

MINUTE ITEM

Calendar Items 28, 29, & 30
approved as M. U. for
the State Lands
Commission by a vote of 2-0
at its 4-29-81
meeting

MINUTE ITEM

4/29/81
Kuehn
Pinson
W 40135.1
W 40135.2
W 40135.3 PRC 5997

- 28.
- 29.
- 30. AWARD OF OIL AND GAS LEASES FOR THE LINDSEY SLOUGH AREA - PARCELS 1, 2 AND 3

The attached Calendar Items 28, 29, and 30 were considered at the same time.

Mr. Robert Basselton, representing Seahawk Oil International, Inc., appeared, to answer questions

Mr. James L. Erkel, staff attorney for MCOR Oil and Gas Corporation, appeared in opposition to the staff's recommendations. MCOR's main contention was that they did not want their leasehold to be used to gain access. He stated if the Commission accepts the joint bids as proposed in the calendar items, MCOR will consider all appropriate legal remedies to defend its leasehold interest.

However, Mr. William F. Northrop, Executive Officer, stated it is the staff's position that drilling will not take place on MCOR's leasehold and that Seahawk/Casex do have the necessary rights of access in the area. Based upon that advice, the Commission adopted the resolutions as presented in Calendar Items 28, 29, and 30 by a vote of 2-0.

CALENDAR ITEM

P 30

4/81
W 40135.3
Kuehn
Pinson

AWARD OF OIL AND GAS LEASE
FOR THE LINDSEY SLOUGH AREA - PARCEL 3

HIGHEST QUALIFIED BIDDER: JOINT BIDDERS
Seahawk Oil International, Inc.
660 Newport Center Drive, Suite 340
Newport Beach, California 92660

and

Casex Company
1370 Brea Boulevard, Suite 220
Fullerton, California 92635

BID: 16 2/3% royalty on oil, gas and other hydrocarbons plus 79.50% of net profits plus \$20 rental per acre per year.

DATE OF BIL: January 22, 1981.

ACREAGE: 175.52 acres.

TYPE LAND: Tide and submerged.

LOCATION: Portions of Sections 25 and 26, T 5N, R.2E., and a portion of Section 30, T.5N., R.3E., MDM, Solano County. (see Exhibit "A")

TERMS: Primary term: 20 years; Drilling term: 1 year; Surety bond. \$100,000.

AUTHORIZATION TO OFFER:
November 17, 1980.

NOTICE OF INTENTION PUBLISHED:
December 11 and 18, 1980.

OTHER BIDS: The 16 2/3% royalty rate and \$20/acre/year rental were fixed rates determined by staff of the Commission. The bid-factor was percentage of net profits. Other bids received were:

A 4

S 4

-1-

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CALENDAR ITEM NO. 30 (CONTD)

<u>Bidder</u>	<u>% Net Profits</u>
MCOR Oil and Gas Corp.	75.875
Texas Oil and Gas Corp.	22.50

STAFF DETERMINATION:

Sufficient as to technical and economic factors.

LEGAL STAFF DETERMINATION:

- A. The Commission has complied with the procedural requirements of law.
- B. The bid submitted conforms with:
 1. The bid requirements as specified in the proposal of the Commission;
 2. The applicable provisions of law; and
 3. The rules and regulations of the Commission.
- C. MCOR Oil and Gas Corporation has informed the staff that it believes that Seahawk and Casex do not have access to an upland drillsite. MCOR claims that it has an exclusive right to drill from the same area where Seahawk and Casex claim they have drilling access rights. Staff Counsel has concluded that Seahawk's and Casex's contentions are correct and accordingly, that Seahawk and Casex have a sufficient right of access to perform under the lease.

ENVIRONMENTAL INFORMATION:

On November 17, 1980, the Commission certified Negative Declaration #257 has having been prepared in compliance with the requirements of CEQA and implementing guidelines, and determined that the subject project would not have a significant effect on the environment. This project is situated on land

CALENDAR ITEM NO. 30 (CONTD)

identified as possessing significant environmental values pursuant to PRC 6370.1, and is classified in a use category, Class B, which authorizes limited use. Through the circulation of Negative Declaration #257 staff has coordinated this project with the agencies which nominated the site as containing significant environmental values. They have found this project to be compatible with their nomination.

EXHIBITS: A. Location Map. B. Negative Declaration.

IT IS RECOMMENDED THAT THE COMMISSION:

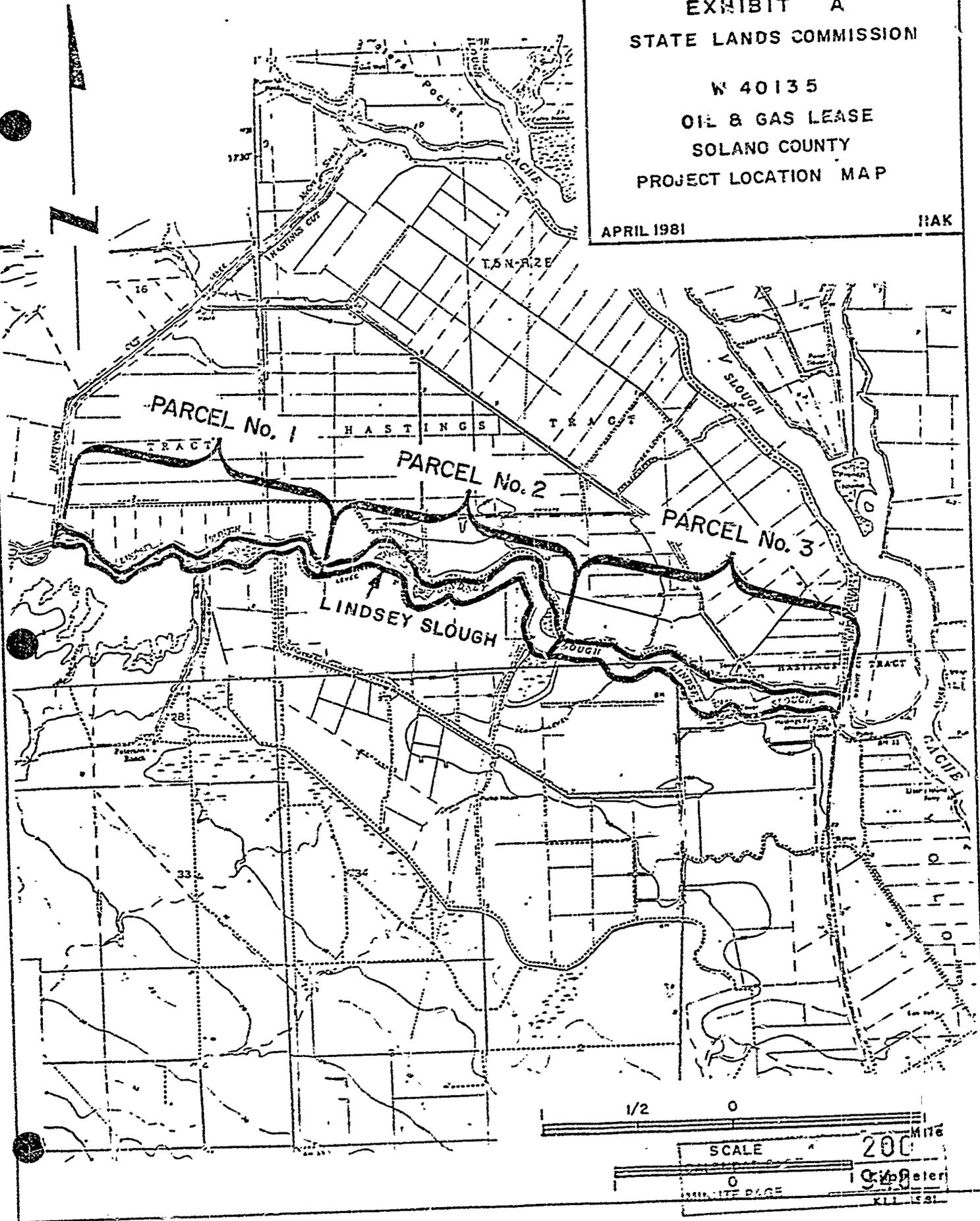
1. DETERMINE THAT A NEGATIVE DECLARATION FOR THIS PROJECT WAS PREPARED PURSUANT TO THE PROVISIONS OF CEQA AND WAS CERTIFIED BY THE COMMISSION ON NOVEMBER 17, 1980. AT THAT TIME A FINDING WAS MADE THAT THIS PROJECT WOULD NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.
2. FIND THAT GRANTING OF THIS LEASE WILL HAVE NO SIGNIFICANT EFFECT UPON ENVIRONMENTAL CHARACTERISTICS IDENTIFIED PURSUANT TO SECTION 6370.1 OF THE PUBLIC RESOURCES CODE.
3. ACCEPT THE JOINT BID MADE BY SEAHAWK OIL INTERNATIONAL AND CASEX CO., AND AUTHORIZE THE ISSUANCE OF AN OIL AND GAS LEASE TO THE AFORESAID BIDDER FOR APPROXIMATELY 175.52 ACRES OF TIDE AND SUBMERGED LANDS DESIGNATED AS W.O. 40135 - PARCEL 3 IN SOLANO COUNTY, AS DETAILED IN THE NOTICE OF INTENTION PUBLISHED DECEMBER 11 and 18, 1980. THE NET PROFITS ROYALTY RATE IN CONSIDERATION OF THE ISSUANCE OF THE LEASE IS TO BE 79.50%, AS OFFERED IN THE BID.

EXHIBIT "A"
STATE LANDS COMMISSION

N 40135
OIL & GAS LEASE
SOLANO COUNTY
PROJECT LOCATION MAP

APRIL 1981

RAK



STATE LANDS COMMISSION

EXHIBIT "B"

KENNETH CORY, Controller
 MIKE CURR, Lieutenant Governor
~~XXXXXXXXXXXX~~ Director of Finance
 MARY ANN GRAVES



EXECUTIVE OFFICE
 1807 - 13th Street
 Sacramento, California 95814

WILLIAM F. NORTHRUP
 Executive Officer

EIR ND 257

File Ref.: W 40135

NEGATIVE DECLARATION

Project Applicant: McCulloch Oil and Gas Corporation
 10880 Wilshire Boulevard
 Los Angeles, CA 90024

Project Location: State Lands Located Within the Bed of Lindsey
 Slough, Solano County

Project Description: To explore for and, if a discovery is made,
 produce natural gas from under the State lands.

This NEGATIVE DECLARATION is prepared pursuant to the requirements of the California Environmental Quality Act (Section 21000 et. seq. of the Public Resources Code), the State EIR Guidelines (Section 15000 et. seq., Title 14, of the California Administrative Code), and the State Lands Commission regulations (Section 2902 et. seq. of California Administrative Code).

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

- the project will not have a significant effect on the environment.
- the attached mitigation measures will avoid potentially significant effects.

Contact Person: Ted Fukushima (916) 322-7813
 State Lands Commission
 1807-13th Street
 Sacramento, CA 95814

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Form 13.17 (10/79)

MAILING LIST FOR MEMO WITH INITIAL STUDY:

Department of Fish and Game
Attn.: Mr. Don Lollock
Environmental Services
1416 Ninth Street, 12th Floor
Sacramento, CA 95814

Division of Oil and Gas
Attn.: Mr. M.G. Mefferd
State Oil and Gas Supervisor
1416 Ninth Street, Room 1316
Sacramento, CA 95814

Solid Waste Management Board
Attn.: Mr. Albert A. Marino
Executive Officer
825 "K" Street, Suite 300
Sacramento, CA 95814

Mel Schwartz
Reclamation Board
1416 Ninth Street, RM 204-5
Sacramento, CA 95814

W. Don Maughan, Chairman
California State Water
Resources Control Board
P.O. Box 100
Sacramento, CA 95801

Greg Vaughn
Regional Water Quality Control Board
3201 "S" Street
Sacramento, CA 95816

W 40135
w111
w11b

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MAILING LIST FOR LETTER WITH INITIAL STUDY:

Air Pollution Control District
Yolo/Solano County
P.O. Box 1006
Woodland, CA 95695

Clayne E. Munk
Solano County Planning Department
Court House
Fairfield, CA 94533

District Engineer
U.S. Army Engineer Dist., San Francisco
211 Main St.
San Francisco, CA 94105

U.S. Fish & Wildlife Service
2800 Cottage Way
Sacramento, CA 95825

Mr. Jack R. Andrews
McCulloch Oil and Gas Corporation
10880 Wilshire Blvd.
Los Angeles, CA 90024

Mr. B.J. Skeels, Operations Manager
Amerada-Hess Corporation
P.O. Box 417
Rio Vista, CA 94571

Mr. Al Marques
Aminoil USA, Inc.
P.C. Box 88
Huntington Beach, CA 92648

Mr. M. James Walker
ARCO Oil and Gas Company
P.O. Box 147
Eakersfield, CA 93302

W 40135
wlik
wlyb

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Responses to comments on the Initial Study previously circulated:

1. ref. letter - Dept. of Army, Corps of Engineers - November 6, 1979. No drilling will be conducted in Lindsey Slough or on the adjacent levees or within 10' of the landward toe of the levees.
2. ref. memo - The Reclamation Board, Dept. of Water Resources - October 10, 1979. Answer as above.
3. ref. letter - Yolo - Solano Air Pollution Control District - October 17, 1979. The prospective lessees are hereby advised that the Yolo - Solano APCD requires a Permit to operate for a producing well.

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DATE	NOV 13 1979
1 DJE	✓
CPE	
2 ADW	A
RCP	
3 RK	✓
4 JIF	JV
Enc.	
FILE:	40135

Memorandum

Date: NOV 7 1979

In Reply Refer
To: L20/KH
916/322-4512

To : D. J. Everitts, Chief
Division of Energy and
Mineral Resources
State Lands Commission
100 Ocean Gate, Suite 300
Long Beach, CA 90802

From: STATE WATER RESOURCES CONTROL BOARD
Division of Planning and Research
P. O. Box 100, Sacramento, California 95801

Subject: Competitive Bid Oil and Gas Lease on a Portion of Lindsey Slough

Thank you for the opportunity to review your initial study for the subject project.

The State Water Resources Control Board and the California Regional Water Quality Control Board, Central Valley Region, have reviewed the study. From the data presented, it appears that a negative declaration will provide adequate environmental documentation for water related issues.

Please contact John Huddleson at 916/322-9670 if you need any further assistance.


Mel Holland
Assistant Division Chief

cc: California Regional Water Quality Control
Board, Central Valley Region
3201 S Street
Sacramento, CA 95816

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DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
650 CAPITOL MALL
SACRAMENTO, CALIFORNIA 95814

REPLY TO
ATTENTION OF

SPKED-W .

Mr. D. J. Everitts
Chief, Division of Energy
and Mineral Resources
State Lands Commission
100 Oceangate, Suite 300
Long Beach, California 90802

DATE	NOV 13 1979
1	DJE
	CFE
2	ADP
	ECF
3	RR PAK
4	JTF
Enc.	
FILE:	W40135

6 November 1979

Dear Mr. Everitts:

This is in response to your letter of 10 October 1979 requesting comments on the nomination for a competitive bid oil and gas lease on a portion of Lindsey Slough in Solano County. Unfortunately, we in the Sacramento District, who are responsible for the area under consideration, received the letter via the Corps' San Francisco District, leaving little time before the requested submittal date for comments of 1 November 1979. Consequently, this submittal date was extended by telephone conversation of 30 October 1979 between Mr. Mark Capik of our staff and Mr. Al Willard of yours. We regret the inconvenience and appreciate the extra time. Our comments are as follows.

As required by Section 10 of the River and Harbor Act of 3 March 1899, which prohibits the unauthorized obstruction or alteration of any navigable water in the United States, a Department of the Army permit will be required from this office for any work done below mean high tide elevation for the reach in question on Lindsey Slough. Also, in accordance with Section 404 of the Clean Water Act (33 USC 1344), a Department of the Army permit would be required if any dredged or fill material is placed below the mean high tide elevation in Lindsey Slough or adjacent wetlands. For additional information on our permit program, you may contact Mr. Art Champ of our Operations Branch at telephone (916) 440-2842.

Finally, in conjunction with the Corps' Sacramento-San Joaquin Delta Investigation, and as a part of the State's Delta Master Recreation Plan, Lindsey Slough has been designated as a significant natural

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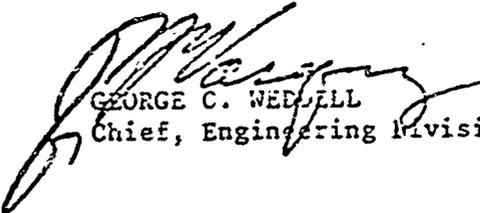
SPKED-W
Mr. J. J. Everitts

6 November 1979

resource and scenic area. Because of the particular resources identified in the Lindsey Slough area, we believe that measures should be taken to insure the protection of these values.

We appreciate the opportunity to comment on this issue and will be glad to provide further assistance if it is needed.

Sincerely,


GEORGE C. WEDDELL
Chief, Engineering Division

AMERADA HESS CORPORATION

BOX 417
RIO VISTA, CALIFORNIA 94571
707-374-6461

October 29, 1979

Mr. D. J. Everitts
State of California
State Lands Commission
100 Ocean Gate, Suite 300
Long Beach, CA 90802

DATE	10/29/79
DJE	<input checked="" type="checkbox"/>
CFE	<input type="checkbox"/>
REP	3 BK RK
YJP	<input type="checkbox"/>
Enc.	
FILE:	U. 12. 5

Dear Mr. Everitts:

In regards to your file reference #W40135, Initial Study for Competitive Bid Oil and Gas Lease, Lindsey Slough, Solano County, we have reviewed the Initial Study and have no problems or comments to add.

We would appreciate a copy of the bid package as soon as it becomes available. Thank you.

Brian J. Skeels

Brian J. Skeels
Operations Manager

Gael H. Troughton

Gael H. Troughton
Senior Geologist

GHT:sam

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McCulloch Oil and Gas Corporation



October 30, 1979

Mr. Al Willard
State Lands Commission
100 Ocean Gate
Suite 300
Long Beach, California 90802

DATE	10/31/79
DJE	
CFE	
JABT	/
RJP	
EIP	
S	OK
Enc.	4 JTF JTE
FILE:	112

Re: Lindsey Slough Prospect
DB 77/78-10
Your Ref: W 40135
Solano County, California

Dear Mr. Willard:

In response to your letter of October 10, 1979 concerning the Initial Study for competitive bid on a portion of the Lindsey Slough in Solano County, California, this is to advise that McCulloch has no additions or comments regarding this study. We feel that you have thoroughly covered the matter in your study.

Very truly yours,

Jack R. Andrews, Manager
Lease Acquisition & Records Dept.

JRA:vk

Memorandum

To : Al Willard
 Division of Energy and
 Mineral Resources
 State Lands Commission
 100 Ocean Gate, Suite 300
 Long Beach, CA 90802

DJE	
CFE	
ADW	A
RCP	
RK	RK
MII	W
Enc.	4016 4015
FILE:	W 40167 & W 40135

Date: October 25, 1979

- make copy for file

Bob Sloman
 Bob Sloman (212-2000)
 From : STATE SOLID WASTE MANAGEMENT BOARD

Subject: Oil Leases for W 40167 (Molino - Santa Barbara Co.) and W 40135 (Solano Co.)

We have reviewed these projects and have no comments. Thank you for the opportunity to review these applications.

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Memorandum

To : D. J. Everitts, Chief
Division of Energy and
Mineral Resources
State Lands Commission
100 Oceanside, Suite 300
Long Beach, CA 90802

Attention: Al Willard

From : THE RECLAMATION BOARD
Department of Water Resources

Date : OCT 24 1979

File No.:

Subject: Initial Study for
Competitive Bid Oil and Gas
Lease - Lindsey Slough, Solano
County

We have reviewed the subject Initial Study and offer the following comments:

The prospective oil and gas lease on a portion of Lindsey Slough is within or adjacent to the Lindsey Slough project levees which are under the jurisdiction of The Reclamation Board. Therefore, the lessee will require the prior approval of The Reclamation Board before starting any work on the site.

Please advise all potential lessees that they can contact Mr. Ted Allen, Floodway Permit Section, Department of Water Resources, Room 335-10, 1416 Ninth Street, Sacramento, CA 95814, telephone (916) 445-9225, for applications and information.

No drilling is to be done within the levee section, and prior to any exploratory drilling on or adjacent to the levees, the Department of Water Resources must be contacted. The Department contact person is Mr. Russ Franson, Central District, Department of Water Resources, 3251 S Street, Sacramento, CA 95816, telephone (916) 445-8458.

Thank you for furnishing this Initial Study for review.

Eldon E. Rinehart
ELDON E. RINEHART
General Manager
8-485-9454

DATE	OCT 29 1979
DJE	<input checked="" type="checkbox"/>
CSE	<input type="checkbox"/>
EADW	<input checked="" type="checkbox"/>
EGP	<input type="checkbox"/>
SCFF	<input type="checkbox"/>
Enc. SJT	<input checked="" type="checkbox"/>
FILE:	17 5 15 5

* *W. H. ...*

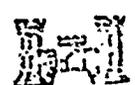
MINUTE PAGE	23/4
	95.0

1 D.E. ✓
2 C.F.F. ✓
3 A.W. ✓
R.G.P.
3 R.L. ✓
1.7.71 J.P. 18 October 1971
Enc.
FILE: W40135

Dear Mr. Everitts

This office has forwarded your letter File Ref. W40135 to our office in Sacramento for there answer to you as the area of concern is in there area of responsibility.

TRULY YOURS
Hans J. Lamm

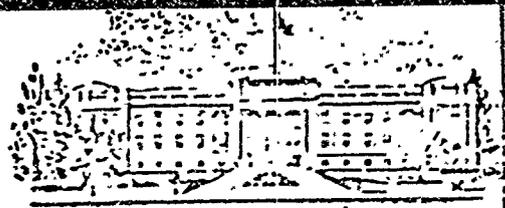


U.S. ARMY ENGINEER DISTRICT
SAN FRANCISCO
CORPS OF ENGINEERS

HANS J. LAMM
CHIEF, ENFORCEMENT SECTION

211 MAIN STREET
SAN FRANCISCO, CALIF. 94102 TEL. (415) 806-5900

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James A. Koslow
 Air Pollution Control Officer
 Telephone 666-8433

DJE	✓
CFF	
2 ADW	✓
SGP	
3 RK	
4 JIF	✓
Enc.	
FILE:	W41135

YOLO-SOLANO
 AIR POLLUTION CONTROL
 DISTRICT

P.O. BOX 1006
 WOODLAND, CALIF. 95695

October 17, 1979

Mr. D. J. Everitts, Chief
 Division of Energy and Mineral Resources
 State Lands Commission
 100 Oceangate, Suite 300
 Long Beach, CA 90802

Dear Mr. Everitts:

This letter is in response to your letter dated October 10, 1979 concerning a Negative Declaration covering an oil and gas lease on a portion of Lindsey Slough in Solano County.

It is the District's opinion that the emissions from the development of these lands into natural gas producing wells would not contribute significantly to air pollution levels. The District would like to be informed when operations begin, particularly as to use of combustion engines for the operation, and when operations are closed.

However, the bidders should be notified that the Yolo-Solano APCD does require an evaluation as to the need for a Permit to Operate for a producing well.

If you have any questions please contact the District Engineer, Mr. Carroll Robertson.

Sincerely,

Tom Armstrong
 Air Pollution Control Inspector

TA:ra

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STATE OF CALIFORNIA
STATE LANDS COMMISSION

Initial Study for the Issuance of Competitive Bid Sub-surface Oil and Gas Leases Covering a Portion of Lindsey Slough in Solano County and a Plan to Control Subsidence and Pollution.

1. PROJECT AND ITS LOCATION:

The State has received a nomination for a competitive bid subsurface oil and gas lease in Solano County on all of the tide and submerged land lying within the bed of Lindsey Slough in Sections 20, 21, 22, 23, 25, 26, and 27, T. 5N., R. 2E., and Section 30, T. 5N., R. 3E., MDB&M, and bounded on the east by the westerly line of Cache Slough Extended and on the west by the easterly line of Hastings Cut Extended. The slough will be divided into three (3) parcels each of which will be leased separately. They are described in exhibit "A". Parcel No. 1 contains 86.27 acres, parcel No. 2, 152.22 acres, and parcel No. 3, 175.52 acres. Division of Lindsey Slough into three parcels is being considered because there are four different lease-holders whose leases border the slough; three on the south and one on the north. There are two lease-holders bordering each parcel; therefore competitive bidding is required. Upon issuance of leases for the above-described lands subsequent drilling may be undertaken in an effort to determine if economically producible volumes of gas are present beneath the State lands. Exhibits "A", "B" and "C" are included for visual clarification and definition of the area of the proposed project.

2. STATEMENT OF OBJECTIVES SOUGHT BY THE PROPOSED PROJECT:

The objective of this proposed project is to explore for and develop natural gas beneath State lands as described above.

3. GENERAL DESCRIPTION OF THE PROJECT:

In short the project is the issuance of oil and gas leases on the subsurface lands of Lindsey Slough. Upon issuance of the leases exploratory drilling and seismic surveys may be initiated on the land adjacent to the slough. Directional drilling under the State lands from adjacent lands could occur. Locations for test wells have not been determined. Following issuance of the leases and appropriate exploration subsequent drilling may be undertaken to produce volumes of gas that may or may not be present beneath State lands.

4. a) DESCRIPTION OF THE ENVIRONMENTAL SETTING:

The existing physical environmental in the vicinity of the nominated parcel (Lindsey Slough in toto) is that of a rural agriculture area. The area is essentially level with an elevation that is at or very near sea level.

Lindsey Slough itself is fed by Barker Slough, Calhoun Cut and Hastings Cut. From Hastings Cut Lindsey Slough drainage is generally slightly south of east until it joins with Wright Cut and Cache Slough. The levees bordering Lindsey Slough are 12 to 25 feet above the surrounding land. The slough contains more than a dozen islands. These islands are marshy in nature with the majority of berms being below the mean high water mark; therefore they are considered a portion of the slough bed. Marshy lands also exist just South of the Slough in Section 26, T. 5N., R. 2E.

This marsh is encompassed by an intermittent unnamed Oxbow lake on three sides and Lindsey Slough levee on the North. No levee exists on the extreme

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Southwest edge of the Slough; this area is primarily an intermittent lake into which "The Big Ditch" empties. Roads in the vicinity of Lindsey Slough are generally private or unimproved dirt transecting the various properties on either side of the slough. These roads also run along the tops of most of the levee. A medium duty road extends along the eastern segment of the southern levee. This road is part of a route that parallels the western bank of the Sacramento River and Cache Slough. The road exits the Lindsey Slough area to the south about three quarters (3/4) of a mile west of where it enters the Lindsey Slough levee. The land to the north of the Slough, the Hastings Tract, is dotted with several small groupings of residential dwellings. About one-half mile north of the approximate center of the slough is a private airstrip running almost E-W just west of a N-S running road. Near the intersection of this road and the slough is an airway beacon.

In the Hastings Tract lying between Lindsey Slough, Cache Slough and Hastings Cut are 16 abandoned gas wells and two (2) producing gas wells as of August, 1979. Within approximately two miles of the southern edge of Lindsey Slough are no less than 23 producing gas wells and 20 abandoned gas wells.

5. ENVIRONMENTAL IMPACT OF THE PROPOSED PROJECT:

The only long-term environmental impact of the proposed project will be the production of natural gas if gas is discovered, that otherwise might not be produced at all. Thus one beneficial effect of this proposal might be to provide much-needed natural gas to meet the energy requirements of the State. Short-term environmental impacts are probably of more concern than long-term impacts. This is because most probably the life expectancy of producing gas wells would be 10 - 20 years. Short-term environmental impacts have two possible scenarios. The first case would be drilling and possible redrilling of exploratory wells which failed to

find producible gas accumulation. The second case would be the discovery of a commercial gas pool by exploration drilling. In case one, the environmental impacts would have a relatively short duration and would depend on the number of exploration wells drilled next to the approximately four (4) mile length of the slough. Individual well drilling time would probably range from 30 to 60 days depending on the number of redrills from the original well. Environmental impacts would consist of the following:

- A). A moderate increase in traffic on the various roads transiting the area around Lindsey Slough resulting from the transport of equipment, crew personnel and drilling material. The individual rates would be contingent on the drill site selection.
- B). A local increase in noise level above that of normal farm equipment operation to a level of about 70 decibels at 1000 feet from any of the possible drillsites. The effect on housing in the area will be dependent on the location of the wells. Since the levees meander with the slough the chances are good that sound will be somewhat attenuated if any drilling is attempted in close proximity to the slough or the associated levees.
- C). A minor amount of temporary air pollution from the operation of diesel engines that supply power for the drilling activity. This pollution is approximate to that contributed by several diesel-powered heavy duty trucks.

In case two, above, the environmental impacts will be the same as for case one (A, B, and C, above), except that their duration may extend, intermittently, over a longer period of time, depending on how long exploration and possible production takes. Environmental impact would be intermittent, that

is to say impacts would occur as wells were drilled and possibly produced. Drilling operations in the area are expected to yield natural gas only. Pollution potential in a natural gas field is minimal. Subsidence, however, is another consideration if gas is found and produced, but withdrawal of gas generally has an insignificant effect on subsidence because:

- 1). the gas sands are generally thin, ranging from 10 to 50 feet in thickness, and can only compact a small amount.
- 2). the sands are relatively competent and resist compaction.
- 3). the water drive generally fills the sand interstices as the gas is withdrawn.
- 4). water is not extracted with the gas.
- 5). the volume of gas withdrawn is very small relative to the column of rock involved.

6. ADVERSE ENVIRONMENTAL IMPACTS THAT CANNOT BE AVOIDED IF THE PROJECT IS IMPLEMENTED:

The short-term impacts cited in Item 5, although of minor adverse character, cannot be avoided if this project is implemented to the fullest degree; that is, leasing, exploration and subsequent production.

7. MITIGATING MEASURES PROPOSED TO MINIMIZE IMPACTS:

The drilling of wells will be conducted in strict accordance with the regulations of the State Lands Commission and the State Division of Oil and Gas. Surface casing will be set as prescribed by the regulations to protect the ground water, and approved blowout prevention equipment will be used during drilling operations. Drilling fluids and drill cuttings will be sumped or tanked to a public licensed disposal site and subsequently the site(s) will be cleaned up and restored as nearly as practicable to its former condition.

If a producible gas accumulation is discovered, the gas will be moved from the drillsite(s) by pipeline(s) and there will be no venting or release of gas to the atmosphere during the production phase. No conflict is anticipated with the local residences or the airway beacon or the private airfield in the local vicinity. Suitable measures will be taken in the event any problems develop with the above mentioned locations.

The Lindsey Slough is protected from possible drillsites by its associated levee which stands 12 to 25 feet above the ground level. Drillsites that might be drilled in the area to the SW of Lindsey Slough, where no levee is located, must have appropriate plans for suspension of all drilling and production operations, except those that are corrective, protective, or mitigative, immediately in the event of any disaster or contamination or pollution resulting from operations. Drillsite(s) which are located such as to be separated from Lindsey Slough by the levee shall be constrained by the above-mentioned requirements also. In the event of contamination or pollution, such drilling and production operations shall not be resumed until adequate corrective measures have been taken and authorization for resumption of operations has been made by the State Lands Commission. Corrective measures shall be taken immediately whenever pollution has occurred. Residuary products of oil, drilling fluid, sanitary wastes and other refuse shall be disposed of in approved dumping areas. None of these products will be permitted to enter Lindsey Slough or any other slough, cut or marsh land connected therewith. The lessee(s) will be required to comply with the Commission's applicable procedures for Drilling and Production Operations on tide and submerged lands. The drilling procedures contain detailed engineering requirements on well programming, blowout prevention equipment, testing procedures, drilling

procedures, and supervision and training as related to the safety aspects of drilling. The production procedures cover well completion, remedial and well-maintenance work, subsurface injection projects, waste disposal, safety equipment procedures related to production facility operations and the operation and maintenance of pipelines. It is the responsibility of the Division of Oil and Gas and the State Lands Commission to see that the procedures are followed, and that a system of inspections and reports are required to insure that this is being done.

Certain operations performed in drilling and production work are considered critical with respect to well control, fire, explosion, oil spills, and other discharge or emissions. The critical operations may occur during drilling, well completion and recompletion, well maintenance and stimulation, wireline servicing, facility maintenance and construction. The lessee(s) will be required to submit and have approved by the State Lands Commission a Critical Operations and Curtailment Plan, setting forth critical well operations which will be curtailed when adverse conditions exist.

Even though the chances of discovering oil are slight, the lessee(s) will be required to maintain a current oil-spill contingency plan for initiating corrective action to control and recover oil spilled on any waters or land. The plan will cover both minor and major oil spills associated with lease operations. An integral part of the required contingency plan will be the availability of the services of Clean Bay, Inc., a nonprofit organization formed by the oil industry in the San Francisco area to combat oil spills by preventative and cleanup equipment. This equipment is located in Concord and Martinez, and available for quick response under emergency conditions.

The lessee(s), upon discovery of natural gas or oil, will be required to determine a recent subsidence rate before volumes of gas are produced from the

lease(s). This will be accomplished by precision level surveys of bench marks in the area that are part of the U. S. Coast and Geodetic Survey first order survey network.

The lessee(s) will be also required to establish bench marks in the area to effectively monitor subsidence which will be tied by precise leveling into the control network. Such bench marks set by the lessee(s) shall be surveyed each year and the control network surveyed every two years.

If a sufficient number of drillsites and resultant bench marks are located, a minimum of three (preferably one on each side of the lease area(s)) will be surveyed for horizontal as well as vertical control. Since it was established that during subsidence (due to the removal of subsurface elements) bench marks will move toward the center or toward the area of deepest subsidence, such procedure could serve to effectively detect areal subsidence.

After discovery, a well may be drilled and programmed to include a "casing joint survey". A "casing joint survey" is a procedure in which a magnetic tool is lowered into the well and, as it is withdrawn, records the magnetic density of the casing. Lengths of casing can be accurately determined by such techniques and comparisons with later surveys or "runs" may indicate casing deformation, a possible result of subsidence. While a casing joint survey may not reveal a total subsidence rate, it will permit the operator to determine if casings opposite the producing sands are undergoing deformation. These surveys would run about every two years as part of the subsidence monitoring procedure.

Many gas sands in the delta region are repressured with a partial or full waterdrive mechanism. If the reservoir has a natural water-drive, then water encroachment or replacement as the reservoir is depleted of gas would sustain formation pressures. This condition could negate any subsidence attributed to gas production.

8. ALTERNATIVES TO THE PROPOSED ACTION:

The proposed action is the eventual issuance of an oil and gas lease(s) by the State Lands Commission to the highest bidder(s) to facilitate the exploration and development of possible natural gas resources on the parcels (segments of Lindsey Slough) concerned. The only alternative to this action would be for the Commission to not issue the lease(s). This could result in a failure to evaluate a potential source of new natural gas reserves which are sorely needed to supply California's energy requirements.

9. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY.

The proposed project as outlined above should have no cumulative or long-term adverse effects. The proposal will neither enhance the state of the physical environment nor will it reduce it over the long term.

It may add to the supply of a clean-burning energy source for a period of 10 to 20 years at the expense of minor local adverse impacts over a period of 12-18 months. The incremental costs and benefits are small in either case, and of quite short duration. At the conclusion of the project there will be no residual impact on man's environment.

10. IRREVERSIBLE ENVIRONMENTAL CHANGES THAT WOULD BE INVOLVED IF THE PROPOSED ACTION SHOULD BE IMPLEMENTED:

There will be no irretrievable commitment of resources other than production and use of the natural gas. As indicated above, without issuance of the lease(s) in question it may not be possible for the applicant(s) to continue the exploratory program and the potential gas resource will remain unevaluated.

11. GROWTH-IMPACTING EFFECT OF THE PROPOSED ACTION:

Because no new permanent employees will move into the area as a result of this temporary work, and because any new facilities (i.e., pipelines, wellhead

assemblies, etc.) will not require permanent attendees, there would be no growth-inducing impact from this project.

12. WATER USE

The source of the water used in drilling operation will probably be from a water well in the area purchased from one of the local property owners.

13. ECONOMIC AND SOCIAL FACTORS:

As indicated above, there will be no growth-inducing impact from this project. If a discovery is made, then a modest increment of additional clean-burning energy source will be available to fuel the State's economy, and the State will derive a royalty income from the lease(s) in question. The overall social impact will be negligible.

14. PERSONS AND AGENCIES CONTACTED:

California Department of Fish and Game

California Department of Conservation, Division of Oil and Gas

California Solid Waste Management Board

The Reclamation Board

California State Water Resources Control Board

Regional Water Quality Control Board

APCD - Yolo/Solano Counties

Solano County Planning Department

U. S. Army Corps of Engineers

U. S. Fish and Wildlife Service

McCulloch Oil Corp.

Amerasia

Aminoll, U.S.A., Inc.

O.P.R. - Clearinghouse - Attn.: Laurie Wright

ARCO

EXHIBIT "A"

LAND DESCRIPTION

W 40135

Three parcels of tide and submerged land lying within the bed of Lindsey Slough, situated in T5N, R2E, and T5N, R3E, MDM, County of Solano, State of California, and more particularly described as follows:

PARCEL 1

All the tide and submerged land lying within the bed of Lindsey Slough, situated in Sections 20, 21 and 22, T5N, R2E, MDM, being bounded on the west by the southerly extension of the easterly line of Hastings Cut, and bounded on the east by the northerly extension of the west line of the east half of the west half of Section 27, T5N, R2E, MDM.

PARCEL 2

All the tide and submerged land lying within the bed of Lindsey Slough, situated in Sections 22, 23, 26 and 27, T5N, R2E, MDM, being bounded on the west by the northerly extension of the west line of the east half of the west half of Section 27, and bounded on the east by the northerly prolongation of the easterly line of the parcel of land described in the assignment of oil and gas lease from Humble Oil and Refining Company to Richfield Oil Corporation, recorded November 15, 1960, in Book 1052 of Official Records, page 599, Instrument No. 22390.

PARCEL 3

All the tide and submerged land lying within the bed of Lindsey Slough, situated in Sections 25 and 26, T5N, R2E, MDM and Section 30, T5N, R3E, MDM, being bounded on the west by the northerly prolongation of the easterly line of the parcel of land described in the assignment of oil and gas lease from Humble Oil and Refining Company to Richfield Oil Corporation, recorded November 15, 1960, in Book 1052 of Official Records, page 599, Instrument No. 22390, and bounded on the east by the southerly extension of the westerly line of Cache Slough.

Excepting therefrom any portion lying landward of the ordinary high water mark of Lindsey Slough.

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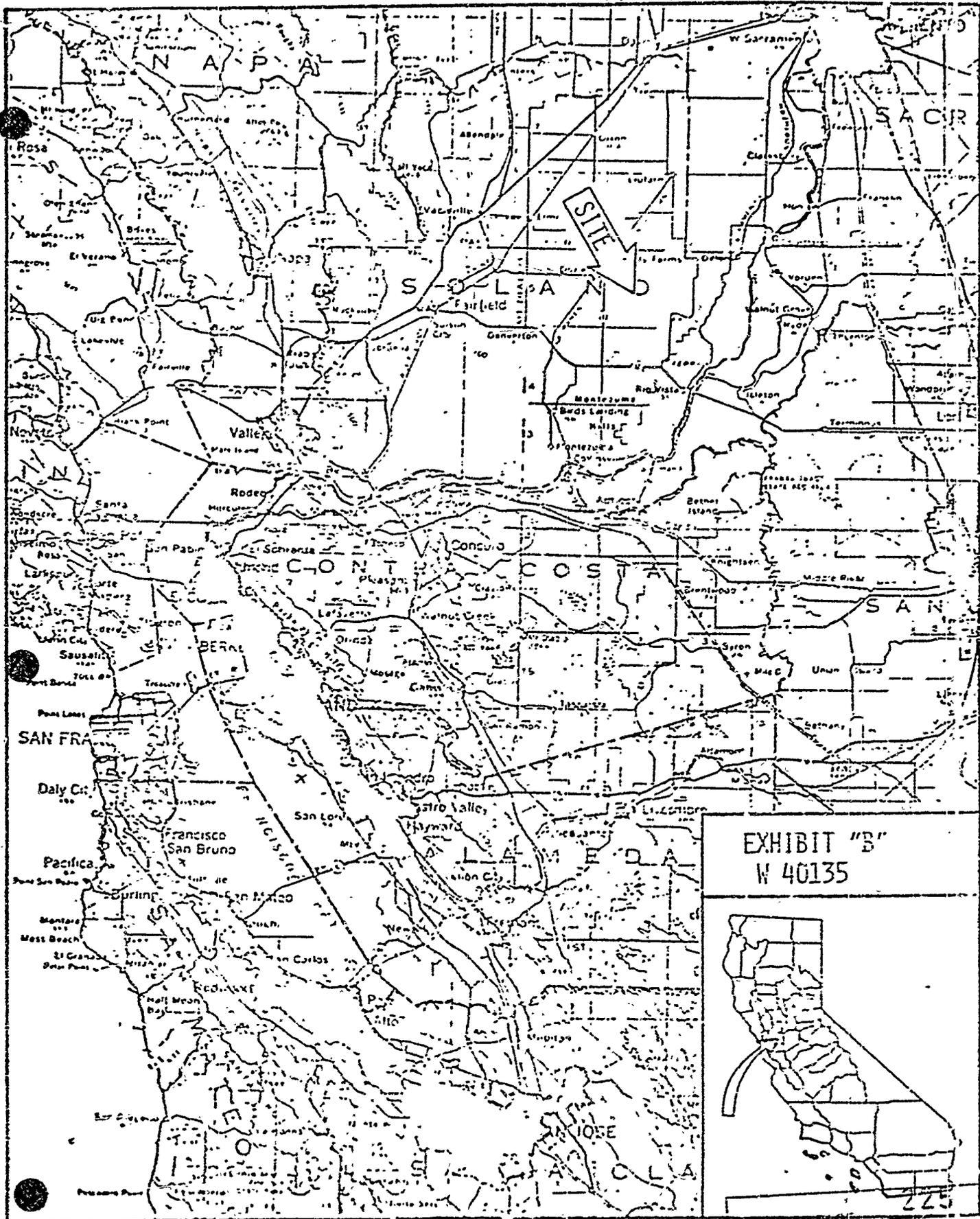


EXHIBIT "B"
W 40135



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EXHIBIT "C"
STATE LANDS COMMISSION

W 40135

PROJECT LOCATION MAP

August 1979

JTF

