

MINUTE ITEM

This Calendar Item No. 28
was approved as Minute Item
No. 28 by the State Lands
Commission by a vote of 2
to 0 at its 11-5-91
meeting.

CALENDAR ITEM

A 61
S 25

28

11/05/91
W 23621
A. Scott

PRC ~~7599~~
7598

8-24-16

GENERAL LEASE - RIGHT-OF-WAY

APPLICANT:

Transwestern Pipeline Company
Terence H. Thorn, President and CEO
1400 Smith Street
Houston, Texas 77002

AREA, TYPE LAND AND LOCATION:

A 0.80±-acre parcel of land in the Colorado River near
Topock, Arizona, and the Interstate Highway 40 river
crossing, San Bernardino County.

LAND USE:

Installation and maintenance of a proposed 24-inch gas
pipeline crossing the Colorado River using a directional
bore method under the bed of the river. The bore is to be
located between the existing Interstate 40 bridge and the
Atchison, Topeka and Santa Fe Railroad Bridge.

TERMS OF PROPOSED LEASE:

Initial period:
Thirty (30) years beginning November 1, 1991.

Surety bond:
\$10,000.

Public liability insurance:
Combined single limit coverage of \$1,000,000 of primary
coverage and \$4,000,000 of umbrella coverage.

CONSIDERATION:

\$250 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. Code Regs. 2003.

APPLICANT STATUS:

Applicant is owner of upland.

PREREQUISITE CONDITIONS, FEES AND EXPENSES:

Filing fee, processing costs and environmental costs have been received.

STATUTORY AND OTHER REFERENCES:

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

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

AB 884:

N/A

OTHER PERTINENT INFORMATION:

1. This project involves the installation and maintenance of a 24-inch gas pipeline under the bed of the Colorado River using the directional bore method. The proposed pipeline will be a connection between an existing 30-inch pipeline in Arizona and a pipeline in California which is currently under construction.

2. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines (14 Cal. Code Regs. 15025), an Initial Study and a Proposed Negative Declaration EIR ND 571, State Clearinghouse No. 91102062, were prepared by staff and circulated for public review through the State Clearinghouse. The Proposed Negative Declaration includes mitigation measures which were incorporated into the project, and are the subject of the Mitigation Monitoring Plan. A copy of this environmental document, including the Mitigation Monitoring Plan, is attached as Exhibit "C".

Based upon the initial Study, modifications made to the project, the Proposed Negative Declaration, and the comments received in response thereto, there is no substantial evidence that the project will have a significant effect on the environment. (14 Cal. Code Regs. 15074[b]).

3. This activity involves lands identified as possessing significant environmental values pursuant to P.R.C. 6370, et seq. Based upon the staff's consultation with the persons nominating such lands and through the CEQA review process, it is the staff's opinion that the project, as proposed, is consistent with its use classification.
4. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines (14 Cal. Code Regs. 15025), the staff has prepared a Proposed Negative Declaration identified as EIR ND 571, State Clearinghouse No. 91102062. Such Proposed Negative Declaration was prepared and circulated for public review pursuant to the provisions of CEQA.

Based upon the Initial Study, the Proposed Negative Declaration, and the comments received in response thereto, there is no substantial evidence that the project will have a significant effect on the environment. (14 Cal. Code Regs. 15074(b))

APPROVALS OBTAINED:

United States Army Corps of Engineers.

FURTHER APPROVALS REQUIRED:

California Fish and Game.

EXHIBITS:

- A. Land Description
- B. Location Map
- C. Negative Declaration ND 571, which incorporates the Mitigation Monitoring Plan

IT IS RECOMMENDED THAT THE COMMISSION:

1. CERTIFY THAT A NEGATIVE DECLARATION, EIR ND 571, STATE CLEARINGHOUSE NO. 91102062, WAS PREPARED FOR THIS PROJECT PURSUANT TO THE PROVISIONS OF THE CEQA AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.
2. ADOPT THE PROPOSED NEGATIVE DECLARATION AND DETERMINE THAT THE PROJECT, AS MODIFIED AND PROPOSED, WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.

3. ADOPT, PURSUANT TO SECTION 21081.6 OF THE P.R.C., THE MONITORING PROGRAM CONTAINED IN EXHIBIT "C" FOR THE PROJECT TO ENSURE COMPLIANCE WITH THE REQUIRED MITIGATION MEASURES.
4. FIND THAT THIS ACTIVITY IS CONSISTENT WITH THE USE CLASSIFICATION DESIGNATED FOR THE LAND PURSUANT TO P.R.C. 6370, ET SEQ.
5. AUTHORIZE ISSUANCE TO TRANSWESTERN PIPELINE COMPANY OF A 30-YEAR GENERAL LEASE - RIGHT-OF-WAY BEGINNING NOVEMBER 1, 1991; IN CONSIDERATION OF ANNUAL RENT IN THE AMOUNT OF \$250, WITH THE STATE RESERVING THE RIGHT TO FIX A DIFFERENT RENTAL ON EACH FIFTH ANNIVERSARY OF THE LEASE; PROVISION OF PUBLIC LIABILITY INSURANCE FOR COMBINED SINGLE LIMIT COVERAGE OF \$1,000,000 OF PRIMARY COVERAGE AND \$4,000,000 OF UMBRELLA COVERAGE; FOR THE INSTALLATION AND MAINTENANCE OF A 24-INCH GAS PIPELINE ON THE LAND DESCRIBED ON EXHIBIT "A" ATTACHED AND BY REFERENCE MADE A PART HEREOF.

INDEX 301
INDEX 3851

EXHIBIT "A"
LAND DESCRIPTION

W23621

A strip of land 50 feet wide, situated in the bed of the Colorado River, in Section 8, T7N, R24E, S.B.M., located in San Bernardino County, State of California and lying 35 feet northerly and 15 feet southerly of the following described centerline:

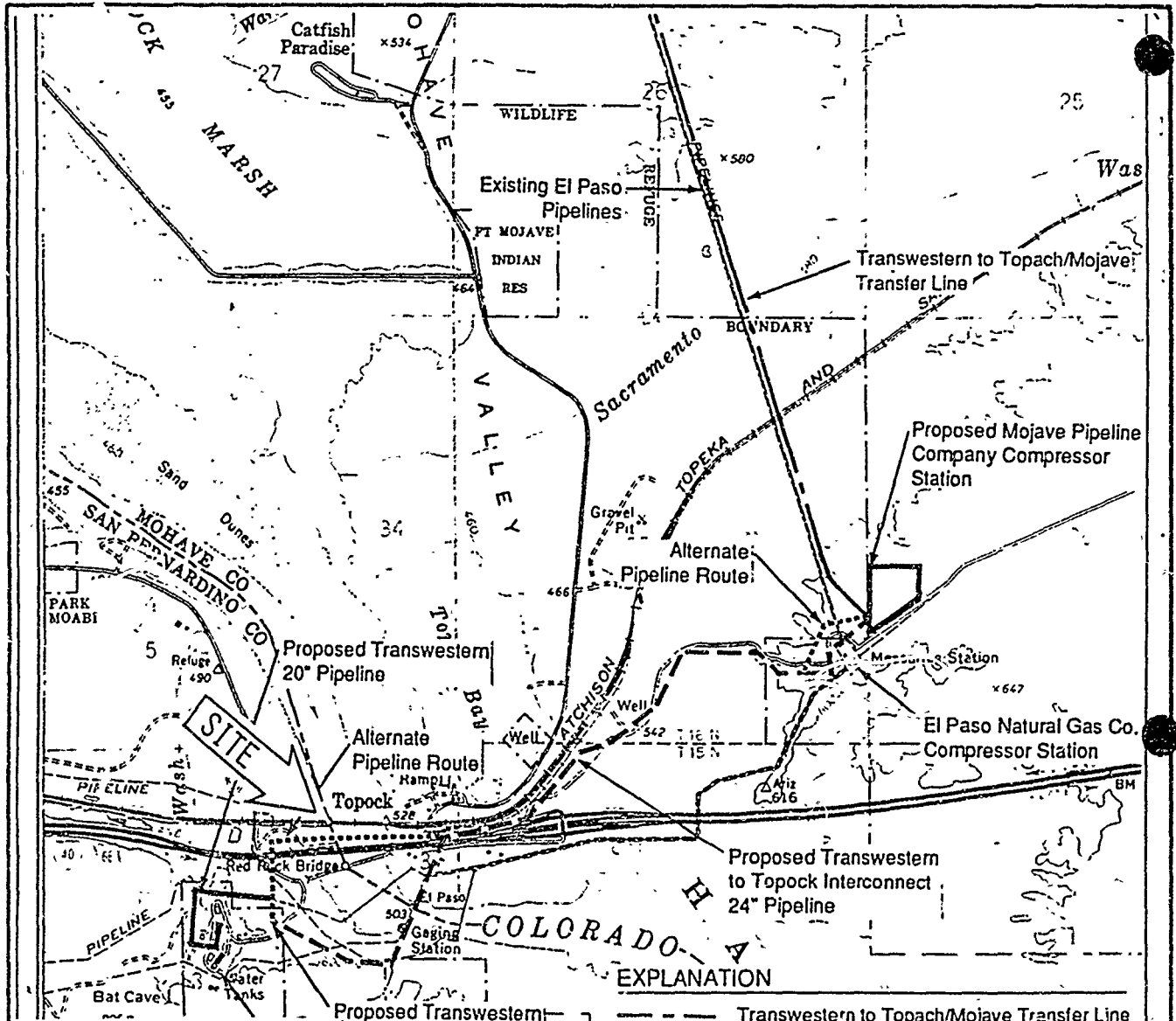
COMMENCING at the West 1/4 of Section 8, Township 7 North, Range 24 East, S.B.M., as said point is delineated on the Official Plat of said Township; thence N73°35'10"E, 4,023.87 feet; thence N01°42'38"W, 600 feet to the POINT OF BEGINNING of the herein described centerline; thence from said point of beginning N88°17'22"E, 1,800 feet to the end of the herein described centerline.

EXCEPTING THEREFROM any portion lying northerly of the Arizona-California Boundary Compact Line as defined in the "Interstate Compact Defining the Boundary between the States of Arizona and California," Chapter 859, Statutes of 1963.

ALSO EXCEPTING THEREFROM any portion lying landward of the ordinary high water mark of the right bank or westerly bank of the Colorado River.

END DESCRIPTION

CALENDAR PAGE	302
WHITE PAGE	3852



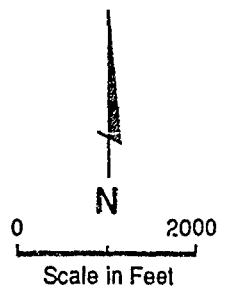
EXPLANATION

---	Transwestern to Topach/Mojave Transfer Line
- - -	Proposed Transwestern to Topock
.....	Alternative Routes Interconnect 24" Pipeline
—	Proposed Transwestern 20" Pipeline

EXHIBIT "B"
W23621



Topock, Arizona - California 1970



PROPOSED INTERCONNECT
Proposed Transwestern to Topock Interconnect Pipeline Project
Transwestern Pipeline Co.
AUGUST 1991

EXHIBIT "C"

STATE OF CALIFORNIA

PETE WILSON, Governor

STATE LANDS COMMISSION

LEO T. McCARTHY, *Lieutenant Governor*
GRAY DAVIS, *Controller*
THOMAS W. HAYES, *Director of Finance*

EXECUTIVE OFFICE
1807 - 13th Street
Sacramento, CA 95814

CHARLES WARREN
Executive Officer


October 10, 1991
File: W 23621
ND 571

**NOTICE OF PUBLIC REVIEW OF A NEGATIVE DECLARATION
(SECTION 15073 CCR)**

A Negative Declaration has been prepared pursuant to the requirements of the California Environmental Quality Act (Section 21000 et seq., Public Resources Code), the State CEQA guidelines (Section 15000 et seq., Title 14, California Code Regulations), and the State Lands Commission Regulations (Section 2901 et seq., Title 2, California Code Regulations) for a project currently being processed by the staff of the State Lands Commission.

The document is attached for your review. Comments should be addressed to the State Lands Commission office shown above with attention to the undersigned. All comments must be received by October 31, 1991.

Should you have any questions or need additional information, please call the undersigned at (916) 322-0354.


MARY GRIGGS
Division of Environmental Planning
and Management

Attachment

STANDARD PAGE 304
MINUTE PAGE 3854

STATE LANDS COMMISSION

LEO T. McCARTHY, *Lieutenant Governor*
GRAY DAVIS, *Controller*
THOMAS W. HAYES, *Director of Finance*

EXECUTIVE OFFICE
1807 - 13th Street
Sacramento, CA 95834
CHARLES WARREN
Executive Officer

PROPOSED NEGATIVE DECLARATION

File: W 23621
ND 371
SCH No. 91102062

Project Title: Transwestern Interconnect Pipeline Project

Proponents: Transwestern Pipeline Company (ENRON)

Project Location: From Topock, Arizona, crossing the Colorado River, to the PG&E Compressor Station, 19 miles east of Needles, San Bernardino County.

Project Description: Construction of a 24" natural gas pipeline (10,000 feet in length) connecting the Transwestern Natural Gas Pipeline System (Topock, Arizona) with the Pacific Gas and Electric Company Distribution System, at a location 19 miles southeast of Needles, California.

Contact Person: Mary Griggs Telephone: 916/322-0354

This document is prepared pursuant to the requirements of the California Environmental Quality Act (Section 21000 et seq., Public Resources Code), the State CEQA Guidelines (Section 15000 et seq., Title 14, California Code Regulations), and the State Lands Commission regulations (Section 2901 et seq., Title 2, California Code Regulations).

Based upon the attached Initial Study, it has been found that:

this project will not have a significant effect on the environment.

mitigation measures included in the project will avoid potentially significant effects.

RECEIVED 305
DATE 3855

ENVIRONMENTAL IMPACT ASSESSMENT CHECKLIST - PART II

Form 13.20 (7/82)

File Ref.: _____

I BACKGROUND INFORMATION

A Applicant: Transwestern Gas Pipeline Company

B Checklist Date: 10 / 09 / 91

C Contact Person: Mary Griggs
Telephone: (916) 322-0354

D Purpose Construct, operate and maintain an interconnect gas pipeline for additional natural gas marketing flexibility and for a direct connection between Transwestern and PG&E natural gas distribution systems.

E Location: Topock Compressor Station, Topock, Arizona to the PG&E Compressor Station southeast of Needles, CA

F Description 12,500 feet of pipeline (10,000 feet @ 24-inch, 2,500 feet @ 20-inch) connecting the two compressor stations with an under-the-river boring crossing of the Colorado River; a project option would cross the river on an existing pipeline bridge.

G Persons Contacted: _____

II ENVIRONMENTAL IMPACTS. (Explain all "yes" and "maybe" answers)

A Earth. Will the proposal result in:

- | | Yes | Maybe | No |
|--|--------------------------|-------------------------------------|-------------------------------------|
| 1 Unstable earth conditions or changes in geologic substructures? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Disruptions, displacements, compaction, or overcovering of the soil? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Change in topography or ground surface relief features? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4 The destruction, covering, or modification of any unique geologic or physical features? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5 Any increase in wind or water erosion of soils, either on or off the site? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 6. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet, or lake? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7 Exposure of all people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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MINUTE PAGE
3856

		Yes	Maybe	No
B Air. Will the proposal result in:				
1	Substantial air emissions or deterioration of ambient air quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	The creation of objectionable odors?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C. Water. Will the proposal result in:				
1	Changes in the currents, or the course or direction of water movements, in either marine or fresh waters?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Alterations to the course or flow of flood waters?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Change in the amount of surface water in any water body?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Alteration of the direction or rate of flow of ground waters?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	Substantial reduction in the amount of water otherwise available for public water supplies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9	Exposure of people or property to water-related hazards such as flooding or tidal waves?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	Significant changes in the temperature, flow or chemical content of surface thermal springs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D. Plant Life. Will the proposal result in:				
1	Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Reduction of the numbers of any unique, rare or endangered species of plants?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Reduction in acreage of any agricultural crop?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
E. Animal Life. Will the proposal result in:				
1	Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, or insects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Reduction of the numbers of any unique, rare or endangered species of animals?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Deterioration to existing fish or wildlife habitat?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
F. Noise. Will the proposal result in:				
1	Increase in existing noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Exposure of people to severe noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
G. Light and Glare. Will the proposal result in:				
1	The production of new light or glare?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
H. Land Use. Will the proposal result in:				
1	A substantial alteration of the present or planned land use of an area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
I. Natural Resources. Will the proposal result in:				
1	Increase in the rate of use of any natural resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Substantial depletion of any nonrenewable resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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J *Risk of Upset.* Does the proposal result in:

Yes Maybe No

- 1. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals, or radiation) in the event of an accident or upset conditions?
- 2. Possible interference with emergency response plan or an emergency evacuation plan?

K *Population.* Will the proposal result in:

- 1. The alteration, distribution, density, or growth rate of the human population of the area?

L *Housing.* Will the proposal result in:

- 1. Affecting existing housing, or create a demand for additional housing?

M *Transportation/Circulation.* Will the proposal result in:

- 1. Generation of substantial additional vehicular movement?
- 2. Affecting existing parking facilities, or create a demand for new parking?
- 3. Substantial impact upon existing transportation systems?
- 4. Alterations to present patterns of circulation or movement of people and/or goods?
- 5. Alterations to waterborne, rail, or air traffic?
- 6. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?

N *Public Services.* Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:

- 1. Fire protection?
- 2. Police protection?
- 3. Schools?
- 4. Parks and other recreational facilities?
- 5. Maintenance of public facilities, including roads?
- 6. Other governmental services?

O *Energy.* Will the proposal result in:

- 1. Use of substantial amounts of fuel or energy?
- 2. Substantial increase in demand upon existing sources of energy, or require the development of new sources?

P *Utilities.* Will the proposal result in a need for new systems, or substantial alterations to the following utilities:

- 1. Power or natural gas?
- 2. Communication systems?
- 3. Water?
- 4. Sewer or septic tanks?
- 5. Storm water drainage?
- 6. Solid waste and disposal?

Q *Human Health.* Will the proposal result in:

- 1. Creation of any health hazard or potential health hazard (excluding mental health)?
- 2. Exposure of people to potential health hazards?

R *Aesthetics.* Will the proposal result in:

- 1. The obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?

S *Recreation.* Will the proposal result in:

- 1. An impact upon the quality or quantity of existing recreational opportunities?

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T *Cultural Resources.*

Yes Maybe No

- 1. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archeological site?
- 2. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?
- 3. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?
- 4. Will the proposal restrict existing religious or sacred uses within the potential impact area?

U *Mandatory Findings of Significance.*

- 1. Does the project have the potential to degrade the quality of the environment, reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?
- 2. Does the project have the potential to achieve short term, to the disadvantage of long-term, environmental goals?
- 3. Does the project have impacts which are individually limited, but cumulatively considerable?
- 4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

III. DISCUSSION OF ENVIRONMENTAL EVALUATION *(See Comments Attached)*

Please refer to the pages in the Initial Study indicated below for those items requiring further discussion:

II.A.2.	pg. 31 and 50
II.A.5.	pg. 31 and 50
II.B.1.	pg. 31 and 51
II.C.5.	pg. 32 and 51-52
II.E.2.	pg. 32-43 and 52-56
II.R.1.	pg. 46 and 58
II.T.1.	pg. 46 - 49 and 58
II.T.2.	pg. 46 - 49 and 58

Please refer to Section 7 in the Initial Study for a discussion of the resource areas where impacts are not expected.

IV. PRELIMINARY DETERMINATION

On the basis of this initial evaluation:

- I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION will be prepared
- I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Date: Oct. 1 09 / 1991

Mary Griggs
 For the State Lands Commission
 COVER PAGE --- 309
 MINUTE PAGE --- 3859
 Form 1320 (7/82)

**STATE OF CALIFORNIA
STATE LANDS COMMISSION
INITIAL STUDY FOR THE TRANSWESTERN
TO TOPOCK INTERCONNECT PIPELINE PROJECT**

SAN BERNARDINO COUNTY

1. INTRODUCTION

The proposed Transwestern Interconnect Pipeline Project represents a link in the natural gas pipeline infrastructure of the southwestern United States (Exhibit A). The project is located within Mohave County, Arizona and San Bernardino County, California, and crosses the Colorado River near the town of Topock. The project area is approximately 19 miles east of Needles, California, and roughly parallels the Interstate 40 and Atchison, Topeka and Santa Fe Railway (AT&SF) transportation corridors in the region. The purpose of the project is to provide additional natural gas marketing flexibility and a direct connection between the Transwestern Pipeline system and the Pacific Gas and Electric Company (PG&E) California interstate distribution system (Exhibit B). The Project will be integrated into a previously approved pipeline right-of-way (ROW) for which significant environmental studies have been completed. These studies include the Mojave-Kern River-El Dorado Natural Gas Pipeline Projects Final Environmental Impact Report/Environmental Impact Statement (Final EIR/EIS), published in December 1987, and supplemented in October 1988, and the California State Lands Commission (SLC) Final Amendment for the Mojave-Kern River Pipeline Projects EIR (1991), State Clearinghouse Number 85081912, which was certified by the State Lands Commission on March 6, 1991.

The Proposed Project includes approximately 10,000 feet of 24-inch diameter gas pipeline, 2,500 feet of 20-inch diameter gas pipeline, a new Meter Station, and a 700-foot access road. The Project connects the Mojave Topock Compressor Station with the PG&E Compressor Station. An optional routing of the pipeline has also been proposed for the Project. The only difference between the optional routing and the proposed routing in this study is the method used to cross the Colorado River. The optional routing crosses the river on an existing pipeline bridge; the proposed project implements directional drilling to place the pipeline under the Colorado River.

This Initial Study identifies the potential environmental impacts associated with both the boring routing (designated as the Proposed Project) and the bridge routing (designated as the Project Option in this study). The preliminary geotechnical engineering reports, field testing and drilling evaluations have determined that the boring will be technically feasible, if carefully planned and executed (Hair, 1991).

This study assumes that the boring will be feasible; however, if the boring is not found to be technically feasible during drilling, the Project Option would become the Proposed Project. Section 5 of this study describes the Project Option.

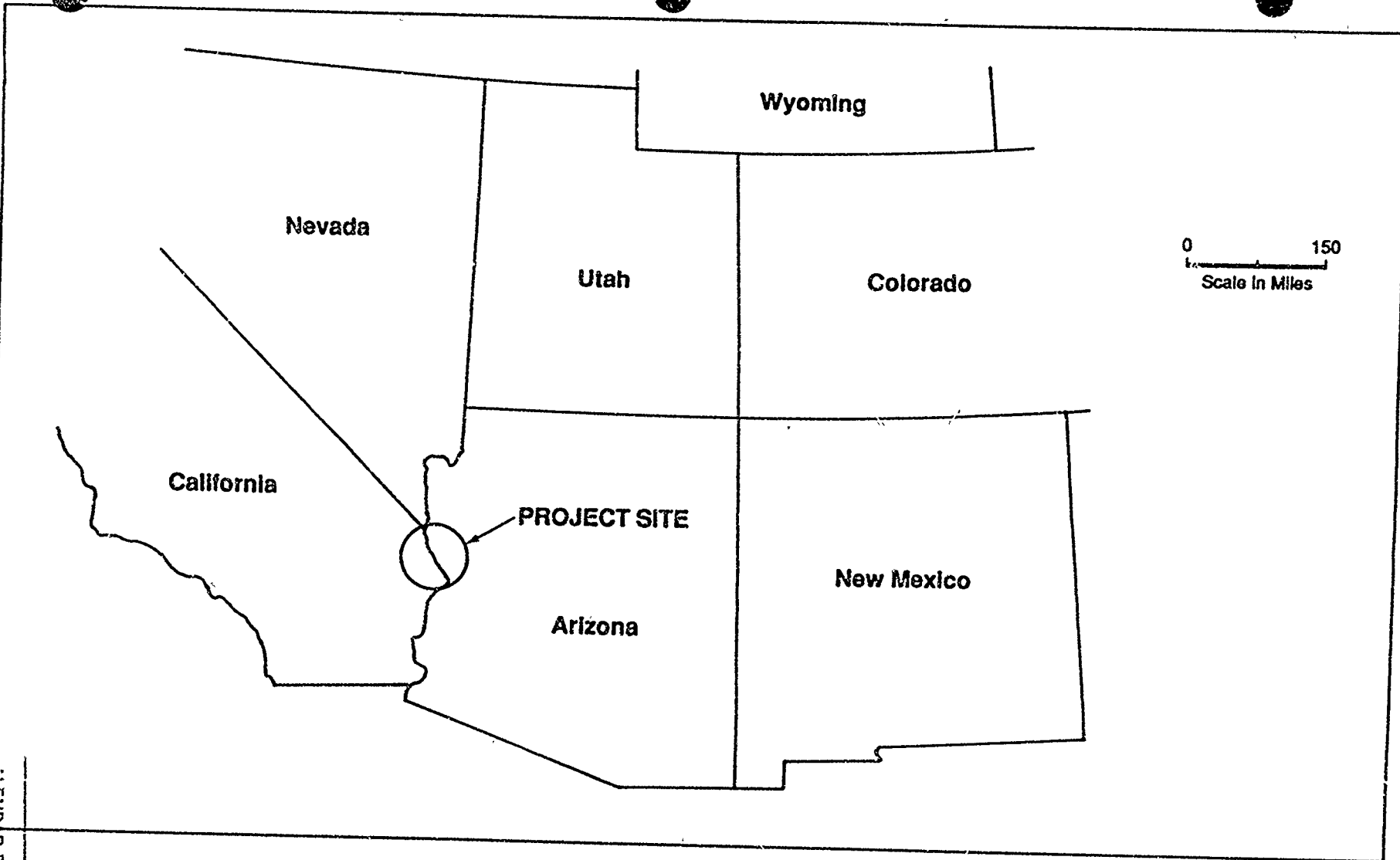
In addition to the Project Option discussion in Section 5, the following sections describe the Proposed Project:

- Section 2 – Proposed Project Description and Location
- Section 3 – Purpose of the Proposed Project
- Section 4 – Description of the Facilities, Operations and Maintenance
- Section 5 – Overview of the Project Option and Potential Impacts
- Section 6 – Present Environment
- Section 7 – Environmental Impacts of the Proposed Project and Project Option
- Section 8 – Unavoidable Adverse Effects
- Section 9 – Mitigation Measures
- Section 10 – Organizations Contacted
- Section 11 – References

In general, the information in this study is derived from previous environmental studies. This study assumes that the placement of much of the Proposed Project pipeline within the approved Mojave Transfer Pipeline ROW will limit potential impacts in these areas to impacts previously addressed in the environmental documents referenced above. This study, however, also addresses the effects of the directional drilling and the requirements for new ROW.

2. THE PROPOSED PROJECT DESCRIPTION AND LOCATION

The Transwestern Pipeline Company (Transwestern) has requested an administrative transfer from the Bureau of Land Management to assume responsibility for an approved ROW Grant to construct, operate and maintain a 24-inch pipeline, approximately 17 miles in length, connecting its existing mainline facilities to the Mojave Pipeline Company's (Mojave) Topock Compressor Station, all of this occurring within Arizona. However, Transwestern now proposes to construct an additional 10,000 feet of 24-inch line, from the Topock Compressor Station, crossing under the Colorado River in a directionally-drilled bore, to a proposed Meter Station site for deliveries to both PG&E and Southern California Gas Company (SOCAL). Approximately 500 feet of 20-inch pipe will be constructed from the proposed meter station to the SOCAL Meter Station, and an additional 2,000 feet of 20-inch pipe



0 150
Scale in Miles

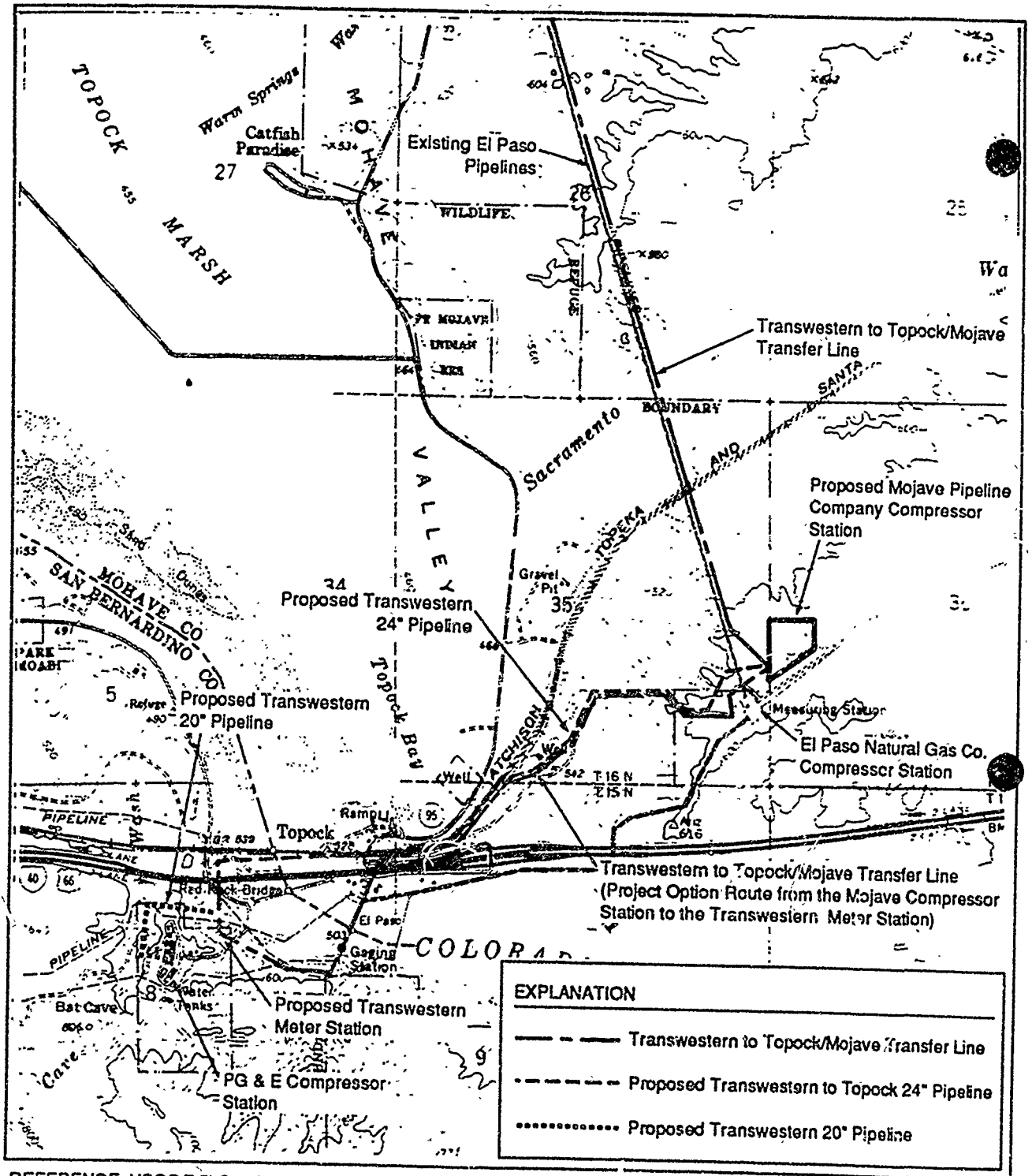
PROJECT SITE LOCATION

Proposed Transwestern to Topock
Interconnect Pipeline Project
Transwestern Pipeline Co.

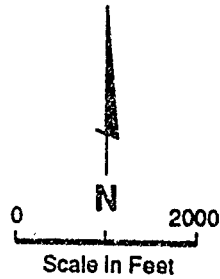
OCTOBER 1991

EXHIBIT A

RENDER PAGE 312
ROUTE PAGE 3862



REFERENCE: USGS 7.5' Quadrangle, Topock, Arizona - California 1970 (screened at 50% for clarity)



PROPOSED INTERCONNECT

Proposed Transwestern to Topock
Interconnect Pipeline Project
Transwestern Pipeline Co.

OCTOBER 1991

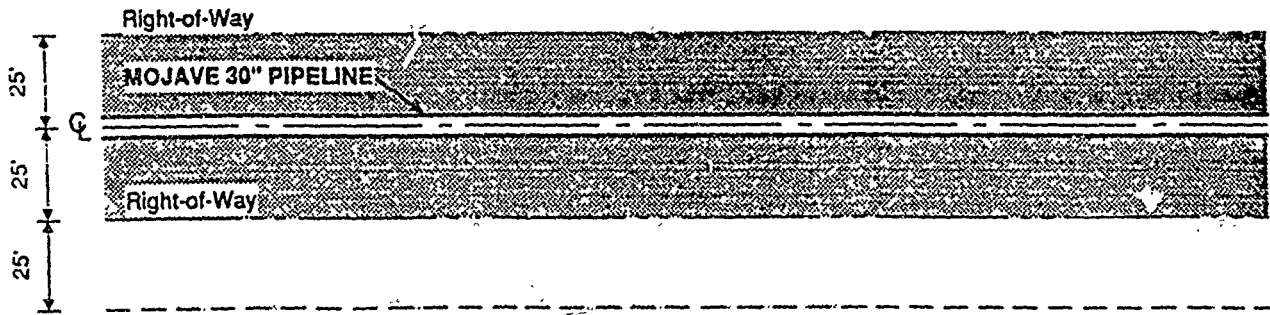
CALENDAR PAGE

EXHIBIT B

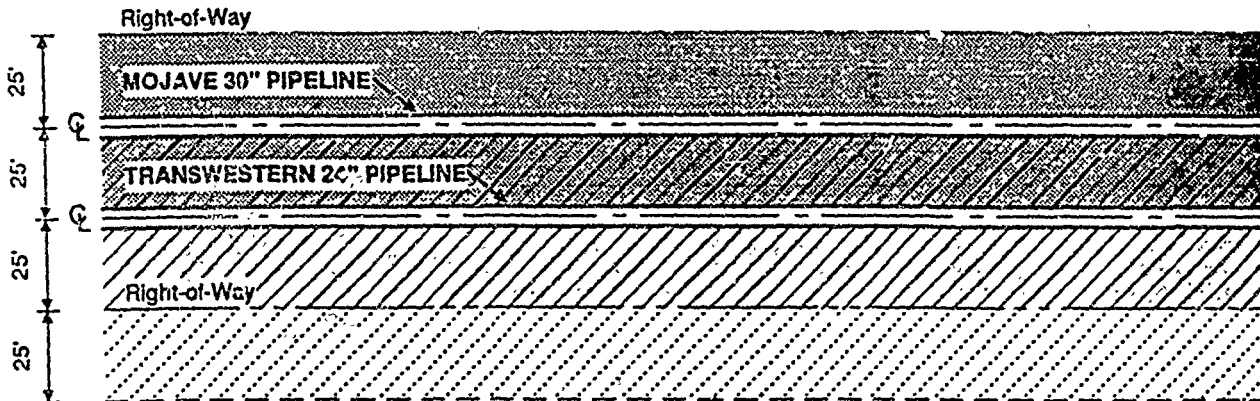
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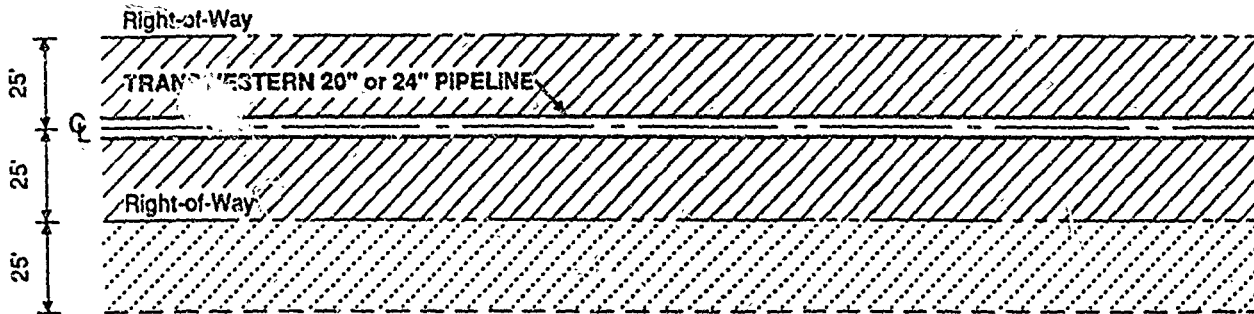
EXISTING MOJAVE RIGHT OF WAY







PROPOSED TRANSWESTERN RIGHT OF WAY (ADJACENT TO MOJAVE ROW)



PROPOSED TRANSWESTERN RIGHT OF WAY (NEW ROW LOCATIONS)



EXPLANATION

-  Permanent ROW Area
-  Temporary Work Space
-  Area of Construction Disturbance for Transwestern Pipeline (Permanent ROW)
-  Area of Construction Disturbance for Transwestern Pipeline (Temporary)

RIGHT-OF-WAY DISTURBANCE

Proposed Transwestern to Topock
Interconnect Pipeline Project
Transwestern Pipeline Co.

ENDAR PAG OCTOBER 1991

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from the site of this proposed Meter Station will be constructed to the PG&E Compressor Station, southeast of Needles, California.

The 17 miles between the Transwestern mainline and Mojave's Topock Compressor Station was approved as the "Mojave Transfer Line" component of the Mojave Pipeline Project. This component was addressed in detail by the Federal Energy Regulatory Commission (FERC) and the SLC in the Final EIR/EIS. Therefore, this Initial Study addresses the existing environment between the Topock Station and the proposed Meter Station (approximately 10,000 feet) and between the proposed Meter Station and the PG&E Compressor Station and the SOCAL Meter Station (approximately 2,500 feet).

The proposed 24-inch diameter pipeline segment connects with the Mojave Transfer Line at the Topock Station, approximately 8,000 feet east of the Colorado River. It will be constructed adjacent to the approved Mojave Pipeline between the Topock Station and the point where the Mojave Line turns southwest and crosses under I-40. Mojave and Transwestern have agreed to share a portion of the currently approved Mojave 75-foot-wide construction ROW for this segment of the pipeline. In addition to the shared, 50-foot-wide permanent ROW, Transwestern will require an additional, temporary 25-foot-wide construction workspace, which will result in a 100-foot-wide ROW for the Mojave Project, the proposed project and project option. The entire Transwestern pipeline will require a permanent operational 50-foot-wide ROW and a temporary 25-foot-wide construction ROW (Exhibit C).

The proposed pipeline continues west and crosses under the Colorado River in a directional boring just north of I-40, then turns south to the proposed Meter Station. The undercrossing of the river and the connection with the Transwestern Meter Station will require new ROW and a boring under I-40 at Topock, California. The terminus of the proposed pipeline at the PG&E Compressor Station is approximately 19 miles east of Needles, California. The general location of the project is indicated on Exhibit A, and the proposed pipeline route is presented on Exhibit B. The Transwestern to Topock/Mojave Transfer Line, shown on Exhibit B, has been previously approved, and the Mojave Pipeline Company Compressor Station has been approved and is under construction.

3. PURPOSE OF THE PROPOSED PROJECT

The purpose of the proposed pipeline project is to transport natural gas from the Transwestern mainline in Arizona to the proposed Meter Station site in California, providing deliveries to the PG&E and SOCAL systems in California. The project is intended to provide additional natural gas marketing flexibility beyond that accomplished by the Mojave Pipeline Project, and establish a direct connection between the Transwestern Pipeline interstate natural gas pipeline system and the PG&E California interstate natural gas distribution system.

Several other pipeline projects have been proposed in the vicinity of the proposed Transwestern pipeline project. They are the Mojave, El Paso, Transwestern and Kern River pipelines, and they are described in more detail in the Final EIR/EIS.

The Mojave Pipeline, which is currently under construction, will extend from western Mohave County in Arizona across San Bernardino County and into Kern County, California. The route will encompass 383 miles of pipeline construction.

The Mojave Pipeline will receive gas supplies from El Paso Natural Gas Company (El Paso) and/or Transwestern in Mohave County, Arizona.

Transwestern proposes to loop 11 segments of its existing lines between Pyote, Texas, and Needles, California. Approximately 356 miles of pipeline construction will be completed in order to tie into either the Mojave Transfer Line or the El Dorado North Receipt Lateral.

The Kern River pipeline, which is currently under construction, will begin at Northwest's Muddy Creek Station near Opal, Wyoming, and will run south-southwest across Utah and Nevada, and west across the Mojave Desert to its connection with a pipeline to be shared with the Mojave Pipeline in Daggett, California. The gas in the Kern River system will come from major existing sources in the Overthrust Belt gas fields in southwest Wyoming and northeast Utah, and western Canadian gas fields.

Existing pipelines in the general vicinity include the following: two PG&E pipelines which cross the Colorado River (one crosses on the suspension bridge to be used by the Project Option; the other on a separate bridge), and a SOCAL pipeline.

4. DESCRIPTION OF FACILITIES, OPERATIONS AND MAINTENANCE

A. Proposed Facilities

The following project components will be associated with the construction, operation, and maintenance of the proposed pipeline project:

- Approximately 10,000 feet of 24-inch diameter pipeline (Interconnect) will be constructed from the Mojave Topock Compressor Station to the proposed Transwestern/PG&E Meter Station located in Section 8, T.7N.R24E. in San Bernardino County, California. Approximately 1,500 feet will be placed in a boring under the Colorado River; the remainder will be buried using standard trenching procedures.

- Approximately 2,500 feet of 20-inch diameter buried pipeline will be constructed from the proposed Transwestern/PG&E and SOCAL Meter Station to the PG&E Compressor Station.
- Construction of a Transwestern/PG&E and SOCAL Meter Station near the PG&E Compressor Station will be constructed as part of the proposed pipeline project; the Station will disturb approximately two acres.
- Existing roads or the ROW itself will be used for surface travel. At this time, Transwestern anticipates construction of a new 700-foot access road off of the frontage road for the pipe-stringing area on the California side (see Exhibit D). Existing access roads will be utilized for construction of the proposed Transwestern/PG&E and SOCAL Meter Station. Use or construction of any roads across public lands will require a ROW easement from the appropriate governmental body.

B. Construction

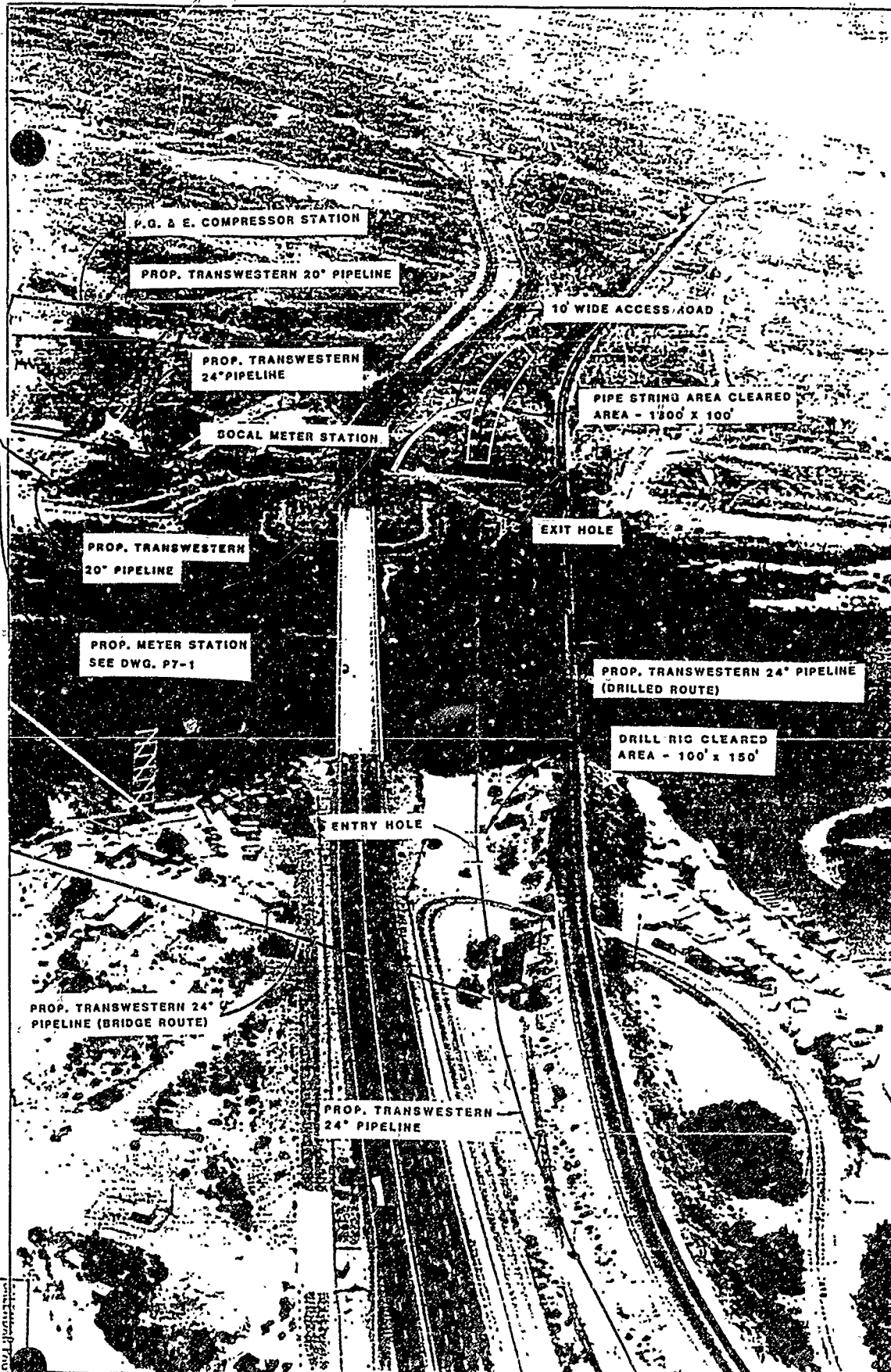
General Pipeline Construction Techniques (as quoted from the Final EIR/EIS):

The following are general pipeline construction methods. It should be noted that portions of this discussion may not pertain to this project specifically, but are included here for the purpose of clarity.

"The first step in construction of a pipeline is to locate, design, and construct/reconstruct access roads where needed. On federal and state lands, such roads will be constructed/reconstructed to the standards specified by concerned federal and state agencies. The second step in construction of a pipeline is to prepare the ROW. Following an on-ground engineering staked survey line, a construction ROW, [75 feet wide, is] be cleared and contoured. Above-ground vegetation and obstacles [are] . . . cleared [only so much as] to allow safe and efficient use of construction equipment:

"Storage areas required for equipment, pipe, and other materials [are] acquired through private permission or temporary use permits from appropriate surface management agencies."

"A major portion of the work associated with the construction of an underground transmission pipeline is the excavation task. With few exceptions the entire transmission pipeline [is] buried in a continuous trench. The process of excavating a trench [varies] depending on soils and terrain. Where possible a self-propelled trenching machine [is] used for excavation.



FEATURES OF PROPOSED PROJECT

Proposed Transwestern to Topock
Interconnect Pipeano Project
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"The width and depth of a trench vary according to the diameter of the pipe used, the soil type, and the minimum cover requirements of the pipe. Typically, depths range from 60 to 66 inches and vary in width from 42 to 54 inches. When rock or rocky formations are encountered, tractor-mounted mechanical rippers are used for excavation. In areas where mechanical rippers are not practical or insufficient, blasting [is] employed. Draglines [are] also used. Rock formations along the ROW . . . necessitate the use of blasting. Strict safety precautions [are] adhered to when blasting to clear the ROW. To prevent damage to adjacent structures, power and communication lines, blasting mats (blankets) [are] used. Extreme care [is] exercised to avoid damage to underground structures, cables, conduits, pipelines, and underground water courses or springs. Adequate notice [is] provided to adjacent landowners or tenants in advance to protect property or livestock. All work [is] performed in complete compliance with state and local codes or ordinances. Permits required for blasting [are] secured before any work is performed. Blasting activity . . . adhere[s] to all manufacturer's prescribed safety procedures and industry practices."

"In areas where there is a need to separate top and subsoil, a two-pass trenching process [is] used. The first pass remove[s] topsoil and the second pass . . . remove[s] subsoil with soils from each of the excavations being placed in separate banks. This allows for proper restoration of the soil during the backfilling process. Spoil banks . . . contain gaps to prevent storm runoff water from backing up or flooding."

"Mainline Construction:"

"The line of pipe [is] strung either prior to or after ditching. Regardless of the sequence, the operation of stringing involves the placement of coated pipe, valves, and fittings from the storage yard along the ROW. Pipe will be loaded onto trucks, transported to the ROW, and unloaded by tractors fitted with side booms.

"After the joints of pipe are strung along the trench and before the sections of pipe are joined together, individual sections of the pipe are bent to allow for uniform fit of the pipeline with the varying contours of the bottom of the trench. A track-mounted, hydraulic pipe-bending machine can tailor the shape of the pipe to conform to the contours of the terrain. The actual bend is made by a set of clamps, or shoes, that grip the outside surface of the pipe at the point where the bend is to be made. Where multiple or complex bends are required in a section of pipe, that section of the pipeline is fabricated in the factory."

"Installation of the pipe, following the bending, commences with swabbing the pipe, lining it up for welding, holding it in position until it is securely joined by welding, completing the welds, and lowering it onto skids or blocks."

"One of the most crucial phases of pipeline construction is the welding process. The overall integrity of the pipeline depends on this process. Welding is the mechanical fusing of the individual sections of pipe to form the pipeline. Each weld must exhibit the same structural integrity with respect to strength and ductility. Experienced welders highly proficient in pipeline welding are continually tested to maintain the rigorous qualification for certification of pipeline welding."

"Every weld is inspected by quality control personnel to determine the quality of the weld. Radiographic examination is a nondestructive method of inspecting the inner structure of welds and determining or inferring the presence of defects. Contractors specializing in radiographic inspection [are] engaged. Defects [are] repaired or removed as outlined in American Petroleum Institute (API) 1104. Governmental regulations require nondestructive testing of all welds in areas such as inside railroad or public road ROWs and in certain other areas. The regulations largely follow industry practice. Radiographic inspections [are] performed as outlined in 49 CFR, Part 192 - Transportation of Natural and Other Gas by Pipeline."

"Each weld seam must be protected from corrosion. Once field coating or wrapping of the weld (compatible with factory-applied coating methods) is completed, the pipeline is ready to be lowered into the trench. Special side boom tractors spread out along the pipeline simultaneously lift the line and move it over the open trench. The string of pipe is then lowered into the trench. Great care is taken to prevent any damage to the pipe coating during this stage of construction."

"After the pipe has been lowered into the ditch, the trench will be backfilled. Backfill [is] placed by proven techniques to avoid potential settlement that . . . leave a surface depression."

"The final phase of pipeline construction . . . involves cleanup and restoration of the ROW. The ROW [is] cleaned up by removal and disposal of construction debris and surplus materials. Restoration of the ROW surface" [involves recontouring to stabilize slopes, putting windrowed vegetation back onto the ROW and imprinting].

"Markers showing the exact location of the pipeline [are] installed at fence crossings and road crossings in order to identify the owner of the pipeline and convey emergency information in accordance with applicable governmental regulations. Special markers providing information and guidance to aerial patrol pilots [are] also installed."

"After burial, the pipeline [is] tested to ensure that the system is capable of withstanding the operating pressure for which it was designed. This procedure is

hydrostatic testing and [is] carried out by the construction contractor. Hydrostatic test water will be purchased from the municipal water supply at the Golden Shores Resort on the Arizona side of the river, less than one mile north of the Interstate Highway 40. The total volume of water to be purchased for the hydrostatic tests is approximately 795,000 gallons. The hydrostatic test water for the following sections of the pipeline will be transported and discharged at the proposed scrubber station site in Section 10, T16N, R21W, Mohave County, Arizona:

- Transwestern to Topock 24" Pipeline (Proposed Project and Project Option)
- Transwestern 24" Pipe for Colorado River Bore (Proposed Project)
- Transwestern to SOCAL 20" Pipeline (Proposed Project and Project Option)

The hydrostatic test water for the following section of the pipeline will be discharged into a 38-foot x 38-foot x 3-foot deep discharge pit on the west side of the PG&E Compressor Station. The water will be discharged at a rate of 2500 gallons per minute with a splash barrel to control the flow rate and hay bales to trap solids.

- Transwestern to PG&E 20" Pipeline (Proposed Project and Project Option)

The hydrostatic test water for the following meter stations will be discharged inside the meter station fence at a rate controlled by the meter station piping valves. Hay bales will also be used to trap solids. The topography of the area will eliminate the possibility for discharge water to run off into the Colorado River.

- Transwestern to PG&E and SOCAL Meter Stations

"Internal test pressures [are] in accordance with Department of Transportation (DOT) Title 49 CFR, Part 192. The pipeline [is] tested after backfilling and all construction work that . . . affect[ing] the pipe had been completed. Testing at major river crossings, e.g., [Colorado River is] done prior to installation and again after installation. The test water [is] disposed of in accordance with applicable federal, state, and local agency requirements. The pipeline [is] ready for operation at the conclusion of the hydrostatic testing."

"Road and Railroad Crossings:"

"When crossing roads with light traffic and where permitted by local authority or owners of private roads, the open cut method [is] used. In those instances detours [are often] required. The boring method [is] used to cross all major highway systems and railroads. In the boring method, each side of the crossing is excavated for the boring equipment. Pipe casing sized larger than the carrier pipe is used as a sleeve for the boring auger. Where traffic load factor and soil conditions permit, heavy

walled pipe [is] used instead of casing the pipe. The cased crossings . . . have vent pipes, cathodic protection, and would be appropriately marked.

"Construction Materials Handling:"

"A major logistics problem associated with the construction of a pipeline is the transportation, stocking and preparation of the pipe before it can be taken into the field for installation. Typically the pipe is manufactured by the factory in lengths up to forty feet. This length is generally the legal maximum length that can be transported by carriers over federal and state highways. The number of pieces that can be carried on a truck depends on the diameter and weight of the pipe. In the case of 36-inch outside diameter (O.D.) pipe, up to five segments are carried at a time on the transport truck."

"Pipe yards and staging areas are set up to receive and prepare the pipe for shipment to the field. To facilitate the handling and stringing of pipe along the ROW, two pipe sections [are] joined (welded) together at the staging area. This longer section of pipe (80 feet) is then strung out along the ROW. The pipe is inspected for damage to the protective coating applied at the factory. If damaged, the coating is repaired."

Pipeline Construction Techniques Specific to the Proposed Project:

Construction will begin after ROW easements, grants, and all required clearances have been obtained.

Construction activities will be confined to a area of disturbance 75 feet wide, 50 feet of which will be permanent and will lie within the already existing 75-foot-wide Mojave construction ROW where the lines parallel, resulting in a total disturbance area 100 feet wide. This will result in a 25-foot-wide zone of new, temporary disturbance paralleling the Mojave 75-foot construction ROW. In addition, there will be a 75-foot wide disturbance in new ROW locations; construction of the 2,500-foot of 20-inch pipeline will also require a 75-foot-wide area of disturbance. A 75-foot-wide permanent ROW will remain after construction of both pipelines, and a 50-foot-wide permanent ROW will remain after construction in new ROW locations. Construction activities will require clearing above-ground vegetation and obstacles to allow safe and efficient operation of the construction equipment. This clearing will take place only within the 75-foot construction disturbance (Exhibit C).

The proposed project involves placing the proposed pipeline beneath the Colorado River rather than routing it across the existing pipeline suspension bridge used for the Mojave Line, thereby eliminating the land use impact of reduced bridge capacity for pipeline routing (see Exhibit D for a photograph of the site). Approximately 15.6 acres of land outside of the Mojave ROW will be disturbed (pipe pull-through area

about 8.6 acres, boring under Highway 40 about 6 acres, and extra workspace associated with highway boring about 1 acre). Directional drilling will be used to create the underground tunnel (bore) through which the pipeline will be installed.

Preliminary geotechnical studies of the riverbank have been completed, and they indicate a very dense sandy gravels and gravel-sand-clay conglomerate stratum beneath the shallower river sand/gravels. Although a bore is typically difficult under these conditions, the angular/weak character of the gravel at the proposed boring depth will support a precise drilling operation (Hair, 1991). Final studies, however, and an economic analysis are required before a final feasibility determination can be made. If boring does not prove feasible, the option of crossing on the suspension bridge, discussed in this analysis, will be pursued.

The directional drilling will not result in any direct impact on the river bottom or banks. The crossing is proposed between Interstate Highway 40 and the AT&SF Railroad and will place the top of the pipeline approximately 10-30 feet or more below the bottom surface of the river.

The bank penetration points for the bore will be between 400 and 600 feet from the existing edges of the Colorado River channel. The depth of the bore will be 10 or 30 feet, as decided by the contractor at the time of drilling. 10-foot bores are placed in "traditionally" drillable sand and are advantageous in that they are easily drilled. The soil 10 feet beneath the Colorado River will support this bore. A 10-foot bore, however, may be disadvantageous in the proposed project in that its execution is hampered by the cobble zone on the Arizona bank, the very slight risk of river scour (a small risk since the river is heavily managed), and the risk of mud seeps into the ground or into the river (Hair 1991).

A 30-foot bore is usually placed in angular pea gravel or weakly cemented conglomerate, and the benefits to the proposed project of such a bore would include avoiding much of the Arizona bank cobble, and obtaining security from vertical river activity. The disadvantage to drilling a 30-foot bore would be the difficulty of drilling through the deeper gravel conglomerate beneath the Colorado River.

To accomplish the directional bore, the drilling system will be set in place on the Arizona side of the river and a pilot hole drilled to the California side. The pipe stringing and welding will be set up on the California side on the high cliff on the west side of the river. The pipe lay-down workspace will occupy a disturbed area approximately 100 feet wide between the Interstate 40 and the railroad ROWs and between Cave Wash and the high cliff, just west of the Colorado River (see Exhibit D).

The pipe stringing on the California side will require grading a 700-foot access road from the frontage road leading to PG&E Compressor Station up to the top of the

cliff. This road will be parallel and adjacent to Interstate Highway 40 and will provide access for equipment. The activities planned for this road will not interfere with normal traffic use of Interstate Highway 40.

After drilling, stringing, and welding are completed, the area will be cleaned of debris and restored to its original condition. All drilling fluids will be removed and disposed of in an approved disposal site. The access road will be graded and the area allowed to naturally revegetate (refer to Final FEIS/EIR Amendment (1991), which stipulates that "no mulching, fertilizations or seeding shall take place within the Mojave Desert beyond the replacement of windrowed vegetation which will be mixed with the topsoil."). A fence barrier will be installed at the entrance to the access road to deter future use.

See the Final EIR/EIS (Section 2.1) for more details on pipeline construction.

C. Operation and Maintenance

The information in this section and much of the information in Section D is quoted from the Final EIR/EIS. Operation and maintenance procedures similar to those discussed in the Final EIR/EIS will be developed for the proposed pipeline facilities. "Manuals explaining procedures will also be developed and made available to all operating personnel. A thorough program [will] be outlined to deal with any type of emergency . . . occur[ing] during the operation of the pipeline. Copies of this plan will be provided to all appropriate federal and state agencies. Materials must be stored in nearby locations to make quick repairs if a leak occurs. Communications for the proposed pipeline system will be tied in to compressor stations which will be operated on a pressure set point control. The mainline valves will be provided with gas hydraulic operators. Pressure and flow rates will be continuously monitored for dispatching purposes and in order to detect leaks. Block valves will be located according to DOT requirements." The wall thickness of the pipe will also vary from 0.5 inches at the river crossing to 0.312 inches for most of the rest of the pipeline. "Radio communication and mobile field units will be available among stations to assist in dealing with emergency situations."

"Certain operations and maintenance plans and schedules [will] be implemented to monitor and ensure safe operation. The permanent ROW will be available to ensure reasonable access to facilitate any necessary pipeline maintenance. The pipeline will be inspected regularly using aerial and ground surveys. Instrumental leak surveys will also be performed. All valves and valve actuators will be routinely operated, inspected, and lubricated. Periodic surveys of the cathodic protection system will also be conducted. All pipeline facilities will be marked and identified in accordance with applicable regulations."

D. Environmental and Safety Controls

A number of environmental and safety controls will be implemented by Transwestern. Activities associated with the project will be conducted in a manner that will avoid or minimize degradation of air, land, and water quality. "During construction, operation, maintenance, and termination of the project, Transwestern will perform activities in accordance with applicable air and water quality standards and related plans for implementation, including but not limited to standards adopted pursuant to the Clean Air Act as amended (42 USC 7401, et seq.), Clean Water Act, and the Federal Water Pollution Control Act as amended (33 USC 1251, et seq.)."

"Regulatory agency approved herbicides will be used within the fenced area at compressor and meter stations to prevent weed fires, and around safety signs and valve locations within the ROW to maintain visibility."

"Where the ROW includes public lands on which cadastral survey monuments and survey markers are located, Transwestern will avoid disturbance or removal of such monuments or markers." Markers or monuments removed during construction activities it will be moved "in accordance with detailed instructions established by the appropriate agency."

"Safety concerns during the construction phase of the pipeline will focus on welding inspection. Nondestructive and destructive testing methods are available to welding inspectors for determining the quality of welds. Visual inspection of welds and observation of welding operations by qualified welding inspectors will minimize weld defects and indicate when further examination of certain welds is advisable. Transwestern will conduct 100% testing of all welds."

"A number of safety design factors have been built into the pipeline engineering. For example, the pipe is buried deep enough so that normal plowing for cultivation will not affect it. Heavy wall pipe or casing is used for road and railroad crossings, and corrosion is prevented by cathodic protection systems. The proposed pipeline will conform to the minimum pipeline safety standards set by the U.S. Department of Transportation, which specify minimum pipe wall thickness, strength, and depth of burial for different population densities along the route. Thicker walled pipe (0.5 inch) will be used at road, major creek, and river crossings. The depth of the buried line will be 30 to 36 inches in normal soil and 18 to 24 inches in consolidated rock. If a rupture were to occur in the pipe, it will be noticed immediately by the operating crews at the compressor station since pipeline pressure will be monitored continuously. If a rupture occurred, the operator on duty will notify the proper personnel and they will be dispatched to carry out necessary emergency procedures."

5. OVERVIEW OF THE PROJECT OPTION AND POTENTIAL IMPACTS

A. Project Characteristics

The Project Option incorporates the same facilities, construction procedures and operations/maintenance procedures as are described for the Proposed Project (see Section 5), except for the following:

- approximately 1,500 feet of pipe will be placed on an existing pipeline bridge located a short distance downstream from the proposed boring site.
- the pipeline route will follow the approved ROW of the Mojave Transfer Pipeline for the full length of the project, rather than traversing new ROW west across the river and south under Interstate 40 to the connection with the proposed Meter Station (see Exhibit B).
- the Project Option will not require additional disturbances at the directional-drilling set-up and pipe pull-through locations, the minor access road required for the drilling set-up, or the clean-up and regrading after drilling is completed.

B. Present Environment - Project Option

The local vicinity of the project option is similar to that of the proposed and is shown in Exhibit B. The areas of environmental concern are also similar to those of the proposed project.

Land use, biological resources and cultural resources have been identified as resource areas where potential for significant impacts is greater than for the other resource areas addressed in this study. This determination is based upon a review of the findings in the FEIS/EIR previously referenced. The entire alignment of the project option will be located within the approved Mojave ROW; the assumption has therefore been made for the option that all impacts and mitigations associated with the Mojave Pipeline will also apply to the Transwestern Pipeline for this alignment. For a description of the three resource areas, refer to Section 6.

C. Environmental Impacts of the Project Option

The environmental impacts associated with the project option are very similar to those noted for the Proposed Project (see to Section 7 for a comparison of impacts). Based on the differences in project characteristics discussed in Section 5(A) above, the following impact differences exist for the Project Option:

- the placement of the pipeline on the bridge will preclude any of the impacts associated with the directional-drilling ground disturbances, access requirements or clean-up procedures.
- the bridge routing will impact remaining bridge capacity by requiring a portion of its designated use potential.
- The Project Option will not require new ROW beyond the project corridor previously studies and approved for the Mojave Pipeline, thereby reducing the potential for impacting unidentified cultural resources.

Based on the net change in impact potential (and the implementation of the mitigation measures found in Section 9), no significant adverse impacts will result from replacing the Proposed Project with the Project Option.

6. PRESENT ENVIRONMENT

A. General Environment

The local vicinity of the project work is shown in Exhibit B. The proposed project is located in the Mojave desert, in Mohave County, Arizona and San Bernardino County, California, on approximately eight acres of land. This area is within the Mohave Valley, a low desert valley filled with loose alluvium, at an elevation of approximately 400 to 600 feet. The ROW traverses within approximately 250 feet of Topock Bay and 100 feet of the AT&SF before it crosses Interstate Highway 40, State Highway 95, and the Colorado River. On the west side of the Colorado River, the elevation increases steeply to approximately 600 feet.

The area is sparsely populated: the nearest towns are Needles, California, approximately 19 miles to the east, and Topock, California, approximately 0.5 miles to the north. The Fort Mojave Indian Reservation lies approximately 2 miles to the north. Several segments of the ROW pass through the Havasu National Wildlife Refuge, and much of the land to the south of the ROW is part of this refuge. The entire area lies within a BLM designated utility corridor.

After reviewing the Final EIR/EIS information pertaining to the project corridor, all but three environmental resource areas have been determined to be adequately addressed in the Final EIR/EIS. The resource areas requiring further study include land use, biological resources (plant and animal life), and cultural resources.

Potential land use impacts will not result from the newly obtained ROW required for the boring alignment outside of the Mojave Line ROW, and line placement in boring locations. Potential impacts to biological resources include potential effects on

sensitive species and habitats, including potential impacts on wetlands. Potential cultural resource impacts include effects on historic structures and artifacts.

B. Land Use Environment

The discussion of land use along and in the vicinity of the proposed Transwestern pipeline route is based on existing literature sources, primarily the Final EIR/EIS, the Final EIR Amendment, and the Yuma Resource Management Plan.

Existing Land Uses

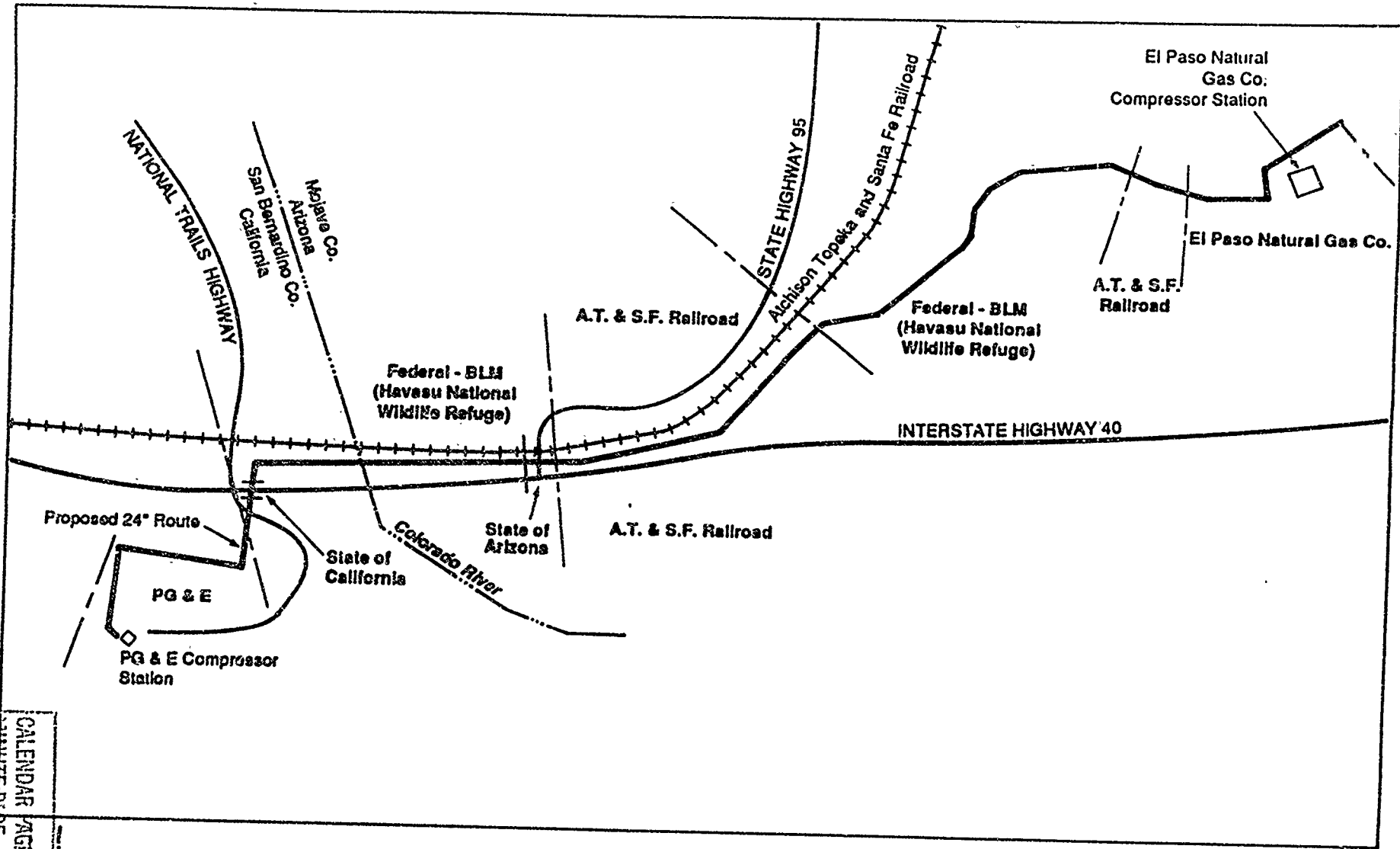
The proposed pipeline is located in an existing utility planning corridor that varies in width from two to five miles along Interstate Highway 40. Undeveloped open desert is the predominant land use (approximately 90% of the area) along the 12,500-foot proposed pipeline, 10,000 feet of 24" pipeline, and 2,500 feet of 20" pipeline. Other existing land uses include the El Paso Natural Gas Co. Compressor Station, the AT&SF line, Interstate Highway 40, State Highway 95, and the PG&E Compressor Station.

Planned and Future Land Uses

The 12,500-foot pipeline segment is within the boundaries of San Bernardino County in California and Mohave County in Arizona. The County plans and ordinances are applicable to unincorporated private lands along the pipeline route. The land use category used in the proposed pipeline area is commercial/industrial, however, the proposed pipeline itself will pass through the BLM utility corridor (Corridor G). In the future, other pipelines can also be added to this corridor.

Land Ownership

A map of the landowners along the length of the proposed pipeline route is presented in Exhibit E. The majority of the route is privately owned by the following three companies: AT&SF, PG&E, and El Paso. PG&E is the only private land owner in the California portion of the proposed route. The Federal lands that will be crossed by the proposed pipeline are either public lands administered by the U.S. Bureau of Land Management or are part of the Havasu National Wildlife Refuge, which is under the jurisdiction of the U.S. Fish and Wildlife Service. The California SLC, under the authority of the U.S. Submerged Lands Act of 1954, has jurisdiction for activities under the Colorado River (which includes part of the directional boring component of the project). In addition to the lands mentioned above, the route will also cross Interstate Highway 40 and State Highway 95.



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LAND OWNERSHIP MAP
 Proposed Transwestern to Topock
 Interconnect Pipeline Project
 Transwestern Pipeline Co.
 OCTOBER 1991
 EXHIBIT E

Transportation

The principal transportation routes serving the area are Interstate Highway 40, State Highway 95, National Trails Highway (Old Highway 66), and the Atchison Topeka and Santa Fe Railroad Line. The proposed pipeline and alternatives will cross Interstate Highway 40, State Highway 95, the railroad, and two Interstate Highway 40 access roads. A number of unpaved roads that serve for utility maintenance and Colorado River access will also be crossed by the pipeline. A pipeline suspension bridge crossing the Colorado River is currently traversed by a PG&E pipeline and will be crossed by the Mojave pipeline. The utility corridor along this route is approaching maximum routing capacity; only two more pipelines can be added to this bridge before the construction of new supports requiring disturbance to the Colorado River bottom will be necessary.

C. Biological Environment

The discussion of biological resources along and in the vicinity of the proposed pipeline route is based on (1) existing literature sources, and (2) a survey of the route conducted on 24 July 1991.

Vegetation Types and Wildlife Habitat

The proposed pipeline route is approximately 12,500 feet long and includes an access road of approximately 700 feet. It will traverse approximately 11,700 feet of upland habitat. The proposed route will cross under approximately 1,500 feet of riparian/wetland habitat associated with the Colorado River.

Upland Vegetation Types/Wildlife Habitats

Upland vegetation types along the proposed route include Mojavean creosote bush scrub and disturbed/ruderal habitat. The approximate distances of these vegetation types traversed by the proposed route are 8,200 feet of Mojavean creosote bush scrub and 3,500 feet of disturbed/ruderal. Mojavean creosote bush scrub vegetation along the proposed route is dominated by creosote bush (Larrea tridentata) and white bursage (Ambrosia dumosa). Other common plant species observed during the 24 July 1991 field survey included Arabian grass (Schismus arabicus), desert trumpet (Eriogonum inflatum), spiny herb (Chorizanthe sp.), and cholla cactus (Opuntia spp.).

This vegetation type along the proposed route is characterized by various levels of human-caused disturbance. Most of the route is within or adjacent to existing facilities (El Paso Compressor Station, roads and Interstate Highway 40, railroad

tracks) or adjacent to facilities under construction (the Mojave pipeline, Mojave Compressor Station). The proposed route traverses approximately 3,000 feet of lightly to moderately and 5,200 feet of heavily disturbed Mojavean creosote bush scrub. Other types of disturbance include vegetation clearing, trash dumping, and noise generated by vehicles, trains, and boats.

Undisturbed and lightly disturbed Mojavean creosote bush scrub in the region provides habitat for a variety of wildlife species adapted to arid conditions, such as desert tortoise (Gopherus [=Xerobates] agassizii), desert iguana (Dipsosaurus dorsalis), zebra-tailed lizard (Callisaurus draconoides), coachwhip (Masticophis flagellum), ground snake (Sonora semiannulata), several species of rattlesnakes (Crotalus spp.), horned lark (Eremophila alpestris), black-throated sparrow (Amphispiza bilineata), white-tailed antelope squirrel (Ammospermophilus leucurus), Merriam's kangaroo rat (Dipodomys merriami), and desert kit fox (Vulpes macrotis arsipus). Due to the level of existing human-caused disturbance and the degree of isolation caused by the railroad and Interstate Highway 40, wildlife species diversity is relatively low. Individuals and sign of only a few species were observed during the 24 July 1991 survey, including turkey vulture (Cathartes aura), rock dove (Columba livia), black-throated sparrow, and house finch (Carpodacus mexicanus), as well as kangaroo rat (Dipodomys sp.) burrows. No individuals or sign of desert tortoise were observed.

Disturbed/ruderal habitat occurs along approximately 3,000 feet of the proposed route. This habitat type occurs in areas that have been cleared for many years (such as within and adjacent to roads and the railroad ROW), as well as areas that have been cleared and graded recently during construction of the Mojave pipeline system.

Vegetation is sparse in the disturbed/ruderal habitat type. Bare ground usually exceeds 90 percent. Plant species in this vegetation type include a high proportion of introduced species, such as Arabian grass. Based on observations made during the site reconnaissance survey, the disturbed/ruderal areas along the pipeline route appear to represent low quality wildlife habitat, and few species utilize these areas. During the 24 July 1991 survey, house finches and a common raven (Corvus corax) were observed flying over disturbed/ruderal habitat. In addition, Botta's pocket gopher (Thomomys bottae) burrows were found to occur at margins between disturbed/ruderal and Mojavean creosote bush scrub habitats. Other species that potentially occurring in this habitat along the proposed pipeline are those adapted to high levels of disturbance, such as European starling (Sturnus vulgaris) and house sparrow (Passer domesticus).

Upland vegetation types along the proposed project include lightly to moderately disturbed Mojavean creosote bush scrub, and disturbed/ruderal habitats. This alternative traverses approximately 8,000 feet of Mojavean creosote bush scrub,

including 3,000 feet that contains low to moderate levels of existing human-caused disturbance, and 3,500 feet of disturbed/ruderal habitat.

Riparian/Aquatic Habitats

The proposed route crosses under approximately 1,500 feet of riparian and aquatic habitats. Since the pipeline will be placed under the habitat in a bore directionally drilled from an area beyond the habitats and no in-water construction is anticipated, these habitats will not be directly impacted by pipeline construction and maintenance.

The riparian habitat at the proposed crossing is limited to narrow bands (less than 30 feet) of tamarisk scrub, characterized by tamarisk (*Tamarix* sp.) and mesquite (*Prosopis glandulosa*). The former is an introduced phreatophytic plant that has become established along the Colorado River. In the vicinity of the proposed pipeline route, tamarisk is the dominant plant in the riparian zone and appears to be displacing some native riparian species, such as mesquite.

Riparian zones in the region generally support a relatively diverse fauna. A variety of bird species are associated with the Colorado River, including gulls, terns, shorebirds, and waterfowl. However, many of these species are associated with marsh and native riparian habitats. Tamarisk-dominated riparian zones appear to comprise lower quality habitat for wildlife in general, and specifically for birds. The avifauna at the proposed river crossing is quite low in diversity, as well as in densities for individual species.

Aquatic habitat at the proposed crossings is limited primarily to open water. Small areas of freshwater marsh, characterized by cattails (*Typha* sp.) and bulrushes (*Scirpus* spp.) occur nearby, but not within the proposed construction zone. Most birds that utilize the Colorado River are associated with marsh areas, rather than open water. Moreover, areas of open water at the proposed crossings of the river are subject to a high level of disturbance caused by boat traffic. As such, the avifauna at these crossings is quite low in density and diversity.

Between Davis Dam and Lake Havasu, 24 species of fish have been reported in the Colorado River (Final EIR/EIS, 1987). Many of the species are non-native, such as brown trout (*Oncorhynchus trutta*), carp (*Cyprinus carpio*), redear sunfish (*Lepomis microlophus*), and black crappie (*Pomoxis nigromaculatus*). Sensitive fish species potentially occurring in this portion of the Colorado River include the bonytail chub (*Gila elegans*) and the razorback sucker (*Xyrauchen texanus*).

Sensitive Plants

Based on information developed for the Mojave pipeline project (Final EIR/EIS, 1987), potential occurrence of sensitive plant species along the proposed pipeline segment is limited to barrel cactus (Ferocactus acanthodes var. acanthodes). This is a Category 3c (more common than previously believed) federal candidate for listing as threatened or endangered, as well as a California Native Plant Society (CNPS) List 3 species (a list containing plants about which little information is known). No plants of this species were observed during the reconnaissance survey of 24 July 1991.

Sensitive Wildlife

Based on information from the Final Mojave EIR/EIS and other sources, sensitive wildlife species known or with potential to occur in the vicinity of the proposed pipeline segment include the following:

- Bonytail chub- federal-, California-, and Arizona-listed endangered
- Razorback sucker- Category 1 federal candidate for listing as threatened or endangered, California- and Arizona-listed endangered
- Desert tortoise- federal-listed threatened in California, California-listed threatened, candidate for state listing in Arizona
- Yuma clapper rail- (Rallus longirostris yumanensis)- federal-listed endangered and California-listed threatened
- California black rail- (Laterallus jamaicensis coturniculus)- California-listed threatened and Category 1 federal candidate.
- Other federal-listed endangered bird species, including bald eagle (Haliaeetus leucocephalus) and peregrine falcon (Falco peregrinus)
- Other bird species with lesser classification of sensitivity, such as California yellow-billed cuckoo (Coccyzus americanus occidentalis), Arizona Bell's vireo (Vireo bellii arizonae), elf owl (Micrathene whitneyi), Gila woodpecker (Melanerpes uropygialis), and bank swallow (Riparia riparia).

Based on the location of the proposed route, types of wildlife habitats present, and method of construction, few of the above species occur along the proposed Transwestern pipeline route. The bonytail chub and razorback sucker occur in the lower Colorado River only in a few remnant populations. The former species has been stocked in Lake Mojave, approximately 35 miles upstream of the proposed crossing. Razorback suckers were collected from the Colorado River near Topock in the 1970s. As such, there is a slight possibility that individuals of one or both of these species occur in the vicinity of the proposed pipeline route. However, suitable habitat for these species is not expected to be disturbed due to construction or maintenance of the proposed pipeline.

The desert tortoise occurs in desert habitats such as Mojavean creosote bush scrub in portions of Arizona, California, Nevada, and Utah. The proposed pipeline route is within an area with various tortoise habitat classifications, including:

- Bureau of Land Management (BLM) habitat categories--uncategorized (BLM 1988 habitat category maps)
- United States Fish and Wildlife Service (USFWS) Class 2 habitat (USFWS 1989 habitat class maps; California only)
- California Department of Fish and Game (CDFG) crucial habitat areas--uncategorized (CDFG crucial habitat maps, undated)
- Low density (Berry and Nicholson, 1984).

During the 24 July 1991 survey, the route was reviewed by vehicle and on foot to note the type and condition of the habitat, as well as to search for individuals and sign of desert tortoise. As noted earlier, the upland habitat consists of disturbed/ruderal and Mojavean creosote bush scrub, with levels of human-caused disturbance ranging from low to very high. Most of the proposed route is isolated by Interstate Highway 40, the railroad tracks and the Colorado River. No tortoises or sign of tortoises were observed. Based on the lack of sign, the degree of isolation, and the existing amount of human-caused disturbance, it appears that the proposed pipeline route does not traverse suitable desert tortoise habitat.

Additional information supports the classification of habitat traversed by the pipeline route as unlikely to contain desert tortoises. Upon review of existing data, habitat classification, and 1991 photographs, agency biologists stated that the vicinity of the pipeline route did not appear to represent suitable tortoise habitat and that pipeline construction was not likely to result in adverse impacts to this species (R. Bransfield, U.S. Fish and Wildlife Service, personal communication, 1991; F. Hoover, California Department of Fish and Game, personal communication, 1991). Moreover, a review of data collected along the adjacent Mojave Pipeline route in this area during preconstruction surveys by BioSystems Analysis, Inc., indicated that no tortoises or sign of tortoises were observed. This portion of the Mojave Pipeline route in California was classified as non-habitat for desert tortoise (BioSystems Analysis, Inc. data files; J. Ellison, Fluor-Daniel project manager, for Mojave Pipeline, personal communication, 1991).

The Yuma clapper rail has been reported from Topock Marsh south (Final EIR/EIS). As such, the Colorado River crossings along the proposed pipeline route is within the current range of this species. However, marsh habitat utilized by the Yuma clapper rail does not occur at the pipeline crossings. This species does not occur at the proposed crossing. Moreover, riparian/wetland habitats will not be disturbed by the proposed pipeline.

The California black rail is known to inhabit bulrush (*Scirpus* spp.) dominated freshwater marsh habitat along the Colorado River near Imperial Dam in Imperial County. It has also been reported from the Bill Williams River Delta south of the project site. Based on this information, as well as the fact that freshwater marsh habitat will be avoided, the species is unlikely to be affected by pipeline construction and operation activities.

Due to a lack of nesting and winter roost sites, bald eagles and peregrine falcons will not be seen on more than a rare fly-over basis during migration. Similarly, suitable habitat apparently does not occur at the proposed crossing of the river for other sensitive species of birds, such as California yellow-billed cuckoo, Arizona Bell's vireo, elf owl, Gila woodpecker, and bank swallow. The latter species requires steep, eroding banks in which to nest. The remaining species are associated primarily with well-developed large cactus or well-developed riparian habitat characterized by native plant species. Because those habitat types do not occur along the proposed route, the above sensitive species of birds will not occur.

In summary, the occurrence of sensitive, threatened, or endangered wildlife species along the proposed route is unlikely.

Sensitive Habitats

Sensitive habitats that occur in the region of the proposed pipeline route include riparian habitats, wetlands, and desert tortoise habitat. Riparian habitat occurring at the proposed crossing of the Colorado River is dominated by introduced, invasive tamarisk, with scattered clumps of native mesquite and arrowweed. As such, it is low-quality riparian habitat. Although sensitive wetlands, such as freshwater marsh, occur in the vicinity of the proposed pipeline route, none was observed at the proposed crossing.

As noted earlier, due primarily to various levels of human-caused disturbance, as well as a high degree of isolation caused by existing facilities, Interstate Highway 40, the railroad tracks, and the Colorado River, the proposed route does not appear to traverse suitable desert tortoise habitat. During the 24 July 1991 survey, no individuals or sign of this species were observed.

D. Cultural Environment

Prehistoric Overview

Most of the archaeological investigations in the region have been in conjunction with various development projects, including the Mojave Pipeline project (McGuire 1990). Other survey work has been conducted by Fryman (1976) and Leonard (1978). In

the late 1980s (Peyton 1987) ground drawings were documented to the north and west of the proposed project.

Several regional overviews pertaining to the southern portion of the Mojave Desert have been presented in BLM documents (King and Casebier 1981; Warren et al. 1980; Warren et al. 1981). Warren (1984) has also addressed a regional chronology for the area. A brief summary of the prehistoric cultural chronology of the region is presented as background. Additional information is available in the sources referenced above.

Although some researchers have reported evidence of human activity in the Mojave Desert predating 12,000 Before Present (B.P.), such claims are not widely accepted. More substantial evidence has been found related to the period known as the Lake Mojave (Warren 1984) or San Dieguito (Rogers 1958). This generalized hunting culture, commonly dated to 12,000-7,000 B.P. (Warren and Crabtree 1986), is marked by a number of distinct tool types. These include large leaf-shaped knives or bifaces, several types of scrapers, and leaf-shaped, long-stemmed and short wide-stemmed points.

Pinto points are markers for the next identifiable cultural period. Although there is some controversy over the exact chronological placement, a number of sites dating between 7,000 and 4,000 B.P. have been assigned to the Pinto period. Warren (1984) suggests that the Pinto complex evolved from the hunting complexes of the earlier period and that it represents a small population dependent on hunting and gathering.

Crabtree (1981) describes the Amargosa period (ca. 3,500-1,000 B.P.) inventory as characterized by a number of stylistic and adaptational shifts. This is a time of increased population and the broadening of economic activities. This period corresponds closely to the Price Butte, Nelson, and El Dorado phases of Willow Beach (Schroeder 1961, cited in Warren et al. 1981), Bettinger and Taylor's (1974) Newberry period, and Warren's (1984) Gypsum and Saratoga Springs periods. The tool assemblage contains medium to large stemmed and notched points. Manos and millstones are common, the mortar and pestle are introduced, and shell beads from California are present (Warren and Crabtree 1986).

In the latter part of the Amargosa period the southern desert area appears to be influenced by activities on the lower Colorado River. The cultural sequence on the lower Colorado River is relatively unknown prior to about 1,200 B.P., with only the excavations at Willow Beach having produced information before 2,000 B.P. This Hakataya (or Patayan) influence in the southern region is associated with the Buff Ware pottery and Cottonwood and Desert Side-notched projectile points.

The Late Prehistoric period (1,000 B.P. - historic) appears to have seen a continuation of trends begun in earlier periods. There was a widespread adoption

of a number of variations of the Cottonwood Triangular and Desert Side-notched points. According to Crabtree (1981), there was a decrease in the importance of hunting and an increased emphasis on a relatively narrow list of plants, such as mesquite and agave.

Ethnohistoric Overview

The project area is within the home territory of the Mojave, although the Chemehuevi and the Halchidoma probably had interests in the region. Previously cited BLM regional overviews include information about the ethnography of the southern Mojave Desert. Additional ethnographic information on the region is presented in the environmental documentation for the Mead-Phoenix 500-kV Transmission Line project (U.S. Department of Energy 1983) and the Devers-Palo Verde High Voltage Transmission Line (Bean and Vane 1978). Only a brief summary is provided here.

The area occupied by the Mojave encompassed lands on both sides of the lower Colorado River from just south of Davis Dam to Topock. They traveled beyond this core area, however, and their knowledge and use of trails throughout the Mojave Desert and western Arizona was extensive. Although primarily river agriculturalists, the Mojave supplemented their diet with a variety of wild plants, game, and fish. The mesquite bean was of particular importance, with some groves harvested on a regular basis. Family groups functioned as the primary subsistence unit for farming, as well as hunting and gathering. Agricultural lands appear to have been owned by extended families, as indicated by boundary disagreements.

Available information indicates that the Mojave lived in small rancherias scattered throughout the floodplains of the Colorado River. They built a number of types of structures, the most substantial being a semi-subterranean winter house. Open-sided ramadas provided shade and protection from the summer sun.

Historic Overview

The history of the project area has been shaped by transportation routes through the region. First came the trails and roads along the river, and later the railroad. The river also served as a transportation corridor for steamboats carrying goods and passengers. Into the early part of this century the steamers hauled ore and heavy machinery for the mines in the region (Gudde 1975). Many of these vessels docked at Needles several miles north of the project.

The small community of Topock was previously known as Red Rock or Mellen. The latter appellation was taken from Jack Mellen, a nineteenth century Colorado River

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steamboat captain (Coolidge 1963). According to some sources the name came from the Mojave Indian ahatopok, which means 'bridge', and was thought to refer to the railroad bridge at Topock (Gudde 1962).

Topock has been described as being located in a maze of transportation routes. Over the past 100 years it has served as a boat landing, a railroad station stop, and a transcontinental automobile route. It was an important service center until about World War II (Norris 1980). The removal of the railroad maintenance facilities and the construction of Interstate 40 heralded a decline in activity, and the town is now a small residential cluster. The area has experienced some renewed use as a transportation corridor, this time for natural gas.

Archaeological Inventory Results

Cultural resource investigations conducted for this project included a records search at the regional office of the California Archaeological Inventory and the files of the Arizona State Museum, Arizona State University, Museum of Northern Arizona, and the Arizona State Historic Preservation Office (SHPO). The project and a half mile wide area around it were included in the records search. Results from the survey for the Mojave Pipeline are included in this inventory. In all, 22 previously recorded archaeological resources were identified within this area (Table 6-1). These prehistoric resources range from isolated debris such as a single flake to complex rock alignments, one of which is on the National Register. The field visit confirmed that the alignment avoids the National Register site.

Ethnographical Inventory Results

The ethnographic data collection also involved archival research. Major sources reviewed for ethnographic and Native American concerns include Bean and Vane (1978; 1982), U.S. Department of Energy (1983), U.S. Department of Interior (1980), and Woods (1983).

Some of this information collected concerning ethnographical resources is considered confidential. A summary of this results, without detailed location information, is presented in Table 6-1.

Historical Inventory Results

The primary goal of the historical inventory was to identify historical sites that are (1) listed on official federal, state, and local registers (U.S. Department of Interior

1976; California Department of Parks and Recreation 1976; 1982; Quinn 1980), or (2) are of local importance. The major literature that was reviewed includes:

- The National Register of Historic Places (NRHP)
- California Historical Landmarks
- California Inventory of Historical Resources

Other published sources researched for historical sites include Hoover and others (1966), Gudde (1962; 1975), Norris and Carrico (1978), Warren and Roske (1981), Historical and Architectural Resources within the Lower Colorado River System (WESTEC 1980), and the Arizona Engineering Site Inventory (Texas Tech University 1981). Map data included U.S. General Land Office plats and Perris Miner's Map. (Rand McNally 1896).

The results of the inventory are presented in Table 6-1. In all 14 historical resources were identified. These vary, with the community of Topock listed along with a bridge, which is on the National Register.

A field visit was made to the project area on July 24, 1991. In addition to the previously recorded sites noted above, two other potential resources were observed. In Arizona a water tank (metal with a wooden roof) was identified adjacent to the proposed project area. It is near the tracks and was likely associated with the development of the railroad. In California a wooden pole utility line with glass insulators was noted paralleling the west bank of the river. The alignment crosses under this feature. The age and any associations have yet to be determined for these structures.

TABLE 6-1
 TRANSWESTERN PIPELINE PROJECT
 CULTURAL RESOURCES ARCHIVAL INVENTORY RESULTS

<u>Site Number</u>	<u>Class</u>	<u>Description</u>	<u>Comments</u>
CA-SBr-219/H	A/H	Topock Maze	NRHP
CA-SBr-954	A	Petroglyphs	
CA-SBr-5523	A	Quarry	
P1462-2	A	Lithic scatter	
P1462-3	A	Lithic scatter	
P1462-4	A	Stone alignment	
P1471-2	A	Flake	
P1471-3	A	Lithic scatter	
P1471-4	A	Lithic scatter	
P1471-5	A	Lithic scatter	
P1471-6	A	Lithic scatter	
P1471-7	A	Lithic Scatter	
P1471-8	A	Lithic scatter	
P1471-9	A	Lithic scatter	
P1471-11	A	Stone alignments, lithic scatter	
P1471-14	A	Stone alignments	

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TABLE 6-1 (Continued)
 TRANSWESTERN PIPELINE PROJECT
 CULTURAL RESOURCES ARCHIVAL INVENTORY RESULTS

<u>Site Number</u>	<u>Class</u>	<u>Description</u>	<u>Comments</u>
A1462-1	A	Core	
A1462-2	A	Core	
A1462-3	A	Core	
MP-B3	A	Chipping station	
AZ L:7:12	A	Quarry	
AZ L:7:13	A	Rock ring	
	E	Mojave Desert	Habitation, resource exploitation
	E	Colorado River	Resource exploitation
CHL 985	H	Desert Training Center, California-Arizona Maneuver Area	
CA-SBr-2910H	H	National Old Trails Road and Monument	NRHP-E-OPH-3926
CA-SBr-5524H	H	Road	
P1462-1H	H	Foundation	
	H	Utility line	Status unknown
Site of Topock	H/A	Townsite	Condition and status unknown

TABLE 6-1 (Continued)
 TRANSWESTERN PIPELINE PROJECT
 CULTURAL RESOURCES ARCHIVAL INVENTORY RESULTS

<u>Site Number</u>	<u>Class</u>	<u>Description</u>	<u>Comments</u>
SHPO 42	H	Topock Bridge Red Rock Bridge	Demolished 1976
SHPO 60	H	Route 66	
SHPO 71	H	Old Trails Bridge/Needles Highway Bridge	NRHP 9-30-88
SHPO 104	H	Atlantic & Pacific Railroad, later AT&SF	Portion abandoned
SHPO 105	H	Topock (Mellen)	
	H	Water tank	Status unknown

A = Archaeological
 E = Ethnographical
 H = Historical

NRHP = Listed on the National Register of Historic Places

Inventory Summary

Based on the results of the records search and field visit at least two apparently unrecorded and unevaluated potential resources occur near the project area. In addition to these resources, seven previously recorded sites and a townsite locale also occur within the project limits. The Mojave Pipeline survey identified three prehistoric resources: a quarry (AZ L:7:12), a rock ring (AZ L:7:13), and a chipping station (MP-B3). The proposed ROW will make use of the Needles Highway Bridge (SHPO 71). The alignment also passes through the community of Topock, site SHPO 105. The westernmost alternative crosses the location of SHPO 42, however this resource has been previously demolished. This alignment also crosses the previous site of the town of Topock on the west side of the river. The Desert Training Center Maneuver Area is crossed by the ROW and both alternatives.

Cultural Resources Sensitivity

The sensitivity assessment for archaeological resources takes two major factors into account. (1) known and predicted archaeological site density/significance; and (2) generalized level of previous impacts. Major types of previous impacts include adjacent pipeline construction.

Sensitivity rankings for archaeological resources are defined as follows:

- High - Areas of known high resource density/significance. This includes areas which, although not surveyed, are comparable to areas of high known sensitivity. Avoidance of impacts will be difficult, but possible. Mitigation will reduce impacts to an acceptable level.
- Moderate - Archaeological resources will be scattered along the ROW. Avoidance of impacts will be possible though careful siting. Mitigation costs will be lower than in high sensitivity areas.
- Low - Few sites are recorded or predicted in project vicinity. Archaeological resources will be a minor constraint.

The portion of the project in California, west of the Colorado River, is an area of generally high sensitivity for archaeological resources. This is based largely on the presence of a number of rock alignments in the vicinity. The proposed pipeline alignment and alternative west of the river pass through mostly disturbed areas, with little opportunity for intact sites. The results of the Mojave Pipeline survey demonstrate an absence of archaeological resources along their corridor in this area. Small relatively undisturbed areas, such as the boring staging area, do exist along the Transwestern project in California. Although the

overall sensitivity for the proposed route is low, such areas potentially contain undocumented resources.

In Arizona, east of the river, there are fewer documented archaeological resources, but the area is generally less disturbed. The survey for the Mojave Pipeline has recently identified previously undocumented cultural resources along the ROW. Although there are archaeological resources located along the proposed alignment, based on the recommendations for the Mojave Pipeline, they are not eligible for the National Register. When these factors are combined, the overall archaeological sensitivity for the Arizona segment of the project is low.

Ethnological Sensitivity

Sensitivity levels were assigned based primarily on heritage and scientific significance. Although final sensitivity levels were assigned on a case by case basis, the following guidelines were used.

- High - Presence of high sensitivity settlements/use areas and/or the ethnographic components which comprise them constituting significant constraints to project siting. Examples of these resources might be large villages or sacred sites.
- Moderate - Moderate sensitivity settlement/use areas and/or ethnographic components which comprise them constitute some constraint to the project.
- Low - The incidence of low sensitivity use areas and/or ethnographic components which comprise them constitute negligible constraints to the project. Procedures such as avoidance or data recovery will not be required.

Based on the rather general concerns identified the ethnographical sensitivity has been ranked as moderate.

Historical Resources Sensitivity

In assessing the sensitivity of historical resources the following factors were taken into account:

- Official Status - Sites listed on the National Register and state historical landmarks are accorded the highest sensitivity rating.

- Site Type - Different types of historical sites are prone to different impacts from construction projects. For example, an historic marker in the vicinity of a pipeline might not be very sensitive with respect to the effects of the project. Alternatively, a structure slated to be moved from its original setting will be much more affected by the project.
- Previous Impacts - The generalized level of previous impacts can affect sensitivity.

Only one of the five known historical resources within the project corridor has been evaluated and determined eligible for the National Register. The Needles Highway Bridge was nominated to the Register in 1988. However, its current use as a support structure for a pipeline alters its otherwise high sensitivity rating to a low. Since the Topock Bridge has been previously demolished it is also rated low for sensitivity to the project. Unless the project requires the removal of structures associated with the remaining three sites their overall sensitivity rating is also assessed as low.

7. ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT AND PROJECT OPTION

This section addresses the anticipated environmental impacts associated with the Transwestern Pipeline Project. Unless otherwise noted in the specific resource section, the impact descriptions listed below apply to the proposed project and the project option.

A. Earth

The proposed project and project option will involve no changes to the area other than the introduction of temporary construction equipment and the two acre metering station. Consequently, there will be no changes in existing topography, to unique geological features, and no displacements or disruptions of the soil. Faulting or seismic activity is unlikely in this area. The only potential environmental impact to earth resources is the possibility of wind erosion of soils. This potential impact will be rendered nonsignificant in the proposed project by the incorporation of appropriate mitigation measures (see Section 9).

B. Air

Long-term impacts on air quality were determined to be nonsignificant for the Mojave Pipeline. Emissions caused by the proposed project and project option will not result in significant long-term impacts to air quality. Construction impacts on air quality will be rendered nonsignificant in the proposed project by the incorporation of appropriate mitigation measures (see Section 9).

C. Water

No significant intensive surface runoff leading to an increase in sediment load and, nor decrease in water quality of the Colorado River is expected to result from the proposed project, nor are impacts caused by hydrostatic test water withdrawal and discharge. Groundwater contamination or adverse impacts on springs are also not likely. All of these potential impacts will not be issues of concern in the proposed project and will be rendered nonsignificant in the proposed project by the incorporation of appropriate mitigation measures (see Section 9).

D. Plant and Animal Life

Construction Impacts-Proposed Project

Construction of the proposed pipeline segment will result in temporary, but long-term disturbance to a 25-foot-wide zone of habitat not previously disturbed by pipeline construction. The remaining 50 feet of permanent ROW required for the proposed pipeline will contain habitat previously disturbed by construction of the Mojave pipeline. The portion of the route not utilizing the Mojave ROW will result in temporary, but long-term disturbance to a 25-foot-wide construction zone, and a permanent ROW width of 50 feet.

In addition to the pipeline construction, habitat disturbance will also occur along this alternate route due to: (1) construction of the proposed Transwestern/PG&E and SOCAL Meter Station adjacent to the PG&E Compressor Station (approximately 2 acres); (2) use of extra workspace (approximately 8.6 acres) for construction staging and pipe pull-through at the western end of the bore under the river; and (3) extra workspace (approximately 7 acres) for boring underneath Interstate Highway 40. The first will be permanent disturbance, while the latter two are considered to be temporary, but long-term.

Cumulative impacts will include those impacts associated with construction of both the proposed pipeline segment and Mojave pipeline.

The areas of habitats that will be disturbed by construction of the proposed pipeline segment are included in Table 7-1.

Impacts to vegetation types/wildlife habitats due to construction of the proposed pipeline segment will be relatively minor due to:

- Construction adjacent to the Mojave pipeline route. Fifty of the needed seventy-five feet of standard construction zone width will already be disturbed.

- Construction in areas of existing disturbance. Of the approximately 12,000 feet of pipeline route, only about 3,000 traverses Mojavean creosote bush scrub with low to moderate existing disturbance.
- Method of crossing the Colorado River. Aquatic and riparian habitats will be avoided by boring under the river.

Construction of the proposed route will result in disturbance to 13.62 acres of Mojavean creosote bush scrub including 10.3 acres with light to moderate levels of disturbance and 3.32 acres of high levels of disturbance (Table 7-1). This acreage includes 8.6 acres of extra workspace, pipe laydown and pull-through area associated with the boring operation. The high level disturbance areas include the railroad ROW and areas already disturbed by Mojave pipeline construction activities.

As described in Section 6, the Mojavean creosote bush scrub traversed by the proposed Transwestern pipeline route does not represent high-quality wildlife habitat due to several factors, including existing and ongoing (such as Interstate Highway 40 and the railroad) human-caused disturbance, as well as the fragmentation and isolation of this area. As such, construction-related disturbance to vegetation types/wildlife habitat along the proposed route will not be significant.

Because the Mojave Pipeline Project Final EIR/EIS addresses a 100-foot construction ROW, cumulative impacts due to pipeline construction (construction of the Mojave and proposed Transwestern pipelines) will be similar to those described for the Mojave pipeline. The total width of the construction ROW for both the proposed Transwestern and Mojave pipelines will be 100 feet. Cumulative impacts in the area due to construction of the proposed Transwestern pipeline route and the Mojave Pipeline will include 15.5 acres of lightly to moderately disturbed Mojavean creosote bush scrub, 10.22 acres of high disturbed Mojavean creosote bush scrub, and 36.0 acres of disturbed/ruderal habitat. Because both pipelines will follow the same route in this area, factors affecting wildlife habitat quality that are described above also apply to cumulative impact analysis. As such, cumulative impacts associated with construction of these pipelines will not be significant (refer to Table 7.2 for cumulative acreages).

General Wildlife Species

Potential impacts to wildlife species due to construction of the proposed pipeline will include direct loss of animals due to crushing by equipment; displacement of animals into adjacent areas; disturbance due to increases in dust, noise, human activity, and nighttime lighting; and loss of habitat and habitat features. Species most likely to be impacted will be those associated with Mojavean creosote bush scrub and disturbed/ruderal areas.

As described in Section 6, wildlife species common to Mojavean creosote bush scrub include desert iguana, zebra-tailed lizard, horned lark, white-tailed antelope squirrel and desert kit fox. Based on observation of the 24 July 1991 survey, the level of existing human-caused disturbance, and the degree of fragmentation and isolation due to Interstate Highway 40, the railroad, and the Colorado River, it appears that the desert tortoise is not utilizing areas traversed by the proposed pipeline route.

Overall, the habitats that will be disturbed by the proposed Transwestern pipeline route are not of high quality to wildlife species. As such, a relatively low number of individuals of general wildlife species will be lost or displaced by construction. These impacts will not be significant.

Impacts associated with both the proposed Transwestern and Mojave pipelines will comprise cumulative impacts. In this area, both traverse generally low-quality wildlife habitats. Thus, cumulative impacts to general wildlife species due to construction of these pipelines will not be significant.

Riparian/Aquatic Habitats

The proposed pipeline route crosses under approximately 1,500 feet of riparian and aquatic habitats (Table 7-1). Potential indirect impacts to aquatic and riparian habitats due to construction of the proposed project will include introductions of soil sediments, and vehicle fuels (accidental fuel spills), as well as increases in noise levels due to equipment. As described in Section 6, a variety of fish occupy this portion of the Colorado River. These species will not be significantly affected by soil sediments because potential amounts of either entering the river will be minute. Fuel spills into the river will alter water quality and might impact species of fish. However, safety controls have been developed to lessen the likelihood of a spill occurring (refer to Section 4 and Section 9). Increased noise levels will not affect wildlife species using these habitats because: (1) wildlife occur in tamarisk scrub in low densities; and (2) these habitats are already subject to high levels of noise due to Interstate Highway 40, the railroad, and boats on the river.

Sensitive Species

Sensitive species of plants and wildlife known from the vicinity of the proposed Transwestern pipeline route are described in Section 6. Generally, those include:

- Barrel cactus
- Sensitive fish species (bonytail chub, razorback sucker)
- Desert tortoise
- Yuma clapper rail
- Federal and California state-listed birds (bald eagle, peregrine falcon)

• Other sensitive bird species

Based on observations of the 24 July 1991 survey, barrel cactus along the pipeline route are absent or in low densities. None was observed. As such, impacts to this species due to construction of the proposed pipeline segment will not be significant.

The occurrence of the bonytail chub and/or razorback sucker in the vicinity of the pipeline route is possible, but very unlikely. Along the lower Colorado River, both species distributions have been reduced to a few remnant populations. Fish species in general might be impacted by introduction of soil sediments and vehicle fuels into the Colorado River. If soil sediments are introduced into the river, they will likely be in minute amounts. Fuel spills might impact fish species (including these two sensitive fish, if present), however the likelihood of a spill into the river is low. Safety controls and mitigation have been developed to reduce the likelihood of occurrence of these impacts (see Section 3). Overall, impacts to these two sensitive species due to construction of the proposed pipeline segment will not be significant.

As described in Section 6, desert tortoises do not appear to be using habitats traversed by the proposed pipeline segment. No individuals or sign were observed during the 24 July 1991 survey. Based on information developed by BioSystems Analysis, Inc., and on discussions with R. Branfield (USFWS), F. Hoover (CDFG), and J. Ellison (overall project manager for the Mojave Pipeline), the area traversed by the Enron pipeline route does not contain suitable tortoise habitat. The Mojavean creosote bush scrub occurring along the pipeline route contains various levels of human-caused disturbance and has been fragmented and isolated by existing facilities, roads (including Interstate Highway 40), the railroad, and the Colorado River. Construction of the proposed pipeline segment will not impact this species. Based on information submitted to them, R. Branfield, USFWS, and F. Hoover, CDFG, agree with this conclusion.

Because the proposed pipeline segment route does not traverse marsh habitat, the Yuma clapper rail is unlikely to occur along the pipeline route, except possibly while travelling to and from areas of suitable habitat. Marsh habitat downstream of the pipeline route will potentially be impacted by soil sediments and fuel spills. As described above, they will be introduced into the river in minute amounts. Safety controls and mitigations have been developed to lessen the likelihood of occurrence (see Sections 4 and 9). Nearby populations of this species are not likely to be affected by indirect impacts, such as increases in noise. Noise levels in the vicinity of the pipeline route are currently quite high due to Interstate Highway 40, the railroad, and boats on the river. Potential impacts to this species, which are unlikely, will not be significant.

Due to the lack of suitable habitat, other bird species with various levels of sensitive and protected status do not occur in the vicinity of the proposed pipeline route other

than on an infrequent basis during migration or other movements. As such, if impacts to these species occur, they will not be significant. These species include: bald eagle, peregrine falcon, California black rail, California yellow-billed cuckoo, Arizona Bell's vireo, elf owl, Gila woodpecker, and bank swallow.

Because the Mojave pipeline route is adjacent to the proposed Transwestern pipeline route, cumulative impacts to sensitive species will be similar to the impacts described above for construction of the proposed pipeline reroute.

Construction Impacts - Project Option

Construction impacts to plant and animal life resulting from the project option, i.e., crossing the Colorado River via the suspension bridge, will be similar to those resulting from the proposed project, except for the following:

Acres of disturbance to habitats resulting from construction of the project option will include 5.16 acres of Mojavean creosote bush scrub, including 3.46 acres that contain a relatively high level of existing human-caused disturbance. The remainder of disturbance (3.7) acres will occur in areas that are already highly disturbed and/or contain ruderal habitat. These include the railroad ROW and areas already disturbed by Mojave pipeline construction activities. See Table 7-1 for a summary of differences in acreage disturbed between the proposed project and the project option.

TABLE 7-1
 APPROXIMATE ACRES OF CONSTRUCTION DISTURBANCE,
 BY HABITAT, ALONG THE PROPOSED
 TRANSWESTERN PIPELINE ROUTE

Habitat Type	Length of Occurrence Along Pipeline Route (feet)	Disturbance Acreage Due to Construction	
		Transwestern Route	Mojave and Trans / Tern Routes
PROPOSED PROJECT			
Mojavean creosote bush scrub-low to moderate disturbance	3000	10.3 ^a	15.5 ^a
Mojavean creosote bush scrub-high disturbance	5200 ^b	3.32 ^b	10.22 ^b
Disturbed/ruderal	5000 ^c	10.0 ^d	36.0 ^c
Total	13,200	23.62	61.72
PROJECT OPTION			
Mojavean creosote bush scrub-low to moderate disturbance	3000	1.7	6.9
Mojavean creosote bush scrub-high disturbance	5000 ^d	3.46 ^d	11.16 ^d
Disturbed/ruderal	4500	3.7 ^e	28.9 ^a
Total	12,500	8.86	48.96

- ^a Includes 8.6 acres for a pull-through area associated with boring under the Colorado River.
- ^b Includes .86 acres for the 500 feet of 20-inch pipeline to the SOCAL meter station and .16 acres for the 700 feet of 10-foot access road.
- ^c Includes 1200 feet of route that parallel the Mojave pipeline, 2300 feet of new pipeline construction, and 1500 feet of extra workspace associated with boring under Interstate Highway 40.
- ^d Includes approximately 2 acres of disturbance due to construction of the proposed Transwestern meter station and 6 acres due to boring under the Interstate Highway 40.

- e Includes approximately 2 acres of disturbance due to construction of the proposed Transwestern meter station, 6 acres due to boring under Interstate Highway 40 and 2 acres due to construction of the Mojave Compressor Station.
- f Includes approximately .86 acres for the 500 feet of 20-inch pipeline to the SOCAL meter station.
- g Includes approximately 2 acres of disturbance due to construction of the proposed Transwestern meter station.
- h Includes approximately 2 acres of disturbance due to construction of the proposed Transwestern meter station and 20 acres due to construction of the Mojave Compressor Station.

Operational Impacts - Proposed Project

Impacts to biological resources due to operation of the proposed pipeline segment will generally include the following types of disturbance:

- A 50-foot-wide permanent ROW, including 25 feet in areas previously disturbed by the Mojave pipeline and 25 feet of new disturbance. The ROW is considered to be long-term disturbance and is located within the construction zone disturbance.
- Two acres of long-term disturbance associated with the meter station.
- Loss of individuals of general and sensitive species of plants and wildlife due to crushing by or collisions with equipment.
- Periodic added disturbance, such as noise, dust, and human presence.
- Possible, but unlikely accidents, such as pipeline leaks resulting in fires or vehicle fuel spills.

Acreages shown in Table 7-2 and described below will not represent new disturbance beyond that shown in Table 7-1. That is, acreages for construction disturbance include acreages of disturbance associated with pipeline operation and maintenance described below.

Disturbance to vegetation due to operation of the proposed pipeline segment will occur within a total of 5.02 acres of Mojavean creosote bush scrub in the permanent ROW and within 4.0 acres of disturbed/ruderal habitat in the ROW and at the meter station (Table 7-2). Because the vegetation types traversed by the proposed pipeline route are not high-quality wildlife habitats, these impacts will not be significant.

Vegetation along the proposed Transwestern and Mojave pipeline routes will be allowed to reestablish naturally. The same permanent ROW will be used for periodic inspections of both pipelines. As such, operation of the Transwestern pipeline will not represent a substantial additive impact.

General Wildlife

Because the wildlife habitats that will be disturbed due to operation and maintenance of the proposed pipeline route are of low quality, relatively few individuals of wildlife species will be lost, displaced, or disturbed by indirect impacts (such as noise or dust). As such, impacts to general wildlife species will not be significant.

Operation and maintenance of the Mojave and the proposed Transwestern pipeline segment will impact generally low-quality wildlife habitats. As such, cumulative impacts to wildlife species will not be significant.

Riparian/Aquatic Habitats

The proposed pipeline route will avoid riparian and aquatic habitats by boring under the Colorado River; therefore, direct impacts will not occur. Potential indirect impacts to habitats and wildlife species utilizing them will include accidental fuel spills from equipment. This is considered an unlikely event. Safety controls have been developed to minimize the likelihood of these indirect impacts (see Section 4).

Sensitive Species

Sensitive species in the region of the pipeline route are described in Section 6. Due to lack of disturbance to suitable habitat along the pipeline route, operation and maintenance impacts will not occur to Yuma clapper rail, bald eagle, peregrine falcon, and other sensitive bird species. Based on observations of the 24 July, 1991 survey, barrel cactus and desert tortoise do not appear to occur along the pipeline route. As such, impacts to those species due to operation and maintenance of the pipeline will not occur. Because the proposed pipeline will cross under the Colorado River, operation and maintenance impacts to bonytail chub and razorback sucker will not occur.

Because the Mojave pipeline will be adjacent to the proposed pipeline route, disturbances will be similar. As such, cumulative impacts due to pipeline operation and maintenance will not be significant.

Operational Impacts - Project Option

Operational impacts to plant and animal life resulting from the project option, i.e., crossing the Colorado River via the suspension bridge, will be similar to those resulting from the proposed project, except for the following:

Acreages of disturbance to habitats resulting from the operation of the project option will be the same as those resulting from its construction, namely a total of 5.16 acres of Mojavean creosote bush scrub, including 3.46 acres that contain a relatively high level of existing human-caused disturbance. The remainder of disturbance (3.7 acres) will occur in areas that are already highly disturbed and/or contain ruderal habitats. These include the railroad ROW and areas already disturbed by Mojave pipeline construction activities. See Table 7.2 for a summary of differences in acreage disturbed between the proposed project and the project option.

TABLE 7-2

APPROXIMATE ACRES OF PIPELINE OPERATION AND MAINTENANCE
BY HABITAT, ALONG THE PROPOSED TRANSWESTERN PIPELINE ROUTE^a

Habitat Type	Length of Occurrence Along Transwestern Route (feet)	Acreage in Permanent ROW	
		Transwestern Route	Mojave and Transwestern Routes Combined
PROPOSED ROUTE			
Mojavean creosote bush scrub-low to moderate disturbance	3000	1.7	3.4
Mojavean creosote bush scrub-high disturbance	5200 ^b	3.32 ^b	5.62 ^b
Disturbed/ruderal	5000 ^d	4.0 ^d	26.0 ^e
Total	13,200	9.02	35.02
PROJECT OPTION			
Mojavean creosote bush scrub-low to moderate disturbance	3000	1.7	3.4
Mojavean creosote bush scrub-high disturbance	5000 ^f	3.46 ^f	6.06 ^f
Disturbed/ruderal	4500	3.7 ^g	25.4 ^h
Total	12,500	8.86	34.86

- ^a Acreages shown in this table represent areas within which permanent or long-term disturbance associated with maintenance of the pipeline will occur. These areas are located within areas of construction disturbance shown in Table 5.1.
- ^b Includes .86 acres for the 500 feet of 20-inch pipeline to the SOCAL meter station and .16 acres for the 700 feet of 10-foot access road.
- ^c Includes 1200 feet of route that parallel the Mojave pipeline route, 2300 feet of new pipeline construction, and 1500 feet of extra workspace associated with boring under Interstate Highway 40.
- ^d Includes approximately two acres of disturbance due to the proposed Transwestern/PG&E and SOCAL Meter Station.
- ^e Includes approximately two acres due to the proposed Transwestern/PG&Z and SOCAL Meter Station and 20 acres due to the Mojave Compressor Station.
- ^f Includes approximately .86 acres for the 500 feet of 20-inch pipeline to the SOCAL meter station.

- 3 Includes approximately two acres of disturbance due to the proposed Transwestern/PG&E and SOCAL Meter Station.
- 4 Includes approximately two acres due to the proposed Transwestern/PG&E and SOCAL Meter Station and 20 acres due to the Mojave Compressor Station.

Impacts of construction and operation of the proposed project and project option on plant and animal life would be rendered nonsignificant by the incorporation of appropriate mitigation measures (see Section 9).

E. Noise

The potential for increase in noise levels resulting from construction and operation of the proposed project and project options will be nonsignificant, especially in comparison with the potential for increase in noise levels resulting from the Mojave Pipeline, which was determined to be nonsignificant without the incorporation of mitigation measures. No mitigation measures will be required.

F. Light and Glare

The potential for increase in light and glare resulting from construction and operation of the proposed project and project options will be nonsignificant, especially in comparison with the potential for increase in light and glare resulting from the Mojave Pipeline, which was determined to be nonsignificant without the incorporation of mitigation measures. No mitigation measures will be required.

G. Land Use

Construction Impacts - Proposed Project

The construction-related movement of equipment, supplies, and commuting workers on the local roads and highways will temporarily add to normal traffic density, but will not result in significant long-term impacts on roads and highways.

Pipeline crossings of Interstate Highway 40 will be accomplished by boring beneath the roadbeds, thereby not interfering with traffic and service along these major transportation corridors. At more lightly traveled county, local, and unpaved roads, open-cut excavation will be used for pipeline construction and will require that temporary detours be arranged. However, such construction-related delays and/or detours are not considered significant because of the low traffic volumes and the short period of interference.

The proposed project will not increase pipeline congestion on the existing pipeline suspension bridge and therefore results in a beneficial land use impact since future pipeline use of the bridge is not precluded. It will also demonstrate the flexibility of directional boring technology as a Colorado River crossing technique, which can then be used by other future pipelines without direct disturbance of the river bottom. No cumulative land use impacts will result if the proposed pipeline is installed by boring beneath the Colorado River, since overall land use will not be affected.

Construction Impacts - Project Option

Construction impacts to land use resulting from the project option, i.e., crossing the Colorado River via the suspension bridge, will be similar to those resulting from the proposed project, except for the following:

The proposed project will result in the addition of one new pipeline to the existing pipeline suspension bridge. This bridge has a limited capacity to accept additional pipelines, therefore this project will reduce future flexibility because less room will exist for future pipelines to cross the river at this point. This impact will be less than significant if BLM determines that additional natural gas transportation represents an appropriate use of this increment of bridge capacity or if an additional method of river crossing is employed. This bridge can only accommodate two additional pipelines before the construction of additional supports is necessary. This construction can result in disturbance to the river bottom.

Operational Impacts - Proposed Project

Following construction, the surface of the pipeline ROW will be restored, and allowed to naturally revegetate to its previous use and appearance. The meter station site will preclude other land uses on the two-acre site for the life of the project. These impacts are not considered significant.

The project will limit the allowable land uses along the ROW for the life of the project. The amount of land that will be disturbed over the long term, including the meter station totals approximately 9.02 acres. This does not include approximately 1,500 feet of the pipeline that crosses under the Colorado River. The proposed activity is consistent with BLM's planned use as a utility corridor.

Operational Impacts - Project Option

Operational impacts to land use resulting from the project option, i.e., crossing the Colorado River via the suspension bridge, will be similar to those resulting from the proposed project, with a total of 8.86 acres of land disturbed over the long term.

Effects of the proposed project and project option on land use will be nonsignificant, especially in comparison with the effects on land use resulting from the Mo'ave Pipeline, which were determined to be nonsignificant without the incorporation of mitigation measures. No mitigation measures will be required.

HL. Natural Resources.

Effects of the proposed project and project option on natural resources will be nonsignificant, especially in comparison with the effects on natural resources resulting

from the Mojave Pipeline, which were determined to be nonsignificant without the incorporation of mitigation measures. No mitigation measures will be required.

I. Risk of Upset

Effects of the proposed project and project option on risk of upset will be nonsignificant, especially in comparison with the effects on risk of upset resulting from the Mojave Pipeline, which were determined to be nonsignificant without the incorporation of mitigation measures. No mitigation measures will be required.

J. Population

Effects of the proposed project and project option on population will be nonsignificant, especially in comparison with the effects on population resulting from the Mojave Pipeline, which were determined to be nonsignificant without the incorporation of mitigation measures. No mitigation measures will be required.

K. Housing

Effects of the proposed project and project option on housing will be nonsignificant, especially in comparison with the effects on housing resulting from the Mojave Pipeline, which were determined to be nonsignificant without the incorporation of mitigation measures. No mitigation measures will be required.

L. Transportation/Circulation

Effects of the proposed project and project option on transportation and circulation will be nonsignificant, especially in comparison with the effects on transportation and circulation resulting from the Mojave Pipeline, which were determined to be nonsignificant without the incorporation of mitigation measures. No mitigation measures will be required.

M. Public Services

Effects of the proposed project and project option on public services will be nonsignificant, especially in comparison with the effects on public services resulting from the Mojave Pipeline, which were determined to be nonsignificant without the incorporation of mitigation measures. No mitigation measures will be required.

N. Energy

Effects of the proposed project and project option on energy will be nonsignificant, especially in comparison with the effects on energy resulting from the Mojave

Pipeline, which were determined to be nonsignificant without the incorporation of mitigation measures. No mitigation measures will be required.

O. Utilities

Effects of the proposed project and project option on utilities will be nonsignificant, especially in comparison with the effects on utilities resulting from the Mojave Pipeline, which were determined to be nonsignificant without the incorporation of mitigation measures. No mitigation measures will be required.

P. Human Health

Effects of the proposed project and project option on human health will be nonsignificant, especially in comparison with the effects on human health resulting from the Mojave Pipeline, which were determined to be nonsignificant without the incorporation of mitigation measures. No mitigation measures will be required.

Q. Aesthetics

Potential impacts to visual resources will be nonsignificant, as they were in the Final FEIR/EIS for the Mojave Pipeline by implementing environmental and safety controls involving recontouring. Therefore, no mitigation measures will be required.

R. Recreation

Effects of the proposed project and project option on recreation will be nonsignificant, especially in comparison with the effects on recreation resulting from the Mojave Pipeline, which were determined to be nonsignificant without the incorporation of mitigation measures. No mitigation measures will be required.

S. Cultural Resources

Construction Impacts to Cultural Resources - Proposed Project

Table 7-3 summarizes the results of the current cultural resource inventory within the project alignment. The temporary construction ROW for the pipeline will generally be 75 feet wide with a permanent ROW width of 50 feet. Work spaces, access roads, and other project-related ground disturbing activities will be kept within the 200-foot corridor surveyed for the Mojave Pipeline to avoid impacts to cultural resources. Within the unsurveyed portions of the project, all undisturbed areas outside the 200-foot Mojave survey corridor are to be avoided. Specific areas to be avoided are discussed below.

Although the Needles Highway Bridge is listed on the National Register it appears unlikely that the Transwestern project will adversely affect this resource based on its present function. Impacts to the other resources listed in Table 7-3 will be similar to those from the Mojave Pipeline. Only if the removal of the structures is required will the potential impacts be greater.

An intensive survey of the proposed project corridor has not been conducted as part of this study, however, the proposed project is located mostly within the survey corridor for the Mojave Pipeline. The cultural resources survey for the Mojave Pipeline addressed a 200-foot-wide corridor, 100 feet on either side of their centerline. Therefore, where the Transwestern alignment is within 100 feet of the Mojave pipeline an intensive cultural resources survey has been completed (McGuire 1990). The cultural resources survey for the Mojave Pipeline did not identify any significant cultural resources along the main Transwestern alignment. During the Transwestern field visit, however, an undocumented potential resource was noted. A wooden pole utility line is crossed by the alignment. This unevaluated resource will be avoided.

The proposed alignment is located north of the Mojave alignment between the Interstate Highway 40 crossing and the river boring location on the east side of the river. A water tank adjacent the boring location will be avoided to prevent impacts to this structure. The undisturbed portion of the proposed bore location on the west side of the river will be avoided to prevent potential impacts to any undocumented resources.

Construction Impacts to Cultural Resources - Project Option

Construction impacts to cultural resources resulting from the project option, i.e., crossing the Colorado River via the suspension bridge, will be similar to those resulting from the proposed project, except that the entire proposed ROW for this option does lie within the Mojave ROW, which has been previously surveyed for cultural resources.

Operational Impacts to Cultural Resources - Proposed Project

Based on the avoidance of areas indicated under construction impacts, no additional impacts are anticipated to cultural resources due to the operation of the Transwestern pipeline.

The proposed project is generally situated within the survey corridor for the Mojave Pipeline (McGuire 1990). Based on the results of this survey and archival research, no significant resources are located within this survey corridor, and consequently the proposed project area. Several unevaluated areas outside of the Mojave Pipeline Corridor that are within the proposed project corridor will be avoided, however,

including an undisturbed utility line crossing, a water tank near the east end and all other undisturbed areas. Based on the restrictions and areas avoidance indicated above, there will be no impacts to significant resources.

Operational Impacts to Cultural Resources - Project Option

Operational impacts to cultural resources resulting from the project option, i.e., crossing the Colorado River via the suspension bridge, will be similar to those resulting from the proposed project.

Impacts of construction and operation of the proposed project and project option on cultural resources would be rendered nonsignificant by the incorporation appropriate mitigation measures (see Section 9).

TABLE 7-3
 TRANSWESTERN PIPELINE PROJECT
 CULTURAL RESOURCES

<u>Site Number</u>	<u>Description</u>	<u>Comments</u>
CHL-985	Desert Training Center, California-Arizona Maneuver Area	
SHPO 71	Needles Highway Bridge	NRHP 9-30-88
SHPO 105	Topock (Mellen)	
	Water tank	Status unknown
MP-B3	Chipping station	Recommended not eligible (McGuire 1990)
AZ L:7:12	Quarry	Recommended not eligible (McGuire 1990)
AZ L:7:13	Rock ring	Recommended not eligible (McGuire 1990)
	Utility line	Status unknown
	Mojave Desert	Native American concerns
	Colorado River	Native American concerns

8. ANY ADVERSE EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

The potential environmental impacts of the proposed projects are discussed in the previous section. No significant adverse environmental impact will result from implementation of the proposed project or project option, with implementation of mitigation measures included in Section 9.

9. MITIGATION MEASURES WHICH HAVE BEEN INCORPORATED IN THE PROJECT

Mitigation measures that follow have been summarized. For additional details, refer to the project description and resource discussions.

Where appropriate, mitigation measures have been proposed to further reduce environmental impacts to a level of nonsignificance. The following section describes the measures suggested for each of the impacted environmental resources described in Section 7. Unless otherwise noted, the measures are applicable to the Proposed Project and the Project Option.

A. Earth

The following mitigation measures will be implemented during clearing, construction, and restoration to control the potential loss of soils through wind erosion:

1. Topsoil Banking

- "Topsoil from nondisturbed areas will be separated and stock piled along the pipeline alignment. Once backfilling and recontouring have been completed, this soil shall be replaced."

2. Mojave Desert

- "All areas of the ROW containing native vegetation shall be restored by the replacement of the segregated topsoil onto the disturbed ROW. After return of the topsoil and the windrowed vegetation, the disturbed areas shall be imprinted."
- "No mulching, fertilization or reseeding shall take place within the Mojave Desert beyond the replacement of the windrowed vegetation."
- "Areas with a high potential for either wind or water erosion shall be stabilized by the use of a tackifier such as J-tac (40-80 lbs/acre)."

3. Grading and Erosion

- "In addition to the replacement of topsoil, rock and natural plant debris shall also be replaced to reduce erosion potential."
- "Erosion control devices shall be placed where the pipeline alignments or new access roads are constructed on slopes or in other locations such as stream crossings where erosion may occur."

These mitigation measures will reduce impacts to earth resources to a level of nonsignificance.

B. Air

Several mitigation measures reduce impacts to air quality to nonsignificance during construction of the proposed project and project option are as follows:

4. "The ROW shall be watered to reduce dust."
5. "Construction related vehicle emission shall be reduced by using proper equipment."
6. "Construction related vehicle emissions shall be reduced by using proper air-to-fuel ratios."

These mitigation measures will reduce impacts to air quality to a level of nonsignificance.

C. Water

Several mitigation measures to reduce impacts to water quality to nonsignificance during construction of the proposed project and project option are as follows:

7. Hydrostatic test water will be purchased from the municipal water supply at the Golden Shores Resort on the Arizona side of the river, less than one mile north of the Interstate Highway 40. The total volume of water to be purchased for the hydrostatic tests is approximately 795,000 gallons. The hydrostatic test water for the following sections of the pipeline will be transported and discharged at the proposed scrubber station site in Section 10, T16N, R21W, Mohave County, Arizona:

- Transwestern to Topock 24" Pipeline (Proposed Project and Project Option)
- Transwestern 24" Pipe for Colorado River Bore (Proposed Project)
- Transwestern to SOCAL 20" Pipeline (Proposed Project and Project Option)

The hydrostatic test water for the following section of the pipeline will be discharged into a 38-foot x 38-foot x 3-foot deep discharge pit on the west side of the PG&E Compressor Station. The water will be discharged at a rate of 2500 gallons per minute with a splash barrel to control the flow rate and hay bales to trap solids.

- Transwestern to PG&E 20" Pipeline (Proposed Project and Project Option)

The hydrostatic test water for the following meter stations will be discharged inside the meter station fence at a rate controlled by the meter station piping valves. Hay bales will also be used to trap solids. The topography of the area will eliminate the possibility for discharge water to run off into the Colorado River.

- Transwestern to PG&E and SOCAL Meter Stations

8. "If required by state or federal permit, hydrostatic water [will] be tested and treated before release."
9. "Hydrostatic test water [will] be released properly to reduce the potential for scour."
10. "Water discharged in hydrostatic testing [will] be done in accordance with local, state and federal permits."
11. "Chemicals, fuels, and lubricating oil [will] not be stored near stream channels. Any accidental spills shall be promptly cleaned up."

D. Plant and Animal Life

Mitigation measures to reduce impacts to plant and animal life to nonsignificance during construction and operation of the proposed project and project option are as follows:

12. "Controls on Traffic, Access, and Construction Disturbance Area:"

"Project-related activities shall be restricted to established roads, designated access roads, the construction ROW, and other designated project areas and shall be examined during preconstruction surveys. Access roads shall be clearly flagged for use. The construction ROW shall also be clearly marked at the centerline and outside boundaries."

13. "Clearing, Grading, and Dust Control:"

"Trees and large shrubs shall be avoided or removed prior to clearing. The upper two to six inches of topsoil from the construction ROW requiring grading shall be removed and windrowed with the vegetation and kept separate from the remaining spoils."

"Grading shall be limited to that area necessary to permit movement and operation of equipment."

Run-off from project activities into the Colorado River will be avoided.

14. "Topsoil Salvage and Handling:"

"Surface material [from undisturbed areas] ("topsoil") [will] be salvaged from trenching and any grading activities for preservation of topsoil and existing seedbanks in natural vegetation."

15. "Trenching, Blasting, and Inspection:"

"The trench must be backfilled as quickly as possible following lowering of the pipe. The maximum length of open trench at any one time shall not exceed [one] mile. For trenches not filled at the end of the day, escape ramps for wildlife shall be installed at distances no greater than 0.25 mile apart."

16. "Pets, Camping Firearms, and Use of Area:"

"No camping shall be permitted on the construction ROW. Only authorized camping areas may be utilized."

"To prevent harassment, mortality, or destruction of dens/burrows of wildlife species, pets shall not be allowed on the ROW, staging areas, access roads or any other sites required for construction activities. Firearms shall also be prohibited in the same areas. Unauthorized workers shall not be permitted at construction areas during non-scheduled hours."

17. "Trash Control:"

"To avoid attracting species of concern and potential predators, all food-related trash and litter (wrappers, cans, bottles, food scraps) shall be placed in closed containers and disposed of daily. The working ROW of each spread shall be [checked] daily to remove any trash or litter which may not have been disposed of properly."

18. "Handling and Disposal of Hazardous Materials:"

"Refueling and storage of hazardous materials shall occur in previously disturbed areas. Areas where refueling or storage of hazardous materials is prohibited shall be marked by the environmental monitors. The storage of these materials near streams shall be consistent with CDFG code 5650."

19. "Fire Control Procedures:"

"No trash-burning fires shall be permitted in the construction area. Vehicles used in the ROW with catalytic converters shall be equipped with shielding or other acceptable fire prevention features. Construction spreads must be equipped with fire extinguishers, with workers trained in their use. Fire resistant mats and/or wind screens shall be placed on the ground below welding and grinding operations whenever dry vegetation is present.

"Supervisors shall have the names of local fire fighting agencies. A detailed fire plan shall be prepared as a standard part of a BLM Construction, Operation and Maintenance Plan."

20. "Collection and Harassment of Species:

"No intentional killing or collection of either plants or wildlife shall be permitted. No intentional damage to trees or other vegetation shall be permitted outside of the construction ROW; this shall include the collection of plants including cacti without prior authorization."

21. "Clean-Up:"

"After construction is completed, a final ROW clean-up shall include removal of all stakes, lathes, flagging, barrels, cans, drums, accidental spills and any other refuse generated by construction. No shrub material or other plant cover shall be disturbed during this process."

22. "Surface Restoration:"

"Recontouring to natural lines and grade must be accomplished without disruption to adjacent undisturbed habitat. Sediment collected behind temporary hay bales shall be removed. Permanent water breakers and/or terraces shall be constructed across the ROW on sloping ground to prevent erosion. On steep grades, earth-filled sacks or stone riprap shall be used as determined necessary to stabilize the ground surface."

23. "Post-Construction Access Control:"

"The permanent ROW may be used to access the pipeline in emergency situations as defined under conditions stipulated by the Agencies. Damage to vegetation on the ROW shall be fixed and the ROW restored as soon as possible following the emergency. The appropriate agencies shall be notified. Signs shall be posted indicating the ROW is closed to vehicles."

24. "Post-Construction Environmental Monitoring and Reporting:"

If habitat compensation or specific reclamation measures are required, which can be measured, post-construction monitoring and reporting will take place.

"Post-construction monitoring shall meet two basic objectives: 1) to assess actual impacts that occur during construction, and 2) to monitor other mitigations. Post-construction inspection of the project area shall be conducted by the environmental monitoring team after completion of clean-up and surface restoration.

"A final construction monitoring report shall be prepared. Post-construction monitoring shall be undertaken at the end of the fifth year of operation."

25. "Equipment Operation Inspection and Maintenance:"

"Since most operation of facilities is by remote control, site visits are mainly related to inspection and pipeline maintenance. Access to sites shall be limited to access roads, or newly constructed roads approved as part of the project. All personnel shall attend regular meetings to be reminded about safety and environmental concerns."

26. "Rodenticides and Herbicides:"

"If rodenticide and/or herbicide use is required, the pipeline company shall contact the USFWS and CDFG for review and concurrence with the proposed activity."

27. "Contingency Plans:"

"Each pipeline company shall prepare appropriate contingency plans and procedures prior to initiation of operations and present them to the Agencies for review. These plans shall outline procedures for contacting the Agencies under a variety of situations which may occur. The plans shall provide procedures for notification concerning emergencies related to pipeline leaks or ruptures and what will constitute an emergency; plans for protecting the biological resources during emergency operations; procedures for accomplishing routine pipeline maintenance; and plans for consultation with the Agencies for unforeseen circumstances."

28. "Desert Tortoise:"

The area in California traversed by the pipeline route mentioned no sign of desert tortoise during earlier preconstruction surveys for the Mojave Pipeline project. Although the area was classified as non-habitat for tortoises (BioSystems Analysis, Inc. files), a desert tortoise survey will be conducted prior to construction of this pipeline.

All areas within the projected construction ROW not previously disturbed will be surveyed for sign of tortoises, including individuals, burrows, scat, carcasses, eggshell fragments, and other signs. The survey will be conducted by experienced tortoise biologists following USFWS survey guidelines.

If tortoises are observed above-ground, they will not be moved, but their location will be noted and made available to the biological monitor. Tortoise burrows found will be examined to assess occupancy status. Tortoises will be removed from active burrows and relocated at least 150 feet away from the ROW to an existing, unoccupied burrow. If an existing burrow cannot be located, an artificial burrow will be constructed. Handling of tortoises will follow protocol developed by agency biologists for the Kern River-Mojave pipeline project.

A biological monitor will be present during construction activities in the California portion of the pipeline route. The monitor will be a biologist with prior experience in tortoise handling protocol, and will be familiar with construction monitoring. The monitor will be responsible for moving tortoises in the unlikely event that any are observed in the ROW during construction. Tortoise handling procedures will follow those developed by agency biologists for the Kern River-Mojave pipeline project.

Procedures will be developed for tortoise monitoring and handling in the unlikely event that tortoises are encountered.

E. Noise

No mitigation measures are required.

F. Light and Glare

No mitigation measures are required.

G. Land Use

No mitigation measures are required.

H. Natural Resources

No mitigation measures are required.

I. Risk of Upset

No mitigation measures are required.

J. Population

No mitigation measures are required.

K. Housing

No mitigation measures are required.

L. Transportation / Circulation

No mitigation measures are required.

M. Public Services

No mitigation measures are required.

N. Energy

No mitigation measures are required.

O. Utilities

No mitigation measures are required.

P. Human Health

No mitigation measures are required.

Q. Aesthetics

The mitigation measures described in Section 9-A (Earth) will be implemented to control the potential loss of visual quality to a level of nonsignificance. No additional mitigation measures are required.

R. Recreation

No mitigation measures are required.

S. Cultural Resources

Mitigation measures proposed specifically for the proposed project and project option include the following:

29. Avoidance of the water tower adjacent to the AT&SF line and the historic transmission line, which parallels the Colorado River on the California side.
30. Additional communication with the local Native American community, including communication regarding archaeological resources potentially affected by the project, as well as ethnographic resources.

These mitigation measures will reduce the level of impacts to cultural resources to a level of nonsignificance.

10. ORGANIZATIONS CONTACTED

Bureau of Land Management (BLM), S. Johnson
U.S. Fish and Wildlife Service (USFWS), R. Bransfield
California Department of Fish and Game (CFG), F. Hoover
Fluor-Daniel, J. Ellison

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EXHIBIT G

CALIFORNIA STATE LANDS COMMISSION
MITIGATION MONITORING AND REPORTING PLAN
FOR THE
TRANSWESTERN INTERCONNECT PIPELINE INITIAL STUDY

INTRODUCTION

This document contains the Mitigation Monitoring Plan (the Plan) for the Transwestern to Topock Interconnect Natural Gas Pipeline Project, a 12,500-foot connecting pipeline and associated facilities on the California/Arizona border east of Needles, California.

Recently adopted California statutory legislation (AB3180, CORTESE) requires public agencies to adopt monitoring programs to ensure that mitigation measures contained in an Initial Study/Mitigated Negative Declaration, are effectively implemented. This document will be designed to ensure that mitigation measures contained in the Transwestern to Topock Interconnect Pipeline Project Initial Study are properly monitored and implemented.

This plan consists of a narrative text and attachments, and will serve as a part of the California State Lands Commission's Mitigation Monitoring Program for this project.

IMPLEMENTATION

Responsibilities

The Transwestern Pipeline Company (Transwestern), its representative, or successors-in-interest, remain responsible for full implementation of all mitigation measures adopted from the Initial Study/Mitigated Negative Declaration.

The California State Lands Commission (SLC) shall be responsible for administering and assuring full compliance with the provisions of this Plan. The SLC may delegate monitoring activities to other agencies, consultants, or contractors. The SLC will also ensure that

monitoring reports are received complete, in a timely manner, and that violations are promptly corrected.

Reporting

Verification of Compliance and Non-Compliance Reports shall be prepared by the project monitors using SLC approved forms. A copy of each report will be mailed to Transwestern or its designated representative, as well as to all interested federal, state, and local agencies. Progress toward completion of the required mitigation program, or violations thereof, shall be reported at intervals prescribed by the SLC to Transwestern and interested agencies.

COMPLIANCE

It is recommended that an SLC or SLC designated site monitors be present at the site on a continuous basis throughout the construction and restoration phases of the project to ensure continuous compliance. Verification of monitoring-in-progress and verification of completed mitigations will be undertaken on a construction basis (installed increments) and shall be reviewed by the SLC. The SLC shall notify the applicants in writing of successful completion of a mitigation measure within five working days of receipt of a report verifying completion.

VIOLATIONS

If a report identifies a violation of the mitigation program, the SLC, within one working day of receipt, shall:

- notify the applicant(s), or its designated representative(s) by telephone and order immediate compliance;
- prepare a written notification to the applicant(s), or its designated representative(s) of the violation ordering compliance; and
- identify the need for a follow-up field inspection.

If compliance is not achieved, work should be stopped until compliance is achieved and notification is given by the SLC that work may commence.

If a dispute arises concerning the implementation or success of a mitigation, the dispute may be referred for legal action. In such a case, work on the project will be stopped until the dispute is resolved.

FEES

All costs for the administration and implementation of the Plan shall be paid by the applicant(s).

ENFORCEMENT AND PENALTIES

A determination of non-implementation or non-compliance will result in immediate notification by the SLC to the applicant(s) as described above. If possible, the SLC or SLC designated monitors will order and achieve immediate compliance. If the project is not brought into immediate compliance, a stop-work-order may be prepared. The period of time the stop-work-order will be enforced will be the time required to assure compliance has been achieved. Work on the project may not be resumed until compliance is achieved. Violations of an approved mitigation measure which are not discovered until after construction has been completed will result in one or more of the following actions:

- written notification and demand by the SLC for correction;
- issuance of an infraction citation;
- filing for legal action;
- forfeiture of any bond trust account, or other financial assurance, and/or
- action to recover funds assured under a line of credit.

MITIGATION MONITORING PLAN IMPLEMENTATION

FOR THE

STATE OF CALIFORNIA

An abridged version of each mitigation measure included in the Initial Study will be listed in the Monitoring Plan in sequential order as they occur in the Initial Study. In addition, the full text of the mitigation measure from the Initial Study will also be included for reference. For each mitigation measure, the program table includes specific information as to when the measure is to be applied and specifies who will be responsible for monitoring the particular mitigation measure. Certain plans or reports require preparation by qualified individuals, and these are specified as needed. If not apparent in the wording of the mitigation measure, the criteria to be utilized to determine whether the measure has been implemented satisfactorily is provided. Satisfactory completion of a mitigation measure or weekly compliance with the mitigation measure is indicated by a signature and a date in the appropriate spread column.

The procedures for monitoring certain activities are discussed below:

The program is designed to oversee the monitoring operations of the pipeline project. This will be accomplished by a three-part system of in-field observation of all construction activities, tracking of all paperwork filed by the pipeline company, and post-construction compliance monitoring.

This document presents a compilation of the mitigation measures required within the State of California for all appropriate resource categories. The preparation of this booklet of mitigation measures forms the basis for the monitoring efforts of all concerned parties.

- A. The in-field monitoring program shall consist of teams of monitors who will track the field efforts of the pipeline environmental monitors. These teams will vary in composition dependant upon field conditions. In general, a monitor will be present during construction and will be responsible for observing the construction activities in conjunction with the company monitors. His or her job will be to assure quality control of the company environmental monitors rather than directly participating in the monitoring activities. Tasks will include the following:

1. Following all activities associated with construction to determine that all mitigation measures are adhered to.
2. Observing and assisting the company environmental monitor in the completion of tasks. This would include assuring that proper procedures are used during the construction phase.
3. Provide written documentation on the activities carried out during the field observations as to the techniques used, the success of the techniques and possible solutions to any difficulties identified in the field.

The in-field monitors will accomplish this work by having copies of all construction diagrams for the construction areas they are assigned to. These construction diagrams should specifically outline the mitigation measures which must be employed. They should provide information on plant and animal species expected to be found in the area, the cultural resources identified within both the construction ROW and a buffer zone adjacent to the ROW and any general guidelines for construction mitigations and rehabilitation procedures. In addition to these construction drawings, they should also have a complete package of all mitigation measures which must be enforced. These guidelines should adequately address all of the procedures which must be followed during both construction and revegetation and rehabilitation.

In most instances, the in-field monitor should be a generalist who will have some knowledge in the fields of soils, biology, geology and cultural resources. Certain portions of the construction may require a more specialized monitor. Under these conditions, a specific monitor may be sent to an area. This would occur when sensitive plant or animal species are present, particularly sensitive cultural resources are encountered or other sensitive activities are occurring. These areas will be identified prior to initiating field work so that scheduling can be accomplished.

In-field monitors should serve primarily in an observational capacity; however, certain conditions may warrant a more active role. If an in-field monitor observes a infraction of the mitigation procedures, that monitor should discuss the infraction with the company environmental monitor. If no response is given, the in-field monitor should immediately contact the company On-Site Environmental Coordinator (OEC).

In-field monitors will report to SLC's Monitoring Program Supervisor (MPS) as well as other State and Federal agencies within California who wish to participate in the program. They will provide weekly summaries of the activities accomplished during construction monitoring. They will identify any problems, report offenses and will keep apprised of the progress of the spread so that scheduling for the specialists can be updated.

- B. The Monitoring Program Supervisor (MPS) will be the main point of contact between the SLC in-field monitors, any other State or Federal agency environmental compliance supervisors, and the pipeline company's Field Environmental Supervisor (FES). The main responsibility of the MPS will be to supervise the work of the in-field monitors and to track the compliance procedures as outlined in the FER and SLC certificates and the BLM right-of-way grant. They will be responsible for scheduling and assigning monitors, determining when and where specialist monitors will be required and tracking all of the paperwork filed both by the SLC monitors as well as the weekly paperwork and the monthly summaries filed by the company FES.

The MPS will prepare monthly reports which will be submitted to the SLC and other interested agencies and copies of the report to each company FES. These reports will provide information on the areas under construction, the timing of construction, the amount of time spent from initial blading to final restoration and any problems encountered. Detailed reports on wildlife and plants encountered, cultural resources encountered and other mitigation measures required will be presented. These data will be compared to the original documentation presented on the construction specification drawings. This information coupled with incident reports on areas where the mitigation plan was not followed will be provided. The circumstances of the discrepancies will also be included, e.g., the mitigation plan was not adequate to meet the needs of a specific situation, mitigation measures were inadvertently violated, or measures were intentionally violated. If the mitigation measures were not adequate to meet the needs of certain situations, strategies to resolve the problem will be discussed. This should include discussions with in-field personnel, discussions with the company FES and OEMs, and possibly discussion with experts in the particular discipline. When solutions are found, memos should be sent to all company FES to alert them to the problems and the proposed solutions.

SEARCHED _____
SERIALIZED _____
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- C. The final phase of the SLC monitoring program will involve conducting post-construction inspections. This will be accomplished by examination of the company provided records, examination of state and federal land managing agency records, and direct in-field observations. In-field observations will be accomplished by either on-ground inspection and/or helicopter inspection. The goals of the program will be to determine if the mitigation measures and the restoration plans as implemented by the pipeline company has been successful. This will be accomplished at the end of the fifth year of operation to assess the approximate acreage for which revegetation has been successful and to assess the relative success of keeping vehicle traffic off the ROW and other mitigations applicable to the post-construction period.

Final field forms will be specific to construction locations, rather than containing information on the entire pipeline. This will allow for space for a signature, date of approval and a space for notes and comments concerning the monitoring program during fieldwork.

Assumptions for mitigation monitoring within the State of California consist of the following:

- Biological and cultural resources will be the most important aspect of the California monitoring compliance program.
- A biologist and an archaeologist will be in the field during construction to assure that compliance with all mitigation measures are adhered to.
- Estimated field times for each spread is based on construction progress of approximately one per day, from the start of clearing and grading through replacement of topsoil and initiation of reclamation.
- An archaeologist will only be necessary on a fill-time basis for the clearing, grading and ditching operations. Following the ditching phase, the archaeologist will spot check areas with known sites to assure that no disturbances to the cultural properties has occurred.

EARTH

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>1. Top Soil Banking Topsoil from nondisturbed areas will be separated and stock-piled along the pipeline alignment. Once backfilling and recontouring have been completed, this soil shall be replaced.</p>	<p>Reviewed during normal biological monitoring inspections.</p>			

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EARTH

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>2. Mojave Desert</p> <p>All areas of the ROW containing native vegetation shall be restored by the replacement of the segregated topsoil onto the disturbed ROW. After return of the topsoil and the windrowed vegetation, the disturbed areas shall be reprinted.</p> <p>No mulching, fertilization or reseedling shall take place within the Mojave Desert beyond the replacement of the windrowed vegetation.</p> <p>Areas with a high potential; for either wind or water erosion shall be stabilized by the use of a tackifier such as J-tac (40-80 lbs/acre).</p>	<p>Reviewed during normal biological monitoring inspections.</p>			

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MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>3. Grading and Erosion Control</p> <p>In addition to the replacement of topsoil, rock and natural plant debris shall also be replaced to reduce erosion potential.</p> <p>Erosion control devices shall be placed where the pipeline alignments or new access roads are constructed on slopes or in other locations such as stream crossings where erosion may occur.</p>	<p>Reviewed during normal biological monitoring inspections.</p>			

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AIR

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
4. The ROW shall be watered to reduce dust.	Reviewed during normal construction inspections.			

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MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
5. Construction related vehicle emissions shall be reduced by using proper equipment.	Reviewed during normal construction inspection.			

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ROUTE NAME 3938

AIR

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
6. Construction related vehicle emissions shall be reduced by using proper air-to-fuel ratios.	Reviewed during normal construction inspection.			

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MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>7. Hydrostatic test water will be purchased from the municipal water supply at the Golden Shores Resort on the Arizona side of the river, less than one mile north of the Interstate Highway 40. The total volume of water to be purchased for the hydrostatic tests is approximately 795,000 gallons. The hydrostatic test water for the following sections of the pipeline will be transported and discharged at the proposed scrubber station site in Section 10, T16N, R21W, Mohave County, Arizona:</p> <p>Transwestern to Topock 24" Pipeline (Proposed Project and Project Option)</p> <p>Transwestern 24" Pipe for Colorado River Bore (Proposed Project)</p> <p>Transwestern to SOCAL 20" Pipeline (Proposed Project and Project Option)</p> <p>The hydrostatic test water for the following section of the pipeline will be discharged into a 38-foot x 38-foot x 3-foot deep discharge pit on the west side of the PG&E Compressor Station. The water will be discharged at a rate of 2500 gallons per minute with a splash barrel to control the flow rate and hay bales to trap solids.</p> <p>Transwestern to PG&E 20" Pipeline (Proposed Project and Project Option)</p> <p>The hydrostatic test water for the following meter stations will be discharged inside the meter station fence at a rate controlled by the meter station piping valves. Hay bales will also be used to trap solids. The topography of the area will eliminate the possibility for discharge water to run off into the Colorado River.</p> <p>Transwestern to PG&E and SOCAL Meter Stations</p>	<p>Reviewed during normal construction inspections.</p>			

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HYDROLOGY — SURFACE WATER

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
8. If required by state or federal permit, hydrostatic water (will) be tested and treated before release.	Reviewed during normal construction inspection. Applicable permit requirements must be met.			

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HYDROLOGY — SURFACE WATER

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
9. Hydrostatic test water [will] be released properly to reduce the potential for scour.	Reviewed during normal construction inspection. Applicable permit requirements must be met.			

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HYDROLOGY – SURFACE WATER

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
10. Water discharged in hydrostatic testing (will) be done in accordance with local, state and federal permits.	Reviewed during normal construction inspection. Applicable permit must be obtained.			

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HYDROLOGY — SURFACE WATER

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____ MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
11. Chemicals, fuels, and lubricating oil (will) not be stored near stream channels. Any accidental spills shall be promptly cleaned up.	Locations of all chemical, fuel, and maintenance activities shall be identified on construction drawings. Reviewed during normal construction inspections.			

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PLANT AND ANIMAL LIFE

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>12. Controls on Traffic, Access, and Construction Disturbance Area Project-related activities shall be restricted to established roads, designated access roads, the construction ROW, and other designated project areas and shall be examined during preconstruction surveys. Access roads shall be clearly flagged for use. The construction ROW shall also be clearly marked at the centerline and outside boundaries.</p>	<p>Reviewed during normal biological monitoring inspections.</p>			

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PLANT AND ANIMAL LIFE

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>13. Clearing, Grading, and Dust Control Trees and large shrubs shall be avoided or removed prior to clearing. The upper two to six inches of topsoil from the construction ROW requiring grading shall be removed and windrowed with the vegetation and kept separate from the remaining soils.</p> <p>Grading shall be limited to that area necessary to permit movement and operation of equipment.</p> <p>Run-off from project activities into the Colorado River will be avoided.</p>	<p>Reviewed during normal biological monitoring inspections.</p>			

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PLANT AND ANIMAL LIFE

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>14. Topsoil Salvage and Handling Surface material (from undisturbed areas) ("topsoil") will be salvaged from trenching and any grading activities for preservation of topsoil and existing seedbanks in natural vegetation.</p>	<p>Review during normal biological monitoring inspections.</p>			

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PLANT AND ANIMAL LIFE

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>15. Trenching, Blasting, and Inspections The trench must be backfilled as quickly as possible following lowering of the pipe. The maximum length of open trench at any one time shall not exceed (one) mile. For trenches not filled at the end of the day, escape ramps for wildlife shall be installed at distances no greater than 0.25 mile apart.</p>	<p>Reviewed during normal biological monitoring inspections.</p>			

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PLANT AND ANIMAL LIFE

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>16. Pets, Camping, Firearms, and Use of Area No camping shall be permitted on the construction ROW. Only authorized camping areas may be utilized.</p> <p>To prevent harassment, mortality, or destruction of dens/burrows of wildlife species, pets shall not be allowed on the ROW, staging areas, access roads or any other sites required for construction activities. Firearms shall also be prohibited in the same areas. Unauthorized workers shall not be permitted at construction areas during non-scheduled hours.</p>	<p>Reviewed during normal biological monitoring inspections.</p>			

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PLANT AND ANIMAL LIFE

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____ MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
17. Trash Control To avoid attracting species of concern and potential predators, all food-related trash and litter (wrappers, cans, bottles, food scraps) shall be placed in closed containers and disposed of daily. The working ROW of each spread shall be [checked] daily to remove any trash or litter which may not have been disposed of properly.	Reviewed during normal biological monitoring inspections.			

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MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>18. Handling and Disposal of Hazardous Materials Refueling and storage of hazardous materials shall occur in previously disturbed areas. Areas where refueling or storage of hazardous materials is prohibited shall be marked by the environmental monitors. The storage of these materials near streams shall be consistent with CDFG Code 5650.</p>	<p>Reviewed during normal biological monitoring inspections.</p>			

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MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>19. Fire Control Procedures No trash-burning fires shall be permitted in the construction area. Vehicles used in the ROW with catalytic converters shall be equipped with shielding or other acceptable fire prevention features. Construction spreads must be equipped with fire extinguishers, with workers trained in their use. Fire resistant mats and/or wind screens shall be placed on the ground below welding and grinding operations whenever dry vegetation is present.</p> <p>Supervisors shall have the names of local fire fighting agencies. A detailed fire plan shall be prepared as a standard part of a BALM Construction, Operation and Maintenance Plan.</p>	<p>Reviewed during normal biological monitoring inspections.</p>			

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MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>20. Collection and Harassment of Species No intentional killing or collection of either plants or wildlife shall be permitted. No intentional damage to trees or other vegetation shall be permitted outside of the construction ROW this shall include the collection of plants including cacti without prior authorization.</p>	<p>Reviewed during normal biological monitoring inspections.</p>			

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PLANT AND ANIMAL LIFE

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____ MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
21. Clean-up After construction is completed, a final ROW clean-up shall include removal of all stakes, lathes, flagging, barrels, cans, drums, accidental spills and any other refuse generated by construction. No shrub material or other plant cover shall be disturbed during this process.	Reviewed during normal biological monitoring inspections.			

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MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
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		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>22. Surface Restoration Recontouring to natural lines and grade must be accomplished without disruption to adjacent undisturbed habitat. Sediment collected behind temporary hay bales shall be removed. Permanent water breakers and/or terraces shall be constructed across the ROW on sloping ground to prevent erosion. On steep grades, earth-filled sacks or stone riprap shall be used as determined necessary to stabilize the ground surface.</p>	<p>Reviewed during normal biological monitoring inspections.</p>			

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PLANT AND ANIMAL LIFE

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>23. Post-Construction Access Control</p> <p>The permanent ROW may be used to access the pipeline in emergency situations as defined under conditions stipulated by the Agencies. Damage to vegetation on the ROW shall be fixed and the ROW restored as soon as possible following the emergency. The appropriate agencies shall be notified.</p> <p>Signs shall be posted indicating the ROW is closed to vehicles.</p>	<p>Reviewed during normal biological monitoring inspections. Should be checked in post-construction inspections.</p>			

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PLANT AND ANIMAL LIFE

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>24. Post-Construction Environmental Monitoring and Reporting</p> <p>If habitat compensation or specific reclamation measures are required, which can be measured, post-construction monitoring and reporting will take place.</p> <p>Post-construction monitoring shall meet two basic objectives: 1) to assess actual impacts that occur during construction, and 2) to monitor other mitigations. Post-construction inspection of the project area shall be conducted by the environmental monitoring team after completion of clean-up and surface restoration.</p> <p>A final construction monitoring report shall be prepared. Post-construction monitoring shall be undertaken at the end of the fifth year of operation.</p>	<p>Reports shall be reviewed by SLC and other identified agencies.</p>			

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MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____ MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>25. Equipment Operation Inspection and Maintenance Since most operation of facilities is by remote control, site visits are mainly related to inspection and maintenance. Access to sites shall be limited to access roads, or newly constructed roads approved as part of the project. All personnel shall attend regular meetings to be reminded about safety and environmental concerns.</p>	<p>Plans shall be submitted to SLC and other identified agencies.</p>			

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PLANT AND ANIMAL LIFE

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____ MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
26. Rodenticides and Herbicides If rodenticide and/or herbicide use is required, the pipeline company shall contact the USFWS and CDFG for review and concurrent with the proposed activity.	Plans shall be submitted to SLC and other identified agencies.			

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MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>27. Contingency Plans Each pipeline company shall prepare appropriate contingency plans and procedures prior to initiation of operations and present them to the Agencies for review. These plans shall outline procedures for contacting the Agencies under a variety of situations which may occur. The plans shall provide procedures for notification concerning emergencies related to pipeline leaks or rupture and what will constitute an emergency; plans for protecting the biological resources during emergency operations; procedures for accomplishing routine maintenance; and plans for consultation with the Agencies for unforeseen circumstances.</p>	<p>Plans shall be submitted to SLC and other identified agencies.</p>			

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MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____		
		MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
<p>28. Desert Tortoise The area in California traversed by the pipeline route mentioned no sign of desert tortoise during earlier preconstruction surveys for the Mojave Pipeline Project. Although the area was classified as non-habitat for tortoises (BicSystems Analysis, Inc. files), a desert tortoise survey will be conducted prior to construction of this pipeline.</p> <p>All areas within the projected construction ROW not previously disturbed will be surveyed for sign of tortoises, including individuals, burrows, scat, carcasses, eggshell fragments, and other signs. The survey will be conducted by experienced tortoise biologists following USFWS survey guidelines.</p> <p>If tortoises are observed above-ground, they will not be moved, but their location will be noted and made available to the biological monitor. Tortoise burrows found will be examined to assess occupancy status. Tortoises will be removed from active burrows and relocated at least 150 feet away from the ROW to an existing, unoccupied burrow. If an existing burrow cannot be located, an artificial burrow will be constructed. Handling of tortoises will follow protocol developed by agency biologists for the Kern River-Mojave pipeline project.</p> <p>A biological monitor will be present during construction activities in the California portion of the pipeline route. The monitor will be a biologist with prior experience in tortoise handling protocol, and will be familiar with construction monitoring. The monitor will be responsible for moving tortoises in the unlikely event that any are observed in the ROW during construction. Tortoise handling procedures will follow those developed by agency biologists for the Kern River-Mojave pipeline project.</p>	<p>Reviewed during normal biological monitoring inspections.</p>			

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CULTURAL RESOURCES

MITIGATION MEASURE	REQUIREMENT TO COMPLY	COMPANY: _____ SPREAD: _____ MONITOR: _____		
		DATE/APPROVAL	MILEPOSTS	COMMENTS
29. Avoidance of the water tower adjacent to the AT&SF line and the historic transmission line, which parallels the Colorado River on the California side.	Reviewed during normal construction inspections.			

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CULTURAL RESOURCES

COMPANY: _____ SPREAD: _____
 MONITOR: _____

MITIGATION MEASURE

REQUIREMENT TO COMPLY

DATE/APPROVAL

MILEPOSTS

COMMENTS

30. Additional communication with the local Native American community, including communication regarding archaeological resources potentially affected by the project, as well as ethnographic resources.

Reviewed during normal construction inspections.

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