

**Meeting of the Central Valley Flood Protection Board
June 24, 2011**

Staff Report – Encroachment Permit

**Occidental of Elk Hills, Inc. (OEHI)
Pipeline Replacement Project, Kern County**

1.0 – ITEM

Consider approval of Permit No. 18666 (Attachment B)

2.0 – APPLICANT

Occidental of Elk Hills, Inc. (OEHI)

3.0 – LOCATION

The project has four (4) Focus Areas that encroach on the Kern River Designated Floodway; all are located northeast of Tupman Road and State Highway 119. (Kern River Designated Floodway, Kern County, see Attachment A)

4.0 – DESCRIPTION

The applicant proposes to remove and replace approximately 4-miles of 16-inch diameter high-pressure natural gas pipeline that is primarily above-grade with the exception of approximately 1,800-feet that will be placed underground by horizontal directional drilling (HDD). In addition, two Natural Gas Liquid (NGL) pipelines (3-inch and 4-inch diameter) approximately 1.5 miles in length will be removed and replaced with three NGL pipelines (two 4-1/2 inch diameter and one 6-5/8 inch diameter). Only segments of the pipelines are adjacent to, cross over, and will be drilled under the Kern River Designated Floodway.

5.0 – PROJECT ANALYSIS

The Pipeline Replacement Project (project) is located in what is known as the North Coles Levee Oil Fields 17-miles southwest of the City of Bakersfield. A routine

maintenance inspection, conducted as part of OEHI's Mechanical Integrity Program, identified external corrosion on the existing 16-inch diameter (16") natural gas pipeline. The extent of the corrosion created a need to remove and replace the pipeline, which provides sales quality natural gas to Pacific Gas and Electric's meter station for distribution in their pipeline systems. The existing 16" pipeline was originally built in 1999.

In addition, OEHI proposes to remove two existing Natural Gas Liquid (NGL) pipelines (See Attachment C-1) and replace with three new pipelines (two 4 ½-inch diameter and one 6 ⅝-inch diameter). The new pipes will be installed concurrently and parallel to the 16" pipe.

All of the new pipelines will be realigned to go under the Outlet Canal of the Kern River Designated Floodway (KRDF) and the California Aqueduct by way of HDD (See Attachments C-2). The new replacement pipelines that are above grade would be installed on existing support structures. There are four (4) Focus Areas where the pipeline(s) encroach on the KRDF, they are:

Focus Areas 1 and 2: Approximately 1,000 feet of the existing pipelines parallel the KRDF Outlet Canal and then cross over it by way of a pipe bridge (See Attachments C-2). The project will ultimately eliminate this segment of the pipelines by placing the new pipelines under the KRDF Outlet Canal using HDD. The buried pipelines and the pipe bridge will be removed from the KRDF Outlet Canal following the NGL pipelines re-route from the two existing gas plants to the new gas plant that is being constructed. Removal must be coordinated with the planned shutdown of the existing gas plants. It is anticipated that the pipelines and pipe bridge will be removed no later than 2014.

Focus Area 3: Approximately 1,600 feet of the existing 16" pipe parallels the KRDF in this location (See Attachments C-3). Most of the pipe is above grade (1,250 feet) and mounted on existing support structures. The alignment of the new pipe will not change. The existing pipe will be removed and disposed of outside of the KRDF.

Focus Area 4: The 16" pipe crosses the KRDF (approximately 641 feet) by way of a pipe bridge (See Attachments C-4). The new replacement pipe will utilize the same bridge. The Kern River channel along this reach of the river is typically dry with flows only occurring during and immediately following periods of heavy precipitation. Construction activities in the KRDF would only be performed when the channel is dry. The pipe bridge was an existing feature prior to the adoption of the KRDF by the Board on April 19, 1976.

The proposed pipeline replacement project will not unduly impeded the free flow of water in the KRDF or jeopardize public safety. Furthermore the proposed project is a permitted use in a Designated Floodway per Title 23, Section 107 (d):

(d) Railroads, streets, bridges, and public utility wires and pipelines for transmission and local distribution.

5.1 – Hydraulic Analysis

A hydraulic analysis was prepared using the USACE hydraulic model Hec-Ras to determine the design water surface elevation at the pipe bridge that crosses the KRDF in Focus Area 4. A flow rate of 5,000 cubic-feet-per-second (cfs) was used in the model per the Kern River-California Aqueduct Intertie Operation and Maintenance Manual, January 1978, (Table 1, Estimated Channel Capacities) for this section of the Kern River. The Board adopted a 4,000 cfs design flow for this section of the KRDF on April 19, 1976. The Hec-Ras model produced a water surface elevation of 305.40-feet at a flow of 5,000 cfs, the bottom chord of the pipe bridge is at an elevation of 308.40-feet.

5.2 – Geotechnical Analysis

The depth of the HDD will be approximately 40-feet below the Outlet Canal of the KRDF and the California Aqueduct (See Attachment C-5). A geotechnical analysis will be done prior the initiation of the HDD to ensure that the depth of the boring is adequate. The California Department of Water Resources will be issuing an encroachment permit for the placement of the pipelines under the aqueduct.

6.0 – AGENCY COMMENTS AND ENDORSEMENTS

The comments and endorsements associated with this project, from all pertinent agencies are shown below:

- There is no local maintaining agency for the project area.
- The U.S. Army Corps of Engineers 208.10 comment letter was received for this application on June 14, 2011. The letter will be incorporated into the permit as Exhibit A.

7.0 – CEQA ANALYSIS

Board staff has prepared the following CEQA Findings:

The Board, as a responsible agency under CEQA, has reviewed Supplemental Environmental Impact Statement/Program Environmental Impact Report for the Sale of Naval Petroleum Reserve No. 1 (Elk Hills) Kern County, California (DOE/SEIS/PEIR-0158-S2) (SCH Number: 1996121013, July 1997) and Mitigation Monitoring Program for the project prepared by the lead agency, the County of Kern. These documents, including project design, may be viewed or downloaded from the Central Valley Flood Protection Board website at <http://www.cvfpb.ca.gov/meetings/2011/06-24-2011.cfm> under a link for this agenda item. These documents are also available for review in hard copy at the Board and the Kern County Planning Department.

The County of Kern has determined that the project would not have a significant effect on the environment and adopted Resolution No. 97-375 on December 15, 1997 and filed a Notice of Determination on December 17, 1997 with the Kern County Clerk. Board staff finds that although the proposed project could have a potentially significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. The project proponent has incorporated mandatory mitigation measures into the project plans to avoid identified impacts or to mitigate such impacts to a point where no significant impacts will occur. These mitigation measures are included in the project proponent's Mitigation Monitoring Program and address impacts to air quality, biological resources, cultural resources, geology and soils, water resources, hazards and hazardous materials. The description of the mitigation measures are further described in the adopted Mitigation Monitoring Program.

8.0 – SECTION 8610.5 CONSIDERATIONS

1. Evidence that the Board admits into its record from any party, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department or other parties that raise credible scientific issues.

The accepted industry standards for the work proposed under this permit as regulated by Title 23 have been applied to the review of this permit.

3. Effects of the decision on the entire State Plan of Flood Control:

The proposed project replaces existing pipes in the same location with the exception of approximately 1,800-feet that will be placed underground. Therefore there will be no effects to the State Plan of Flood Control.

4. Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

Effects from reasonable projected future events would be minimal. Increased runoff in the Kern River could require that the pipelines be relocated to another location.

9.0 – STAFF RECOMMENDATION

Staff recommends that the Board adopt the CEQA Findings, approve Permit No. 18666 and direct the Executive Officer to take necessary actions to execute the permit and to file a Notice of Determination with the State Clearinghouse.

10.0 – LIST OF ATTACHMENTS

- A. Location Maps
- B. Draft Permit No. 18666
- C. Work Area Maps and Photos

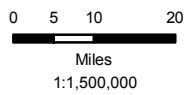
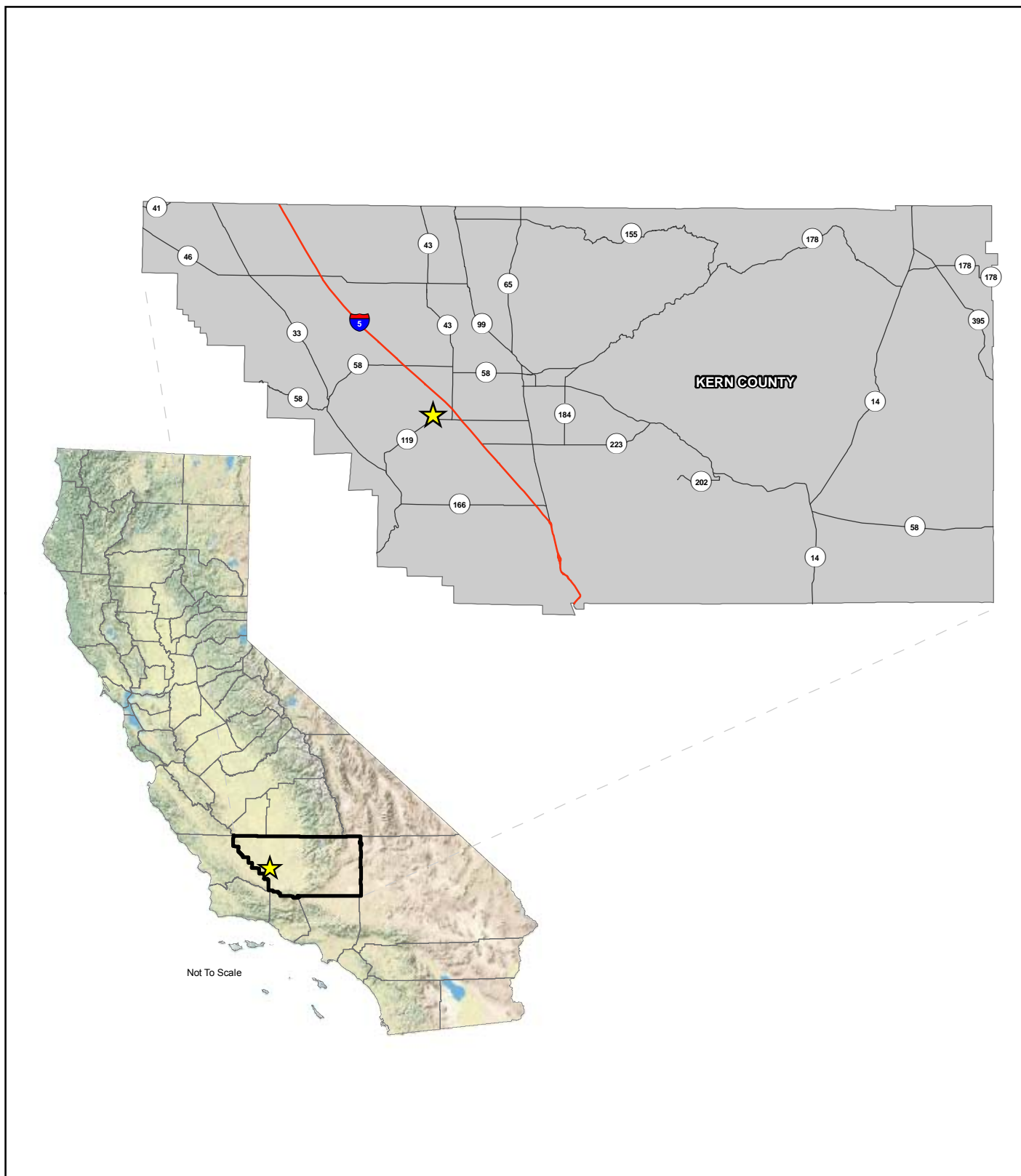
Design Review:	Gary W. Lemon P.E.
Environmental Review:	James Herota / Andrea Mauro
Document Review:	Mitra Emami P.E., Len Marino P.E.

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OCCIDENTAL OF ELK HILLS, INC.

Pipeline Replacement Project Site Vicinity Map

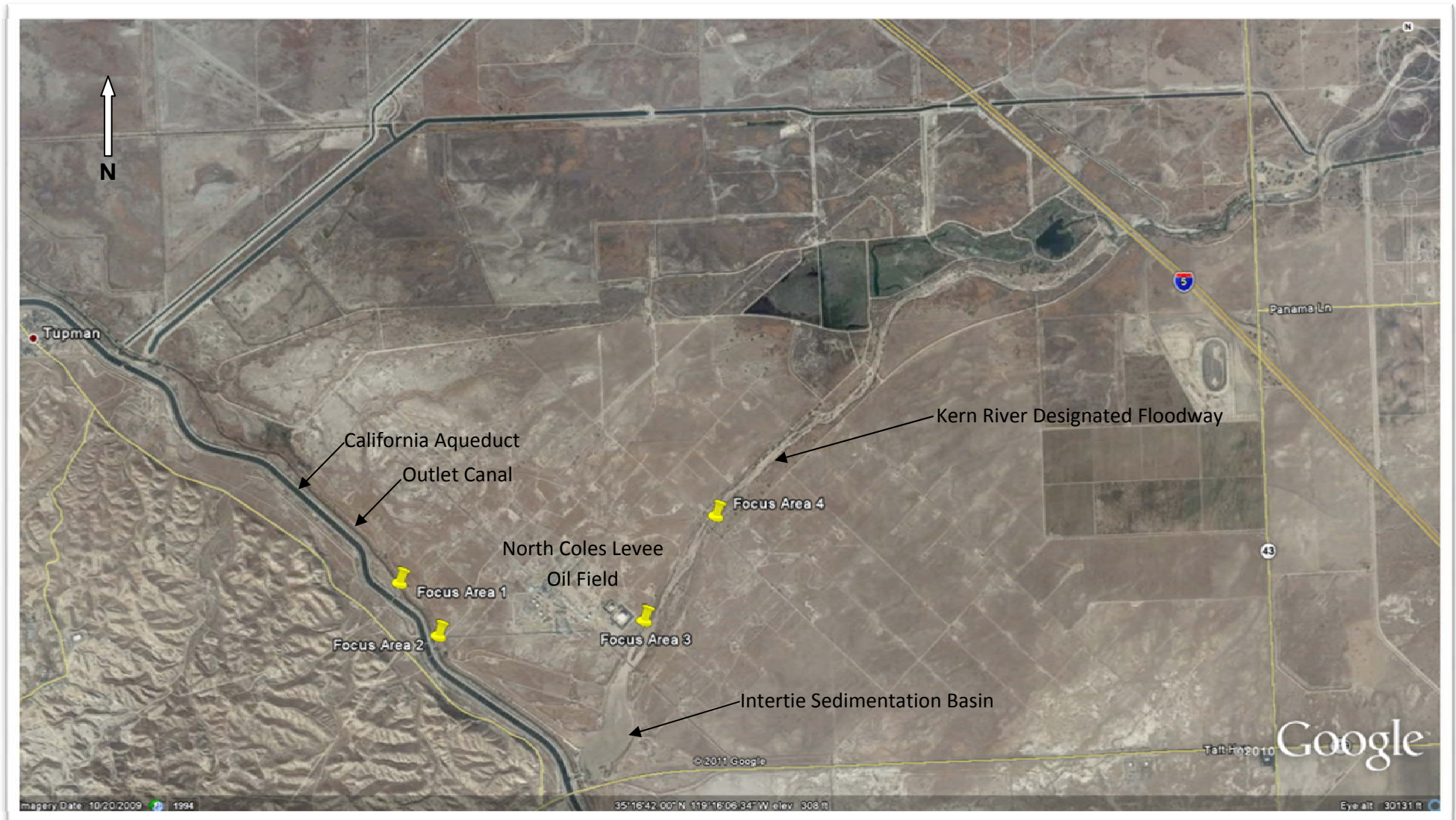


 PROJECT LOCATION



Quad Knopf
Figure 1

Aerial Map of Project Area



DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY
THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 18666 BD

This Permit is issued to:

Occidental of Elk Hills, Inc. (OEHI)
10800 Stockdale Highway
Bakersfield, California 93311

To remove and replace approximately four miles of 16-inch diameter high-pressure natural gas pipeline that is primarily above-grade with the exception of approximately 1,800-feet that will be placed underground by horizontal directional drilling (HDD). In addition, two Natural Gas Liquid (NGL) pipelines (3-inch and 4-inch diameter) approximately 1.5 miles in length will be removed and replaced with three NGL pipelines (two 4-1/2 inch diameter and one 6-5/8 inch diameter). Portions of the pipelines are adjacent to, cross over, and will be drilled under (HDD) the Kern River Designated Floodway. The four project sites are located northeast of Tupman Road and State Highway 119 (Section 28, T30S, R25E, MDB&M, Kern River, Kern County).

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

(SEAL)

Dated: _____

Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the

permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS FOR PERMIT NO. 18666 BD

THIRTEEN: All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Central Valley Flood Protection Board.

FOURTEEN: The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California; including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

FIFTEEN: The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California, including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages related to the Central Valley Flood Protection Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

SIXTEEN: The Central Valley Flood Protection Board and the Department of Water Resources shall not be held liable for any damages to the permitted encroachment(s) resulting from flood fight,

inspection, or emergency repair.

SEVENTEEN: No construction work of any kind shall be done during the flood season from November 1st to July 15th within the Kern River Designated Floodway without prior approval of the Central Valley Flood Protection Board.

EIGHTEEN: The permittee shall contact the Department of Water Resources by telephone, (916) 574-0609, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 10 working days prior to start of work may result in delay of the project.

NINETEEN: The permittee is responsible for repairing any damage to the Kern River Designated Floodway caused by the installation or operation of the high pressure natural gas pipeline.

TWENTY: Trees and brush cleared for construction activities shall be completely burned or removed from the Kern River Designated Floodway.

TWENTY-ONE: The pipe bridge that crosses the Outlet Canal of the Kern River Designated Floodway shall be completely removed from the floodway at the conclusion of the project.

TWENTY-TWO: All abandoned pipe shall be completely removed and disposed of outside the limits of the Kern River Designated Floodway.

TWENTY-THREE: Backfill material for excavations shall be placed in 4- to 6-inch layers and compacted to at least the density of the adjacent, firm, undisturbed material.

TWENTY-FOUR: Drilling fluid pressures and flow rates shall be carefully monitored and controlled to minimize the potential for hydrofracturing.

TWENTY-FIVE: All features of the Kern River Designated Floodway shall be restored to at least the condition that existed prior to the commencement of work.

TWENTY-SIX: The permittee shall maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized representative of the Department of Water Resources or any other agency responsible for maintenance.

TWENTY-SEVEN: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if damaged by any cause. If the permittee does not comply, the Central Valley Flood Protection Board may remove the encroachment(s) at the permittee's expense.

TWENTY-EIGHT: If the project, or any portion thereof, is to be abandoned in the future, the permittee or successor shall abandon the project under direction of the Central Valley Flood Protection Board and Department of Water Resources, at the permittee's or successor's cost and expense.

TWENTY-NINE: The permittee shall comply with all conditions set forth in the letter from the Department of the Army dated June 14, 2011, which is attached to this permit as Exhibit A and is incorporated by reference.

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REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

Flood Protection and Navigation Section (18666)

JUN 14 2011

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, California 95821

Dear Mr. Punia:

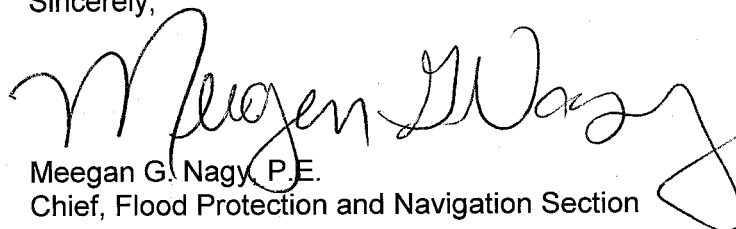
We have reviewed a permit application by Occidental of Elk Hills, Inc. (application number 18666). This project includes the removal and replacement of approximately four miles of 16 inch diameter high-pressure natural gas pipeline; the removal of two natural gas liquid (NGL) pipelines (3 inch and 4 inch diameter) approximately 1.5 miles in length; and the installation of 3 NGL pipelines (two 4.5 inch and one 6.625 inch diameter) approximately 1.5 miles in length. The project is located west of Bakersfield, north of Taft Highway and south of Tupman, at 35.2752°N and 119.3049° W NAD83, Kern County, California.

The District Engineer has no comments or recommendations regarding flood control because the proposed work is not within a federally constructed project, however the proposed work is located just upstream and downstream from the Kern River Intertie, a Federal project. According to the Kern River Intertie Operation and Maintenance Manual, page 15, section 2, the capacities of the channels that existed prior to the construction of the Intertie Project are required for the Intertie project to function effectively. On the Kern River, just upstream from the Intertie, the channel capacity is 5,000 cubic feet per second (cfs). The channel capacity on the Buena Vista Canal, at the location of the pipe crossings, is 4,000 cfs. It is recommended that the Board ensure this encroachment does not affect the ability of the channels to convey these flows.

A Section 10 and/or Section 404 permit application (SPK-2011-00558) is in process for this work.

A copy of this letter is being furnished to Mr. Don Rasmussen, Chief, Flood Project Integrity and Inspection Branch, 3310 El Camino Avenue, Suite LL30, Sacramento, CA 95821.

Sincerely,

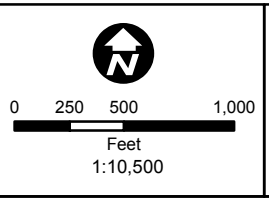
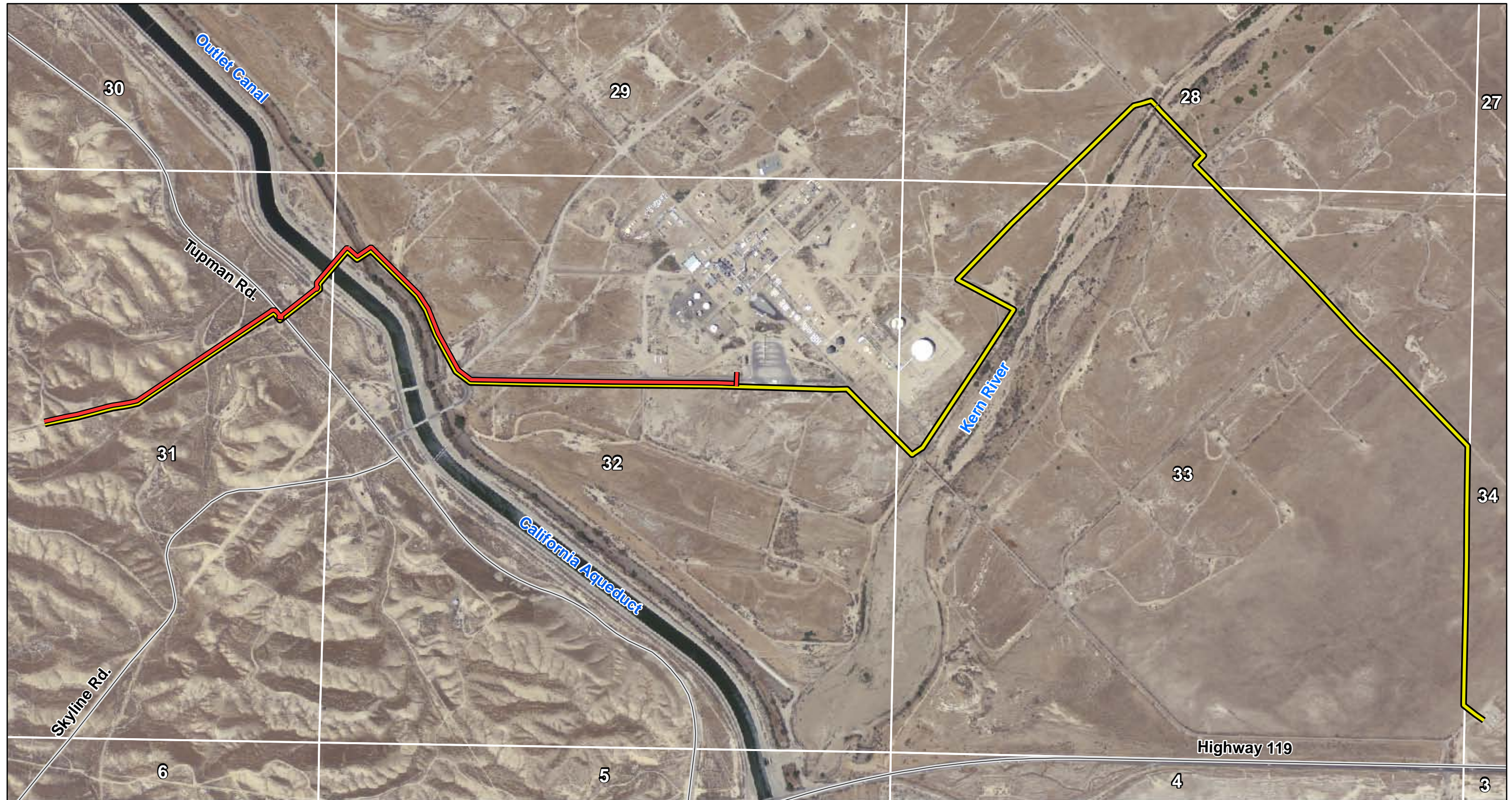

Meegan G. Nagy, P.E.
Chief, Flood Protection and Navigation Section

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OCCIDENTAL OF ELK HILLS, INC.

Pipeline Replacement Project
Aerial Location Map



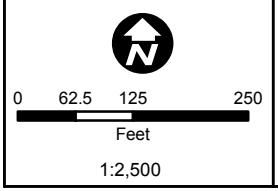
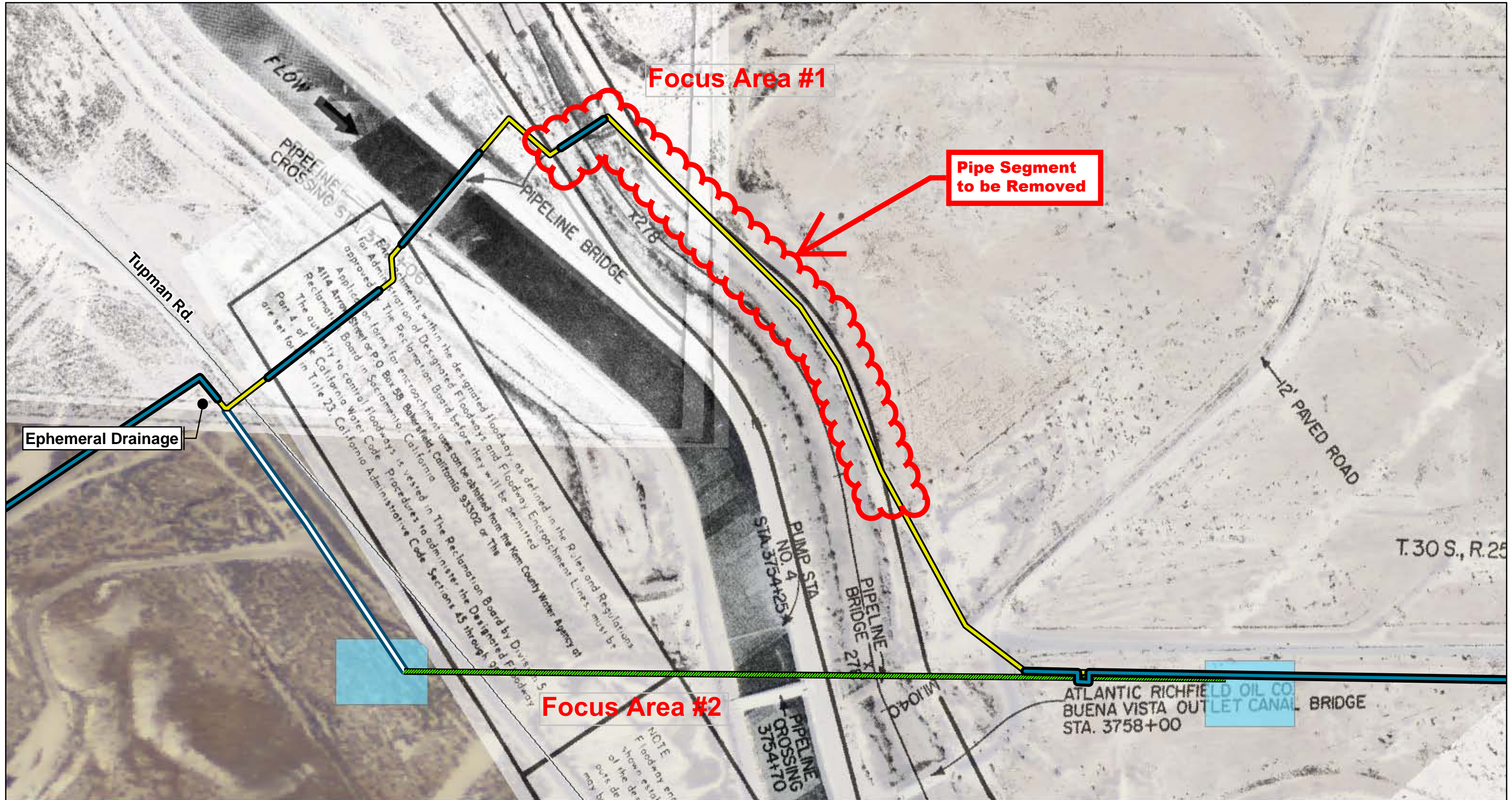
- EXISTING 16" NATURAL GAS PIPELINE
- EXISTING 3" AND 4" NGL PIPELINES

Quad Knopf
Figure 3B

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OCCIDENTAL OF ELK HILLS, INC.

Pipeline Replacement Project
Designated Floodway Boundary Map



- PIPELINE CORRIDOR (BELOW GROUND)
- PIPELINE CORRIDOR (ABOVE GROUND)
- HDD CROSSING
- PIPELINE TIE-IN
- ENTRY/EXIT WORKSPACE (~150' X 200')



Photo 3A: Picture of Focus Area 1 (Outlet Canal) taken on 10/18/2010, facing west-southwest.

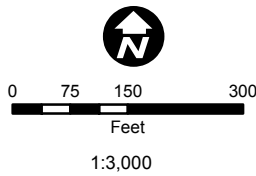
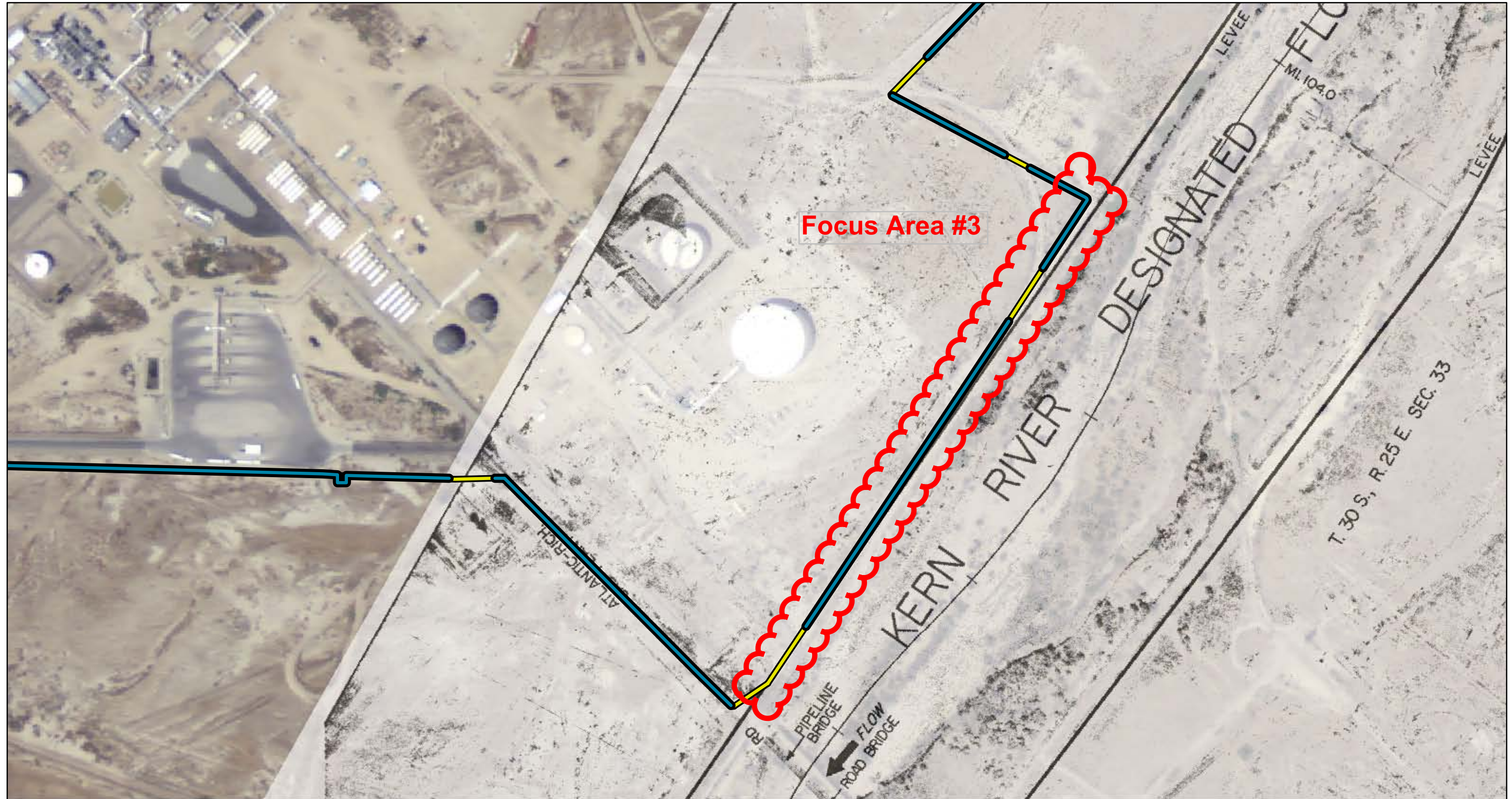


Photo 3B: Picture of Focus Area 1 (Outlet Canal) taken on 11/1/2010, facing south. A pipe bridge supports the section of existing pipelines that cross the Outlet Canal.



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Pipeline Replacement Project
Designated Floodway Boundary Map



- PIPELINE CORRIDOR (BELOW GROUND)
- PIPELINE CORRIDOR (ABOVE GROUND)



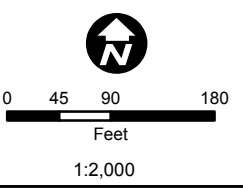
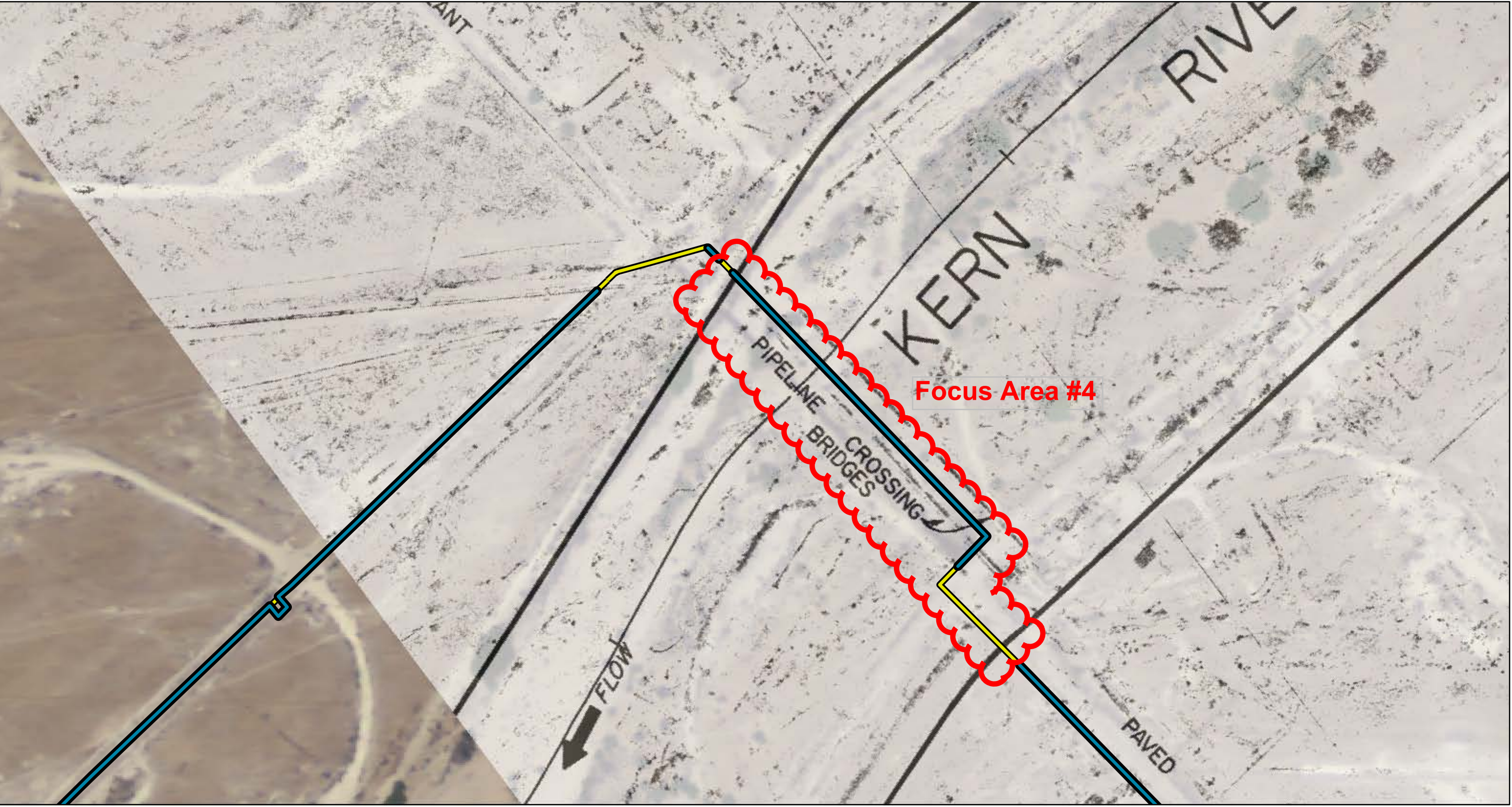
Photo 5A: Picture of Focus Area 3 (Pipeline segment that parallels the Kern River) taken on 10/18/2010, facing north-northeast. The existing 16" pipeline is positioned approximately 25 feet north of the levee toe (approximately 75 feet from the Kern River) and runs parallel to the Kern River, above grade, on existing support structures within the ROW.



Photo 5B: Picture of Focus Area 3 (Pipeline segment that parallels the Kern River) taken on 11/2/2010, facing north-northeast.

OCCIDENTAL OF ELK HILLS, INC.

Pipeline Replacement Project
Designated Floodway Boundary Map





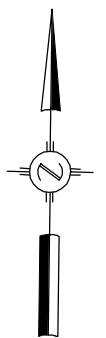
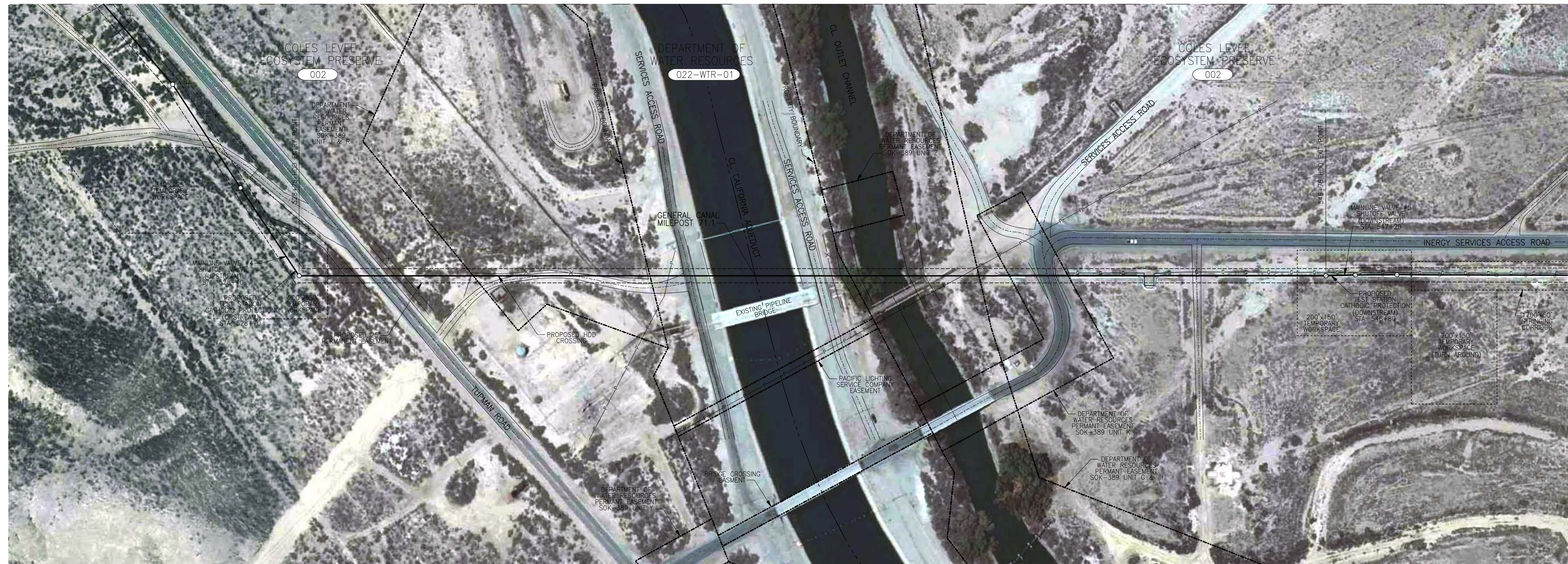
-  PIPELINE CORRIDOR (BELOW GROUND)
-  PIPELINE CORRIDOR (ABOVE GROUND)



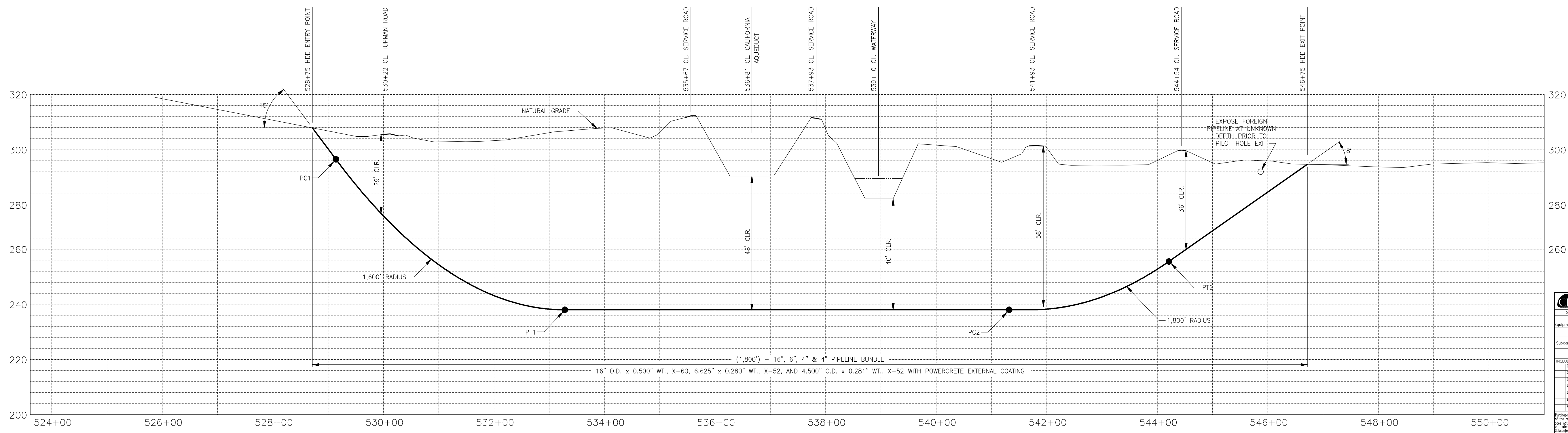
Photo 6A: Picture of Focus Area 4 (Kern River Crossing) taken on 10/18/2010, facing southeast. The existing 16" pipeline (pictured on the left) crosses the Kern River, above-grade on existing support structures (a pipe bridge). The crossing length over the Kern River is approximately 641 feet.



Photo 6B: Picture of Focus Area 4 (Kern River Crossing) taken on 11/1/2010, facing southwest. All construction activities would occur within a 20-foot corridor along the east side of the existing pipe bridge (pictured in the foreground).



PLAN
SCALE: 1"=100'



SECTION
SCALE: HORZ. 1"=100'
VERT. 1"=20'

SUBCONTRACTOR DRAWING DECAL	
DRY ELK HILLS PROJECT	
Subcontractor Name:	
Subcontract Title:	
Equipment/Tag Number(S):	
Project Document Number:	
Subcontract Number	Date Issued
Code No.	Rev. No.
	Date
INCLUDES DOCUMENT CODES: TOTAL SHEETS	
CD	Final Document
CC	No Comments
CC	Comments
CC	Revised
CC	Superseded
CC	Void
CC	For Information
Purchaser's Name of Subcontractor documents does not release Subcontractor from the responsibility of compliance under the Subcontract. Purchaser is provided with a copy of the Subcontract. Subcontractor is not responsible for compliance with the Subcontract or any other obligations, or correct them as of the Purchaser's Name.	
Subcontractor - Purchaser Interface Data Freezer:	
Engineer: Yes No	Date:

15-SEP-2010 17:38:20 17-SEP-2010 KSP:REL

DESCRIPTION	STATION	ELEVATION
1. ENTRY @ 15'	528+75	308.0'
2. PT. OF CURVATURE (RADIUS 1600')	529+33	292.5'
3. PT. OF TANGENCY	533+47	237.9'
4. PT. OF CURVATURE (RADIUS 1800')	541+45	237.9'
5. PT. OF TANGENCY	543+96	255.5'
6. EXIT @ 8'	546+75	294.7'

I.B.M.
PRELIMINARY GROUND SURVEY OBTAINED JUNE 2010.
PREPARED BY WILLBROS ENGINEERING.

DESIGN DATA
CROSSING PIPE LENGTH 1,818' DESIGN PRESSURE 1480 PSIG
DESIGN FACTOR 0.5

CARRIER PIPE
PIPE 1: 4.500" O.D. x 0.281" WT., X-52 WITH 40 MILS ARO (POWERCRETE)
PIPE 2: 4.500" O.D. x 0.281" WT., X-52 WITH 40 MILS ARO (POWERCRETE)
PIPE 3: 6.625" O.D. x 0.280" WT., X-52 WITH 40 MILS ARO (POWERCRETE)
PIPE 4: 16" O.D. x 0.500" WT., X-60 WITH 40 MILS ARO (POWERCRETE)

- NOTES**
- THIS PRELIMINARY PROFILE WAS PREPARED PRIOR TO GEOTECHNICAL INVESTIGATIONS BEING CONDUCTED, AND MAY REQUIRE REVISION AFTER REVIEW OF GEOTECHNICAL FINDINGS.
 - CONTRACTOR TO LOCATE, MARK, AND EXPOSE WHERE NECESSARY EXISTING LINES PRIOR TO EXCAVATION (AND MONITOR DURING DRILLING).
 - CONTRACTOR TO LOCATE AND MAT OVER EXISTING LINES WHERE NECESSARY INCLUDING ACCESS TO AND FROM THE WORKSITE FROM ACCESS ROAD OR ROW.
 - ALL COMMUNICATION AND CONTROL CABLE WITHIN PROPOSED CONSTRUCTION LIMITS SHALL BE LOCATED AND EXPOSED BY POTHOLING.
 - POINTS OF ENTRY AND EXIT OF DEPARTMENT OF WATER RESOURCES RIGHT-OF-WAY SHALL BE PLAINLY AND PERMANENTLY MARKED BY SIGN POSTS EXTENDING 5 FEET ABOVE GRADE.

SCALE: 1"=100'

ISSUED FOR APPROVAL
09-17-10

NO.	REVISION	APPR.	DATE	DWG NO.	REFERENCE
A	ISSUED FOR APPROVAL	KDF	09-17-10	51816-PMT-003	PROPOSED HDD DETAILS AND NOTES
				51816-PMT-002	EXISTING DOC. P-4FS-4 WITH HDD OVERLAY

WILLBROS ENGINEERING

CBI ELK HILLS FIELD **OXY**

OCCIDENTAL OF ELK HILLS, INC.
PROPOSED HORIZONTAL DIRECTION DRILL
CROSSING CALIFORNIA AQUEDUCT

DRAWN BY	KDF	DATE	16-SEP-10	DRAWING NUMBER	51816-PMT-001	SHEET	1 of 1	ISSUE	A
DRIVING CHECK	XXX		XX-AUG-10						
ENGINEERING REVIEW	XXX		XX-AUG-10						