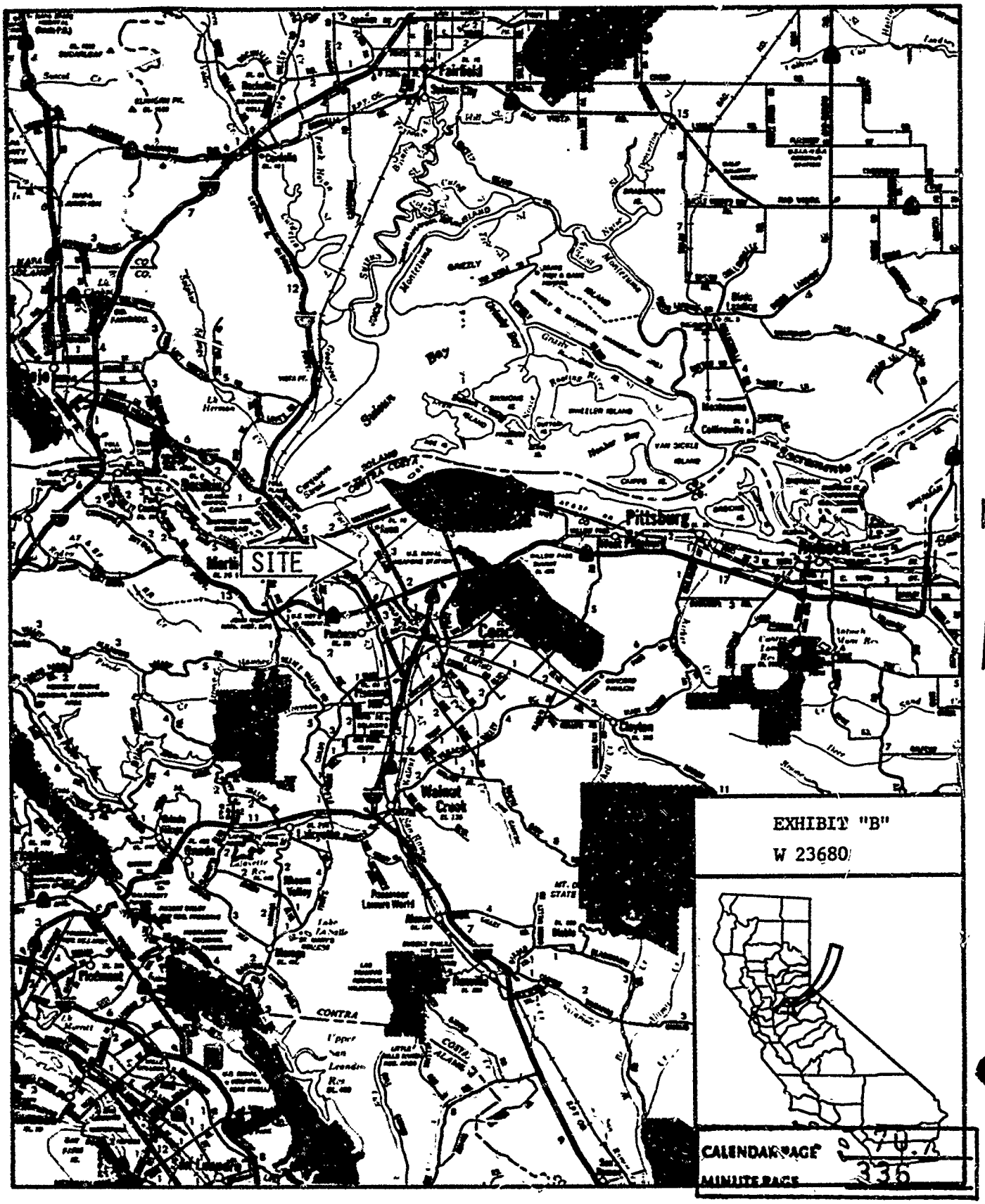

EXHIBIT "B"

W 23680

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W23680

EXHIBIT "C"

EIR/EIS EXECUTIVE SUMMARY

1.1 INTRODUCTION

The San Joaquin Valley Pipeline Environmental Impact Report/Environmental Impact Statement (EIR/EIS) is issued jointly by the California State Lands Commission (SLC) and the U.S. Department of the Interior's Bureau of Land Management (BLM). The intent of the document is to fulfill the requirements of both the California Environmental Quality Act (CEQA) (under which SLC is the lead agency for this project) and the National Environmental Policy Act (NEPA) (under which BLM is the lead agency).

The proposed project includes the construction of a heated, buried crude oil pipeline and associated facilities, to transport 120,000 barrels per day (120 MBD) from existing oil fields in Kern County, California, to existing refining facilities in Martinez, Contra Costa County, California. The project sponsor, or applicant, the San Joaquin Valley Pipe Line Company (SJVPLC), is an affiliate of the Shell Oil Company. SJVPLC proposes to build this pipeline through the western San Joaquin Valley in order to transport the 120 MBD in a reliable, cost-effective manner. Shell currently transports 120 MBD from its Kern County oil fields to Martinez through exchange agreements involving a privately owned pipeline. The proposed action, therefore, will not in itself increase the production or refining of California crude oil.

Once a right-of-way across state and federal lands has been granted and the required permits and authorizations have been obtained for the project, the pipeline will be built in four segments, with pipe diameters ranging from 10.75 to 24 inches, for a total length of about 258 miles. In a generally northwest direction from Kern County, each segment will be built using a larger diameter pipe than the previous segment, to accept and transport the cumulative inputs from producing fields in the southern portion of the San Joaquin Valley. From its origin at Weir station in Kern County, the project will parallel Interstate Highway 5(I-5) through Kings, Fresno, Merced, Stanislaus, and San Joaquin counties. The pipeline will then proceed

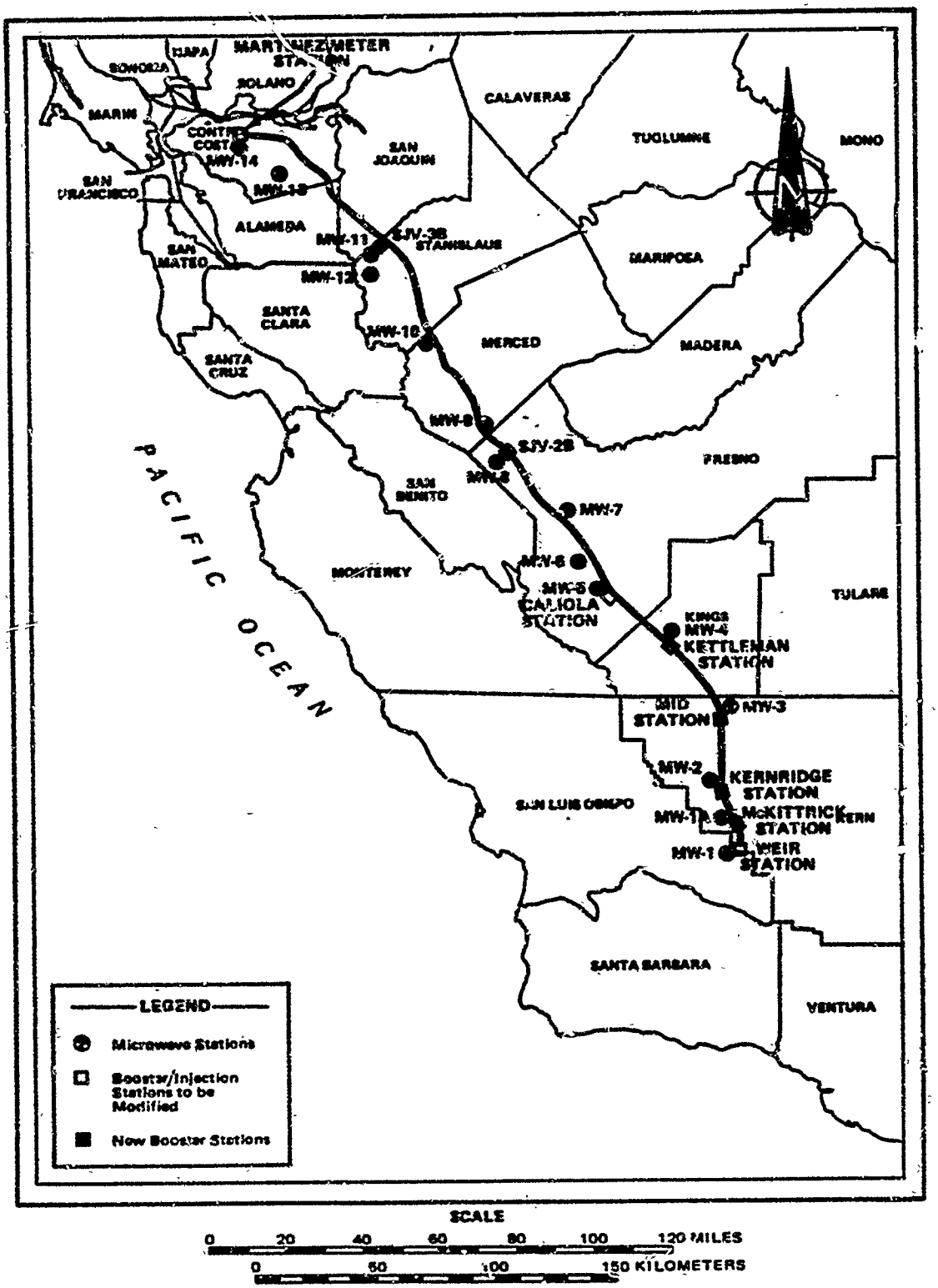

Figure 2–1 PROPOSED PIPELINE SYSTEM AND PROJECT COMPONENTS (SEE DETAILED PROJECT MAPS IN APPENDIX A)

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through the northeast corner of Alameda County and eastern Contra Costa County, before turning west along Suisun Bay, into the existing Martinez refinery.

The pipeline, planned for construction between mid-1987 and mid-1988, will follow existing pipeline and utility corridors for about 88% of its length, or 228 miles. Other project components include the construction of two new booster (pumping and heating) stations, the construction of 13 new microwave communication towers, and the modification of four of six existing booster and oil injection stations.

In addition to the proposed project, this EIR/EIS evaluates two minor alignment alternatives, an alternative booster station configuration, two alternative booster station power source configurations, an overhead aqueduct crossing alternative, and the no-project alternative. The Combination Route diverges from the proposed pipeline north of Lost Hills, California, and extends for about 44 miles. Major parts of this route alternative follow the proposed route; and at no point does it diverge more than 2 miles from the proposed route. This route is considered because, as a whole, it follows I-5 more closely than the corresponding portion of the proposed route and, thus, intrudes less upon undisturbed land. The Contra Loma Route diverges from the proposed route for a 3.5-mile stretch near the City of Pittsburg in Contra Costa County. It avoids areas of potential landsliding in this part of the county.

The three new booster station alternative (as compared to two new booster stations in the proposed action) is analyzed because it could allow greater operational flexibility over Segment 4 of the pipeline (Fresno County to Martinez); with this alternative, oil could be pumped and heated more efficiently, and a 20-inch or 24-inch pipe could be used over Segment 4 (Segment 4 of the proposed action is limited to the use of a 24-inch pipe).

The alternative power source configurations consist of electricity, rather than natural gas, to power the pumps, and either crude oil or natural gas, rather than the use of waste heat with natural gas backup, to heat the oil. These alternate configurations are proposed for analysis because they might be more economical than the proposed action.

The overhead aqueduct crossing alternative would substitute aerial crossings at six different portions of California Water Project and Bureau of Reclamation canals for the underground crossings proposed in the project for these points. This alternative would allay concerns that the California Department of Water Resources has expressed about underground crossings of its aqueducts.

Other alternatives to the various components of the proposed action were analyzed and eliminated from detailed analysis. Such alternatives included about a dozen routing variations, six of which were within Contra Costa County. In addition, two major route alternatives were analyzed at a conceptual level, one route along the

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eastern edge of the San Joaquin Valley, and another that crossed the Coast Ranges and approached Martinez through the Santa Clara Valley. Other alternatives that were ultimately rejected included fiber-optic cables as a line communications medium, pipeline insulation, and alternative transportation means for the crude oil, involving a combination of truck, rail, and tanker transport.

SJVPLC has applied for right-of-way permits from BLM to cross federal land, and from SLC to cross land owned by the State of California. Because of its length and the resources it could potentially affect, the pipeline will require numerous other federal, state, and local permits before construction can begin. A list of required permits is contained in Table 1-1 of the Draft EIR/EIS, minor amendments to which are contained in Table 3-1 of this volume.

1.2 AREAS OF CONTROVERSY

Based on public input, scoping meetings, and agency responses to the Notice of Preparation circulated by SLC, several areas of controversy associated with the proposed action have been identified. The first is the potential for an oil spill at some point along the 258-mile pipeline over the life of the project, and the effects which a spill could have on water resources, terrestrial and aquatic biological resources, and adjacent land uses. The other area of controversy is the potential for impacting such rare, threatened, or endangered species as the San Joaquin kit fox, the blunt-nosed leopard lizard, and others, as well as the potential for reducing these species' critical habitats.

The question of oil spill potential is particularly controversial because of crude oil pipeline spills that have occurred over the past several years between Los Angeles and Martinez and because of the frequent seismic activity in the region. Statistics show that pipeline spills are rare, especially spills from new pipelines, and they are not often due to natural causes. Based on statistical probabilities, it is estimated that over the life of the project there would be three spills over 50 barrels, and six spills of between 5 and 50 barrels. However, despite the elaborate system safety and reliability measures associated with the proposed action, oil spills could occur over the life of the project due to impact damage or defective or corroded pipe.. A wide variety of impacts could occur depending upon the location, volume, and timing of an oil spill. The concerns are surface water and groundwater pollution, damage to nearby biological resources, habitat destruction, temporary loss of agricultural/rangeland productivity, and degradation of scenic vistas. However, the most significant impact would be realized if a major spill reached reservoirs or aqueducts and contaminated these water supplies for Los Angeles and for irrigated agriculture.

Along the pipeline route, areas of controversy include pipeline construction through sensitive biological areas such as critical habitat for the blunt-nosed leopard lizard, salt marsh harvest mouse, giant kangaroo rat, and San Joaquin kit fox, and the Hoover's wooly star and Congdon's eatonella. Because the U.S. Fish and Wildlife Service (USFWS) considers these animals endangered and is likely to designate these two plant species as threatened or endangered, and the

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California Dept. of Fish and Game's (CDFG) similar concerns about these species, intensive field surveys of these species were conducted as a condition of project approval. The results of these surveys have been integrated into this document.

1.3 MAJOR IMPACT CONCLUSIONS

The proposed route is generally aligned for much of its length within existing utility and transportation corridors. As a result, the project has no impacts which cannot be reduced by mitigation, and only a few impacts which remain significant after mitigation. Construction, operation, oil spill, and abandonment impacts of the proposed project are described in Chapter 4 of the Draft EIR/EIS. Mitigation measures are described in Chapter 6 of the Draft EIR/EIS, with some modifications and additions contained in Section 3.3 of this volume. Table 1-1 of this volume identifies the potentially significant impacts, their corresponding mitigation measures, and the residual impacts that would result from the mitigated action. The mitigation measures listed in the table are referenced by the same numbers used in Chapter 6 of the Draft EIR/EIS. Residual impacts remaining after mitigation are classified as either significant or not significant. The significant residual impacts include the following:

For Construction:

- The total land requirement of almost 1,000 acres of permanent right-of-way and ancillary facilities; and
- Localized revegetation problems or failure on slopes steeper than 18% (about 80 slopes).

For Operation:

- The consequences of an exceptionally strong seismic event (greater than MMI VIII), which could result in a major spill and spill-related impacts to environmental resources. (Note: the probability of such an event is considered small.)

For Accidents:

- Any spill greater than 5 barrels, or any spill to water. (From statistical probabilities, it is estimated that about six spills of greater than 5 barrels may occur over the life of the project.)

1.4 COMPARISON OF ALTERNATIVES

The FEIR/FEIS evaluates four project alternatives, any of which may be implemented independently of the others. This discussion briefly summarizes the advantages and disadvantages of each alternative compared to the aspect or portion of the proposed action that it would replace.

Other than the no-action alternative, the proposed route does not have an alternative that would constitute a distinctive and completely different alternate to the proposal. The reason is that the proposed

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route has been aligned to avoid the rugged terrain of the Coastal Ranges as much as practicable while also avoiding highly productive agricultural land and irrigation systems in the San Joaquin Valley. For this reason, the proposed route crosses a multitude of toe slopes on the border between valley and foothills. Any route further west would encounter more difficult topographic constraints. Moreover, the proposed route follows existing transmission and transportation corridors to a large extent.

The route alternatives, or deviations, consist of the Combination Route and the Contra Loma Route. The Combination Route would follow existing rights-of-way slightly more closely than the corresponding portion of the proposed action, even though the separation between the two routes is very small (less than 2 miles). Because the Combination Route would add about 0.5 miles to the length of the pipeline, it would have slightly higher construction and operation costs. The Contra Loma Route would avoid landslide areas in a small portion of Contra Costa County, but it would pass through existing residential areas, unlike the segment it would replace, and therefore could create more difficult right-of-way and permit conditions.

The three new booster station alternative would achieve project objectives more economically because it would allow more efficient sizing and operation of pumps and heaters. It would also allow a 20-inch pipe to be installed over Segment 4, reducing the maximum potential oil spill over this segment. This alternative has similar environmental impacts as the proposed configuration.

The alternative power source configurations could also result in more economical operation of the pipeline, depending on the prices of natural gas, crude oil, and electricity. These alternative power configurations would use more energy than the proposed method, and in addition, will cause significantly higher air emissions if crude oil were to be burned as a source of heat.

Overhead aqueduct crossings would be a preferable method of crossing California Water Project canals compared to the proposed underground techniques, according to the California Department of Water Resources (see comment letter 17). They would also be less expensive. The disadvantages of these overhead crossings are that they would expose the pipeline to external damage, possibly causing spills into the aqueducts, and they are visually intrusive compared to underground crossings.

1.5 AGENCY-PREFERRED ALTERNATIVE

Under NEPA, the Federal lead agency must identify its preferred alternative for projects for which an EIS is prepared. The preferred alternative stated below is not a final agency decision, but it is an indication of the federal agency's preliminary preference. The alternative identified below is preferred by BLM, the federal lead agency.

The Federal agency's preferred alternative is the proposed action as mitigated and described in this document.

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Table 1-1
FINAL (REVISED)
SUMMARY OF SIGNIFICANT IMPACTS FOR THE
SAN JOAQUIN VALLEY PIPELINE PROPOSAL

Resource Area	Impact Area	Significance of Potential Hazard or Impact S	Significance of Potential Hazard or Impact NS	Mitigation Measure	Effectiveness	Residual Impact Significance S	Residual Impact Significance NS
GEOLOGY AND TOPOGRAPHY							
Construction	1. Unique geological features	--	NA†	--	NA†	--	--
	2. Commercial resources	--	X	--	NA†	--	X
	3. Paleontological resources	--		See Paleontology below	--		
	4. Topographical modifications; requirement to cut steep slopes, particularly in Contra Costa County	--	X	See Soils below	Original contours and slopes will be restored as much as possible	--	X
	5. Requirement for occasional blasting of hard rock	--	X	2, 6	Noise from blasting or ricks to nearby construction crews will be minimized	--	X
Operation	None identified	--	--	--	--	--	--
GEOLOGICAL HAZARDS							
Construction	None identified	--	--	--	--	--	--
Operation	6. Potential pipeline rupture at Pacheco Creek	X	--	1, 3, 4, 7	Response action to a spill if one occurs at the Concord Fault will be accelerated	X(2)	--
	7. Need for special engineering design studies required to enhance safety of:						

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Table 1-1 (Cont.)

Resource Area	Impact Area	Significance of Potential Hazard or Impact S	Significance of Potential Hazard or Impact NS	Mitigation Measure	Effectiveness	Residual Impact Significance S	Residual Impact Significance NS
GEOLOGICAL HAZARDS (Cont.)							
	a) The pipe at Concord Fault	X	—	1, 4	Reduced potential for rupture due to maximum potential earthquake and fault movement (up to 3 feet laterally)	X	—
	b) Stability of storage tank at Mid station due to intense ground shaking or liquefaction	X	—	5	Reduced potential for damage to ancillary facilities	—	X
	8. Buoyancy and pipe instability in water-saturated zone (brackish marsh deposits)	—	X	3	The pipe will be prevented from floating and/or working its way to the surface	—	X
SOILS							
Construction	9. Pipeline sited on landslide prone areas	—	X	9	Pipeline stability is enhanced; risk of exposure is minimal	—	X
	10. No rehabilitation and revegetation within one growing season due to the following factors:					—	—
	a) Accelerated erosion and deposition due to slumping and steeply sloping terrain, particularly in Contra Costa County	X	—	8, 9, 10, 11, 12, 15, 16, 66, 67	These measures will restrict the impact to the sites having most severe limitations (e.g., slopes >18% and associated drainages)	X	—
	b) Salinity or alkalinity	X	—	8, 13, 15, 16	Saline soils will be rehabilitated and revegetated with adapted plant species	—	X

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Table 1-1 (Cont.)

Resource Area	Impact Area	Significance of Potential Hazard or Impact S	Significance of Potential Hazard or Impact NS	Mitigation Measure	Effectiveness	Residual Impact Significance S	Residual Impact Significance NS
SOILS (Cont.)							
	11. Reduced productivity due to horizon mixing and compaction, ponding of agricultural land	—	X	8, 16, 17	Original productivity will be restored on the right-of-way	—	X
Operation	12. Potential recurrent erosion problem on steep slopes and associated drainages	X	—	10, 14, 15	Right-of-way maintenance including erosion control, where necessary will be implemented in perpetuity	X	
SURFACE WATER							
Construction	13. Degradation of water quality below beneficial use criteria, due to any of the following factors:					—	—
	a) Excessive disturbance in-stream and of the adjacent banks and land causing erosion and sedimentation	—	X	18, 23, 21	Silt loads are reduced	—	X
	b) Release of hydrostatic test water and/or trench dewatering	—	X	19, 20, 24	Hydrostatic test water releases will be controlled to avoid scour and water quality degradation	—	X
	c) Spills and fuel leaks	X	—	22	No oil will reach surface water resources	—	X
	14. Stream bed alterations and scouring, and damage to aquatic habitat	—	X	18, 21, 68	Aquatic life will only be subject to short-term effects; there will be no significant change in the stream beds	—	X

*In Alameda and Contra Costa counties.

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Table 1-1 (Cont.)

Resource Area	Impact Area	Significance of Potential Hazard or Impact S	Significance of Potential Hazard or Impact NS	Mitigation Measure	Effectiveness	Residual Impact Significance S	Residual Impact Significance NS
SURFACE WATER (Cont.)							
	15. Construction of structures in 100-year flood zones	—	X	21	Pipeline stability is ensured in the case of an unusual flood	—	X
	16. Reductions in surface water volume	—	NA†	NA†	NA†		NA†
Operation	17. As for (14) above	—	X	68, 69	Scour will be prevented and risk of exposure of the pipeline will be reduced	—	X
	18. Oil spills	X	—	70, 102	Measure will reduce size of spill and spill impacts	X(2)	—
GROUNDWATER							
Construction	None identified						
Operation	19. A measureable reduction in water quality in an aquifer, due to major spill which is contained and cleaned up	—	X	100	If a spill occurs, it will not reach aquifers due to spill response	—	X
	20. Restrictions or reduction in available groundwater	—	NA†	NA†	NA†	NA†	
AIR QUALITY							
Construction	21. Violation of national and state ambient air quality standards due to construction emissions	—	X	25, 26, 27	Construction emission will be negligible	—	X
Operation	22. As for (21) above due to booster station emissions standards due to construction emissions	—	X	25, 71	Negligible pollution from natural gas burning	—	X

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Table 1-1 (Cont.)

Resource Area	Impact Area	Significance of Potential Hazard or Impact S	Significance of Potential Hazard or Impact NS	Mitigation Measure	Effectiveness	Residual Impact Significance S	Residual Impact Significance NS
AIR QUALITY (Cont.)							
	23. Influence on areas already in attainment and sensitive receptors	--	X	NN	NN	--	X
SOCIOECONOMICS AND TRANSPORTATION							
Construction	24. Significant demand for temporary housing, for infrastructure	--	X	28, 33	Potential impacts 24 and 25 are not a feature of the project, mainly due to limited labor force	--	X
	25. Water demand	--	X	NN	NN	--	X
	26. Loss in tourist value	--	X	NN	NN	--	X
	27. Loss in revenue for grazing BLM land	--	X	36	Loss will be minor, if any, and short-term; interference with grazing practices will be negligible	--	X
	28. Unacceptable public risk	--	X	29	Risk associated with open trench and heavy equipment will be minimized	--	X
	29. Traffic congestion, delays accidents, public inconvenience	--	X	28	Planned crossings of roads and maintenance of traffic flow	--	--
Operation	30. Negative change in local tax base	--	NA†	NA†	Potential impacts 30, 31, 34, and 35 are not a feature of the project and, at most, insignificant	--	NA†

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Table 1-1 (Cont.)

Resource Area	Impact Area	Significance of Potential Hazard or Impact S	Significance of Potential Hazard or Impact NS	Mitigation Measure	Effectiveness	Residual Impact Significance S	Residual Impact Significance NS
SOCIOECONOMICS AND TRANSPORTATION (Cont.)							
	31. Change in property values	--	NA†	NA†	Potential impacts 34 and 35 are negligible	--	NA†
	32. Change in water demand	--	X	NN	Approximately same as present	--	X
	33. Change in population	--	X	NN	Negligible increase, if any	--	X
	34. Unacceptable public risk	--	X	NN	Risk is acceptable as indicated by existing pipelines	--	X
	35. Loss in tourist value	--	NA†	NA†	NA†		NA†
NOISE							
Construction	36. Construction equipment and activities exceed county guidelines	--	X	30, 31	People will experience exceedences (to about 60 dB(A)) only for a couple of days at specific points, only on work days during the day time, and not on weekends in recreation areas and elsewhere	--	X
	36a. Sensitive receptors affected by short-term construction noise	X	--	31	Noise eliminated on weekends, but short-term noise will still affect the sensitive receptors listed in Table 4-13 of the Draft EIR/EIS during weekday construction.	X	--
Operation	37. As above, due to noise of booster station; long-term inconsistency with State of California land use criteria	--	X	72	Noise will be attenuated and will be audible only at and near the site; no noise-sensitive locations will be affected	--	X
	38. Will exceed 55 dB(A) over the long-term	--	X	72	Only within about 250 feet from the facilities	--	X

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Table 1-1 (Cont.)

Resource Area	Impact Area	Significance of Potential Hazard or Impact S	Significance of Potential Hazard or Impact NS	Mitigation Measure	Effectiveness	Residual Impact Significance S	Residual Impact Significance NS
LAND USE AND RECREATION							
Construction	39. Inconsistent with adopted land use plans. Relative to future land uses in Contra Costa, conflict: Stoneman Park and Reservoir; Kirker Pass and central landfill proposals and proposed residential development; proposed highway improvements; and Coalinga Air Cargo Port and bike trails in Fresno County	X(3)	—	37	Further consultation with local planning authorities is required	—	X(3)
	40. Quality of recreation in Black Diamond Mines Regional Preserve (Contra Costa County) and Bethany Reservoir State Park	X	—	37	Planning the siting and timing of the construction will reduce the impacts and/or avoid them	—	X
	41. Increase in recreational demand	—	X	33	Not only will the project have an insignificant impact on recreational demand, the labor force will not use public facilities except for recreation	—	X
	42. Changes necessary in land use classification	—	X	32	After construction, most of the approximately 2,500 acres are returned to their original land use; existing utility corridors are used for about 80% of the route; no permanent conversion of prime agricultural land	—	X
	43. Volumes of waste relative to landfill capacity	—	X	35	Waste volumes are small	—	X

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Table 1-1 (Cont.)

Resource Area	Impact Area	Significance of Potential Hazard or Impact S	Significance of Potential Hazard or Impact NS	Mitigation Measure	Effectiveness	Residual Impact Significance S	Residual Impact Significance NS
LAND USE AND RECREATION (Cont.)							
Operation	44. As for (42), two new booster stations and microwave towers will preempt existing land use on less than 40 acres	—	X	32	Prime agricultural land not affected	—	X
	45. New access to previously inaccessible areas	—	X	73, 74	Gates will be installed to interfere with motorized access to sensitive areas if any are identified as public lands	—	X
VISUAL RESOURCES							
Construction	46. Visual contrast of the right-of-way	X	—	8, 11, 15, 38, 40, 41	No strong visual contrast will develop	—	X
	47. Visual contrast of booster stations and microwave towers; conflicts with special policies for scenic highway and Westley Rest Stop Park	X	—	38, 39	These mitigations will help to reduce the visual impacts of these features, but the residual impact is still significant.	X	—
Operation	48. Visual contrast upon abandonment	—	X	75	Sites will be restored to their original condition	—	X
PALEONTOLOGY							
Construction	49. Loss or disturbance of significant paleontological resources	X	—	42, 43, 44, 45	With these mitigation measures, adverse impacts will be reduced to insignificance	—	X

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Table 1-1 (Cont.)

Resource Area	Impact Area	Significance of Potential Hazard or Impact S	Significance of Potential Hazard or Impact NS	Mitigation Measure	Effectiveness	Residual Impact Significance S	Residual Impact Significance NS
PALEONTOLOGY (Cont.)							
Operation	50. Sensitive resource areas becoming publicly known and accessible and unauthorized collection	--	X	73, 76	Unauthorized collection will be limited; area is presently accessible	--	X
CULTURAL RESOURCES							
Construction	51. The loss or disturbance of sites eligible for the NRHP	X	--	46, 47, 48, 49	With these mitigation measures, which include implementation of a cultural resources management plan, adverse impacts will be reduced to insignificance	--	X
	52. Conflicts with features of ethnographic importance and the cultural heritage of Native American groups	--	X	50, 51	Native American groups will be included in planning and mitigation measures to insure minimal conflict	--	X
Operation	None identified						
TERRESTRIAL AND AQUATIC RESOURCES							
Construction	53. Impacts on species and communities	X	--	52, 53, 54, 56, 57	Right-of-way habitats will be restored, raptor nesting sites will be avoided, and a range of other measures will ensure no significant impacts occur to aquatic and terrestrial plant and animal species	--	X

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Table 1-1 (Cont.)

Resource Area	Impact Area	Significance of Potential Hazard or Impact S	Significance of Potential Hazard or Impact NS	Mitigation Measure	Effectiveness	Residual Impact Significance S	Residual Impact Significance NS
TERRESTRIAL AND AQUATIC RESOURCES (cont.)							
	Impacts on special status species	X	—	52, 53, 55, 56, 57, 58, 59, 60, 61, 62	With these mitigation measures and others that may be required by the Biological Opinion, adverse impacts will be reduced to insignificance	—	X
	54. Unauthorized collections	—	X	56	Potential impact is already possible due to general accessibility of the region; status quo will be maintained	—	X
Operation	55. Contamination by herbicides; weed control	—	X	77	Weed control through application of a gravel layer is effective and has minimal impacts	—	X
	56. Spill impact on special status species habitat	X	—	78, 79	Measure ensures full-scale action; residual impact significance depends on many factors	X (2)	—
SYSTEM SAFETY AND RELIABILITY							
Operation	57. Impacts due to system failures and/or failure to follow procedures	X	—	80, 81, 83	Measures ensure applicable design codes and regulations apply to project trained operators, access to information and communications, oil movement control and instantaneous shut-off, if necessary	X (2)	—

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Table 1-1 (Cont.)

Resource Area	Impact Area	Significance of Potential Hazard or Impact S	Significance of Potential Hazard or Impact NS	Mitigation Measure	Effectiveness	Residual Impact Significance S	Residual Impact Significance NS
SYSTEM SAFETY AND RELIABILITY (Cont.)							
	58. Maintenance-related system failures	X	—	82	Maintenance checks will ensure safety features are operational and the identification of hazards to the pipeline	X(2)	—
	59. Fires at booster stations	X	—	84, 85, 86, 87	When fires occur, they will be controlled	X(2)	—
	60. Pump spills at booster stations	—	X	88	Leak detection	—	X
OIL SPILL POTENTIAL							
Operation	61. Spill impacts due to design or construction flaws	X	—	89, 91, 92, 93, 95, 101	Probability of a spill or leak is reduced	X(2)	—
	62. Spill impact due to geologic hazard or accidents	X	—	90	Probability is reduced by design	X(2)	—
	63. Spill impacts due to damage from pressure or leaks	X	—	93, 94, 97	Probability is reduced by systems design	X(2)	—
	64. Spill impacts due to lack of security	X	—	95, 98	Probability is reduced by inspection practices	X(2)	—
	65. Spill impacts due to lack of organization	X	—	99, 100	Size of spill is reduced by fast response; impact is mitigated by cleanup	X(2)	—

NA = Not applicable to the project.
X(2) = Significance of residual impacts cannot be determined; it is a function of many factors including the size of the spill, time of year, sensitivity of the resources, response action, etc.
X(3) = Significance of future land use conflicts must be resolved through the local land use planning process.
NN = Not necessary.

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EXHIBIT D

CEQA FINDINGS

Explanatory Notes:

These findings are made by the State Lands Commission pursuant to Section 15091, Title 14, California Administrative Code, on the proposed San Joaquin Valley Pipeline Project EIR/EIS. All significant impacts of the project identified in the EIR/EIS are listed for both the proposed project and each major alternative analyzed:

Contra Loma Route
Combination Route
Three Booster Stations
Alternative Power Sources
Alternative Pipe Size
Aqueduct Crossing
No Project

The impacts are organized according to the resource affected (geology, visual, etc.), and the discussion states whether the impact is due to pipeline construction, normal operation, upset condition or abandonment.

For each significant impact, findings have been made as appropriate. For some of the impacts all three findings have been made:

1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.

2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

3) Specific economic, social, or other considerations make infeasible the mitigation measures or project alternatives identified in the final EIR.

Finding No. 1 is used extensively in this exhibit because the applicant, in a letter dated February 9, 1987, amended their application to incorporate all but two of the mitigation measures recommended in the FEIR/EIS. The remaining two

measures have been recommended for inclusion as conditions of project approval. Therefore, the project has been mitigated to the full extent recommended in the FEIR/EIS. Where residual impacts remain significant, it is as a result of potential unforeseen events (accidents) the risk of which cannot feasibly be further reduced.

Although the State Lands Commission is the CEQA Lead Agency, it has jurisdiction only over a small part of the route and, thus, has limited power to require mitigation. Whenever finding No. 2 occurs, agencies with jurisdiction over the location and/or operation of the pipeline have been specified. It is these agencies, within their respective spheres of influence, which would have the ultimate responsibilities to adopt, implement and enforce the mitigation discussed. Finding No. 3 appears whenever an unavoidable significant impact has been identified and residual impact remains after application of all recommended mitigation. Due to the linear nature of the project, many such impacts have been identified along the length of the pipeline.

This impact is always specifically identified in the supporting discussions. The Statement of Overriding Considerations, Appendix E, applies to all such unavoidable impacts, as required by Sections 15092 and 15093, Title 14, California Administrative Code.

The appropriate findings are followed by a narrative of facts supporting them. When possible, reference is made to a specific (numbered) mitigation measure presented in the FEIR/EIS.

GEOLOGIC HAZARD

IMPACT: Rupture of the pipeline during operation caused by seismic activity on the Concord Fault.

FINDING:

1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.

3) Specific economic, social, or other considerations make infeasible the mitigation measures or project alternatives identified in the final EIR.

FACTS SUPPORTING THE FINDING:

The pipeline crosses a trace of the Concord Fault beneath the channel of Pacheco Creek. Although the unconsolidated material in Pacheco Creek presents less danger of rupture than bedrock would, the estimated maximum potential earthquake (Richter 7, Modified Mercalli Intensity (MMI) IX or X) still represents a significant risk. Mitigation measures 4 and 64 require special geologic and engineering study and design of this portion of the pipeline to assure it is constructed to meet the level of hazard present on the site. In addition, mitigation 4 requires storage of spill containment equipment at the Martinez Refinery. This measure will help, due to the proximity of the refinery to Pacheco Creek, to assure that any spill is responded to expeditiously. Specifically, the FEIR/EIS states:

> [4] As identified by geotechnical studies of the route, the major concern with respect to seismic hazards is with the crossing of the Concord Fault under the Pacheco Creek. Because this active fault is so close to the refinery at Martinez, the proposed terminus of the pipeline, it is essentially unavoidable by any alternate route. A geologist will examine the pipeline trench for evidence of faulting during the centerline survey and during construction in this vicinity.
>
> To mitigate potential damage to the pipeline and to minimize impacts in the event of a break or spill, the design of the pipeline will provide for lateral displacement of up to 30 feet, the maximum expected along this fault. Various engineering approaches will be evaluated; for example, an overhead crossing; or a wide,

shallow, loosely backfilled trench; or a tube-in-tube bored undercrossing. Each of these approaches requires the use of flexible, high-tensile-strength steel pipe. Depending upon the angle at which the fault is crossed, provisions for extension or compression of the pipeline will be made. Oil spill containment equipment identified in the Oil Spill Contingency Plan will be stored near the fault at the refinery. See also measure [64].

- o Effectiveness: These engineering measures will reduce the probability of rupture in the event of a tremor or earth movement.

[64] On the basis of the data on the maximum probable Modified Mercalli Intensities (MMI) for the proposed pipeline route, the pipeline will be designed to tolerate an MMI of IX or X during its lifetime without rupturing.

- o Effectiveness: This measure will prevent damage to the system from surficial seismic events.

In combination, these measures substantially lessen the risk and consequences of a spill in this potentially hazardous and environmentally sensitive area. The applicant submitted a letter to the State Lands Commission on February 9, 1987, which amends their project to include these mitigation measures.

The FEIR/EIS also recommends the inclusion of mitigation measure 7, (as explained in response 8-7, Finalizing Addendum), which would require the installation of a remotely-operated valve upstream and a pressure sensitive check valve on the downstream side of the creek in lieu of the proposed manually operated block valves. Specifically, the FEIR/EIS states:

- [7] The manually operated block valves at Pacheco Creek, which overlies a trace of the Concord Fault, will be automated to reduce shutoff time.

- o Effectiveness: This measure will reduce the size of a spill by the amount that would spill between the time of detection and manual shutoff of the block valves at this environmentally sensitive location. A spill would still be significant.

This measure will reduce the size of a spill by the amount that would spill between the time of detection and manual shutoff of the block valves at this environmentally sensitive location. The State Lands Commission, therefore,

makes this measure a condition (see lease condition No. 2, Oil Spill Protection) of project approval, because it will substantially lessen the consequences of a spill.

The combination of mitigation measures outlined above constitute prudent and reasonable efforts to reduce the risk and consequences of an oil spill at Pacheco Creek. They will not, however, guarantee that such a spill will never happen. If a spill does occur here, its effects would be significant. There are no alternative actions available which would eliminate these effects, except the no action (no project) alternative (see Discussion of Alternatives at the end of this exhibit). Therefore, the Commission also adopts the finding of overriding considerations in Exhibit E.

GEOLOGIC HAZARD

IMPACT: Intense groundshaking during operation of the storage tank could cause instability.

FINDING: 1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.

FACTS SUPPORTING THE FINDING:

An 80,000 barrel oil storage tank is proposed at mid-station in Kern County. The specific site for this storage tank is in an area which is potentially subject to intense groundshaking and has a high groundwater table which could lead to liquefaction. Such geologic hazards could create stability problems with the tank. To reduce the risk of such hazards Mitigation 5 would require a site specific soil mechanics study and special foundation and/or tank design. Specifically, the FEIR/EIS states:

> [5] The 80,000-barrel storage tank at Mid station could be subject to intense ground shaking and the high water table could lead to liquefaction during an earthquake. The tank will be built, following a soil mechanics study of the site, on a specially designed foundation, if necessary, and/or the tank will be compartmentalized to avoid sloshing of the contents, which damaged tanks during the Coalinga earthquake. The tank must be built to withstand an earthquake of at least MMI VIII.
>
> o Effectiveness: Proper design of this particular storage tank will significantly diminish the risk of a major oil spill due to a major seismic event (MMI VIII).

The applicant has, in a letter to the State Lands Commission dated February 9, 1987, amended their application to incorporate this mitigation measure. Therefore, the project, as amended, will substantially lessen the risk of damage to the tank due to geologic hazards. The FEIR/EIS concludes that any residual impacts after such mitigation would be insignificant.

SOILS

IMPACT: Failure of rehabilitation and revegetation due to accelerated soil erosion or slumping in areas of steep terrain.

FINDING: 1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.

3) Specific economic, social, or other considerations make infeasible the mitigation measures or project alternatives identified in the final EIR.

FACTS SUPPORTING THE FINDING:

Construction of the pipeline could cause significant impacts on soils if rehabilitation or revegetation of disturbed areas is prevented for longer than one growing season. Revegetation efforts may fail due to soil erosion or slumping.

The potential for accelerated soil erosion, which could occur as sheet wash, rills, and gullies, exists in all counties where pipeline construction disturbs the soils and vegetative cover on steep and moderately steep slopes. The impact is potentially significant when the soils are thin and revegetation efforts may be only partially successful, or where rapid runoff, wind erosion, and evaporation compound the problem by removing soil materials and creating unfavorable seedbed conditions. The pipeline will be warm, and high permeability and evaporation will reduce soil moisture in the trench area, especially on sloping sites. These conditions are unfavorable for plant growth. Horizon mixing may also exacerbate revegetation problems.

Though the erodibility of soils may vary somewhat, in general, those areas along the proposed route where slopes are moderately steep to very steep (15% slopes and greater) will be especially susceptible to erosion problems. Also, slumping is a potential hazard on slopes greater than 15% where clay soils predominate. this impact potential exists in Alameda and Contra Costa counties, where the slopes are particularly steep (30% to over 50%) and significant slumping and erosion hazard occurs for several miles. Slumping soils and slope instability constitute a hazard to the construction work force, and after

installation, to the pipeline, especially on cut-and-fill or benched sections of the right-of-way.

As initially proposed, the San Joaquin Valley Pipeline included specific provisions for soil conservation plans. The FEIR/EIS recommended additional mitigation measures (9, 10, 11, 12, 14, 15, 16, 65, 66 and 67) to supplement the soil conservation plans. These measures deal with: construction technique in landslide areas; trench fill material on slopes; runoff control; seed mixtures; permanent drainage and erosion control; monitoring revegetated sites; top soil segregation; long-term maintenance; and, oil spills. Specifically, the FEIR/EIS states:

> Project description measures are appropriate, given the commitment made to site-specific soil conservation and revegetation criteria. Certain additional measures which need to be included are described below. None of the measures will be effective in and of themselves, but require implementation on an as-needed basis according to a site-specific conservation plan. Even under natural conditions, the ground vegetation cover (percent coverage) will be incomplete and the erosion hazard high where bare soil is exposed.
>
> [9] Construction of segments of the pipeline through landslide-prone areas as identified on Table 4-2 will be accomplished when the soils are dry to minimize the likelihood of triggering renewed sliding. The pipeline will be placed at a depth greater than the maximum depth of geologically recent sliding at all locations where such sliding is observed during the centerline survey.
>
> o <u>Effectiveness</u>: These measures will prevent impacts from landslides and ensure burial of the pipeline below any unstable overburden.
>
> [10] On steep slopes the trench will not be filled with unconsolidated material that will dessicate due to heat and extreme permeability, will resist revegetation, and will wash out selectively, thus degrading the right-of-way and the surrounding environment at a fast rate. The soil conservation plan will require that revegetation is successfully reestablished. Permanent measures may also be required (see measure [14] below). From among the sites identified in Table 4-3 in Section 4.2.3 as difficult to revegetate, it is assumed that a residual impact with remain significant on all slopes of 18% or more (see Table 6-1).

- Effectiveness: Although this will substantially reduce impacts, the impact will remain significant on steep slopes.

[11] Temporary soil erosion controls will be implemented until revegetation measures are applied during the proper seasonal period.

The potential for water erosion is greatest from November though April. Although disturbed areas of the route will have little potential for erosion from late Spring to mid-Fall, adequate measures for control of runoff should be in place before the winter rains begin and prior to beginning revegetation. In many areas, successful revegetation will be contingent upon the adequacy of the erosion control measures implemented and these will be continued until success is assured.

The SCS has developed standards and specifications for temporary and permanent erosion/sedimentation control, specifically for those regions of California crossed by the pipeline. Temporary soil erosion control structures are designed to temporarily control runoff until disturbed areas have become stabilized. Various temporary structures, such as diversion dikes, interceptor dikes, perimeter dikes, straw bail dikes, interceptor swales, stone outlet structures, sediment basins, and sediment traps, are proven effective measures when correctly implemented and maintained. They will be implemented where and when necessary as indicated in the soil conservation plan.

Seeding of rangeland areas can only be successful in late Fall to early Winter; October and November are the optimal months.

- Effectiveness: Revegetation success is enhanced by seeding during October and November, and by implementing soil erosion controls (temporary or permanent) in advance of winter rains and prior to revegetation.

[12] Specialized recommendations for seed mixtures and seedbed preparation, which have been developed and tested by the SCS, will be incorporated in the right-of-way revegetation procedures. Grasses and seed mix applications recommended for rangeland revegetation in Kern, Kings, and Fresno counties are listed in Table 6-2. Seeding recommendations for Merced,

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Stanislaus, San Joaquin, Alameda, and Contra Costa counties are given in Table 6-3. Generally, it is recommended that 2,000 pounds of straw mulch be applied per acre to newly seeded rangeland/grassland areas. Ammonium sulfate fertilizer should also be applied, at 500 pounds per acre. Native grass mixtures which do not impact existing communities will be specified when required and where necessary to avoid impacts.

- Effectiveness: Site-specific recommendations for right-of-way revegetation will have the highest degree of success. The residual impact will be negligible when the right-of-way is returned to its original condition and properly revegetated.

[14] Severely destabilized areas will require long-term protection. Permanent drainage and erosion control structures will be installed if necessary; examples are water bars, diversions, protected drain outlets, level spreaders, or riprap. The stabilization effort will be continuous until it is effective.

- Effectiveness: Measures will mitigate erosion-induced soil losses or extremely sensitive, unstable sites by soil conservation engineering practices. Residual long-term impact will be insignificant.

[15] The soil conservation plan will identify how and when monitoring of disturbed areas will be conducted and will identify monitoring criteria.

- Effectiveness: The measure will ensure effective monitoring of areas where revegetation will be difficult.

[16] Topsoil segregation from underlying soil materials and return of the topsoil to the surface of the trench area will be practiced during construction of the entire route. Exceptions based on specific, unusual, or prohibitive conditions will be identified in the soil conversation plan. The shallow layer of topsoil, which may be 10 inches or less for certain soils, and the presence of saline subsoils which can contaminate the topsoil require that the depth of topsoiling be specified in the soil conservation plan. The plan will define the depth of topsoil to be conserved, taking into account the desireability of preserving root stock in areas covered by native vegetation.

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- Effectiveness: This measure will reduce or eliminate revegetation problems caused by changes in soil chemistry or characteristics by preventing mixing of soil materials. Topsoil conservation could reduce the requirement for purchasing seed or native planting material. No residual impact.

[65] Right-of-way maintenance will include erosion control and revegetation as described in Section 6.1.2 (measures [9] to [12]), where the vegetative cover is insufficient and erosion is evident.

- Effectiveness: This measure will reduce significant soil impacts to insignificant during operations.

[66] The right-of-way will be maintained in perpetuity, and mitigation measures [65] will be applied as necessary.

- Effectiveness: This measure will avoid soil impacts during abandonment when the pipeline remains in the ground.

[67] Impacts on soils from an oil spill can be significantly reduced if, following removal of oil and highly contaminated soils, these soils are aerated by disc plowing and/or harrowing to ensure that microbial activity and oxidation degrade residual oils from the soils. Following thorough and standard cleanup procedures, the soils will be stabilized and revegetated as previously described for post-construction.

- Effectiveness: These measures will accelerate recovery of the soils, promote new growth, and reduce the impact from a spill.

The applicant has, in a letter to the State Lands Commission dated February 9, 1987, amended their application to incorporate these mitigation measures. Therefore, the project, as amended, will substantially lessen the significant adverse impacts to soils identified in the FEIR/EIS.

However, the FEIR/EIS does conclude that residual impacts will still be significant even with monitoring and continuous rehabilitation efforts. These areas will represent a long-term impact if revegetation is not successful in the first growing season. The residual impact will, however, be limited to the steepest slopes. Because the Contra Loma alternative route traverses less steep terrain, residual impacts there could be expected to be less, although still significant (for a full

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discussion of the Contra Loma Route, see Alternatives at the end of this exhibit). Thus, the only alte ive that would eliminate this impact is the no project alternative. Because all routes would have significant residual impacts, the Commission also adopts the finding of overriding consideration in Exhibit E.

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SOILS

IMPACT: Failure of rehabilitation and revegetation in areas of high soil salinity or alkalinity.

FINDING: 1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.

FACTS SUPPORTING THE FINDING:

Revegetation after construction and during operation is difficult in soils having high salinity or alkalinity. Standard seed/vegetation mixtures will not establish themselves in such soils. Successful revegetation requires the use of tolerant plant species. If revegetation is unsuccessful, significant soil erosion could result. As initially proposed, the San Joaquin Valley Pipeline included provisions for soil conservation plans. The FEIR/EIS recommended additional mitigation measures (13, 15 and 16) to supplement the soil conservation plans. These measures deal with: saline/alkali tolerant seed mixtures and vegetation; monitoring; and, top soil segregation. Specifically, the FEIR/EIS states:

> [13] Saline rangeland and pasture soils encountered by the route in areas of high water table will be revegetated with an adapted species, such as salt grass (Distichlis spicata). Dry saline-alkali soils can be seeded with any of the grasses listed in Tables 6-2 and 6-3, with red brome being the most salt-tolerant.
>
> The soil conservation plan will specify that Atriplex will be reseeded wherever it is removed. Desert saltbush (Atriplex polycarpa) and California buckwheat (Erigonum fasciculatum) are commercially available for restoring shrub areas and are deemed to be of value as wildlife habitat. These plants have been found by the SCS to be hardy and very suitable species for restoring disturbed shrub areas.
>
> Saline soil materials will be returned to the trench first and covered with topsoil to supply an appropriate substrate for the planting material.
>
> o Effectiveness Saline soils will be difficult to revegetate, but can be successfully restored by