

MINUTE ITEM

This Calendar Item No. 28
was approved as Minute Item
No. 28 by the State Lands
Commission by a vote of 5
to 0 at its 7/23/82
meeting.

CALENDAR ITEM

28

6/29/82
W 9771
Graber
PRC 6189

NEGOTIATED SUBSURFACE OIL AND GAS LEASE

APPLICANT: Chevron U.S.A., Inc.
P. O. Box 7643
San Francisco, California 94120

AREA, TYPE LAND AND LOCATION:
955 acres of upland in the southern portion
of the Joice Island Wildlife Refuge and
of tide and submerged land in the adjoining
beds of Suisun and Montezuma Sloughs and
Hunter Cut.

PERTINENT INFORMATION:

1. P.R.C. Section 6815(b) provides that the Commission may negotiate and enter into leases for the development of State lands through drilling from adjoining lands only where the competitive bid provisions of P.R.C. Section 6827 are impracticable by reason of among other things the property's inaccessibility from surface drill sites reasonably available or obtainable.

No drillsites are available in the sloughs. The Department of Fish and Game was advised of the proposed project and responded that drillsites should not be located in the Wildlife Refuge. The applicant has under lease adjoining lands on which drillsites are available (see Exhibit "A").

A 4

S 4

(Revised 7/14/82)

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2. For these reasons, a Negotiated Oil and Gas Lease is appropriate. Under the proposed Negotiated Oil and Gas Lease, the applicant plans to drill from private lands and to bottom under State lands.

As consideration for the lease, the applicant agrees to pay in money to the State, annually in advance, a rental of \$15 per acre, and 33 1/3 percent flat rate royalty on total production of all oil and gas produced from State-owned lands, as specified on the lease on file in the office of the State Lands Commission. Applicant also agrees to pay the State five percent of the value of all oil or gas produced by wells drilled through the parcel into adjacent lands.

3. Pursuant to P.R.C. 6854, the Commission is authorized to lease lands under the jurisdiction of other State agencies. The agencies' consent is not required where the drill sites are not on the surface of the agencies' property. Formal consent of Fish and Game is not required because drillsites will not be located on its lands. Nevertheless, the Department is aware of the leasing operations and approves of them.

PREREQUISITE ITEMS:

In accordance with P.R.C. Section 6873.2, "Notice of Public Hearing with respect to the policies of the State Lands Commission, relating to the leasing of State-owned tide and submerged lands in the Joice Island Area and Suisun and Montezuma Sloughs and Hunter Cut, Solano County, California, for oil and gas extraction" was published on April 21 and 24, 1981. The hearing was held on June 19, 1981 in the Fairfield City Council Chambers, 1000 Webster Street, Fairfield, California. Comments regarding proper operation and maintenance of any future production equipment were received and addressed at the hearing.

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In accordance with P.R.C. Section 6818, the Director of Parks and Recreation was notified of the proposed lease and has determined the project will not interfere with recreational use of the littoral lands.

The project, as proposed, is consistent with the policies of the Suisun Marsh Protection Plan as required by P.R.C. 29000 et seq.

The proposed lease has been reviewed by staff counsel who have advised that the proposed negotiated lease will comply with the applicable provisions of the law and regulations of the Commission.

The proposed lease was reviewed by the Attorney General, in accordance with P.R.C. Section 6818, who has advised that the proposed lease complies with applicable provisions of law and regulations of the Commission.

ENVIRONMENTAL IMPACT:

A Negative Declaration (ND 289) was prepared by the Commission's staff pursuant to CEQA and implementing regulations.

This project is situated on uplands within the Joice Island Game Refuge and tide and submerged lands within the beds of Suisun and Montezuma Sloughs and Hunter Cut, all of which have been identified as possessing significant environmental values pursuant to P.R.C. 6370.1, and are classified in use category Class "C" which authorizes Multiple Use.

Staff has coordinated this project with those agencies and organizations who nominated the site as containing significant environmental values, and inasmuch as this lease involves subsurface extraction of hydrocarbons from adjacent property, they have found this project to be compatible with their nomination.

AB 884:

N/A.

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EXHIBITS: A. Site Map.
 B. Land Description.
 C. Negative Declaration.

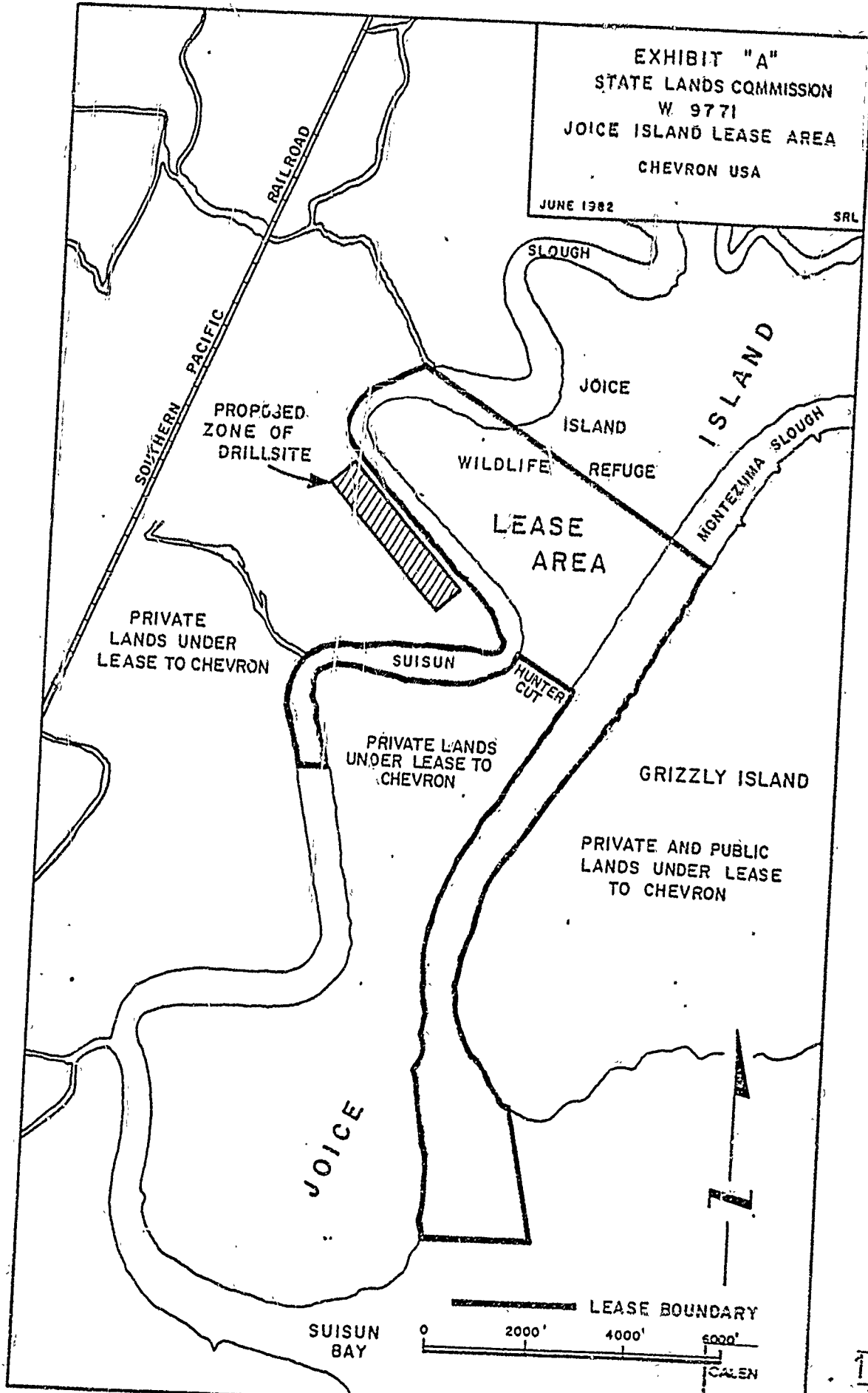
IT IS RECOMMENDED THAT THE COMMISSION:

1. CERTIFY THAT A NEGATIVE DECLARATION (ND 289) WAS PREPARED BY THE STATE LANDS COMMISSION PURSUANT TO THE PROVISIONS OF THE CEQA, AND SUCH DOCUMENT WAS REVIEWED AND CONSIDERED CAL. ADM. CODE 15083 AND 15085.
2. FIND THAT THE PROJECT WILL NOT HAVE A SIGNIFICANT EFFECT UPON THE ENVIRONMENT CAL. ADM. CODE 15083 AND 15085.
3. FIND THAT THE GRANTING OF THE LEASE WILL HAVE NO SIGNIFICANT EFFECT UPON THE ENVIRONMENTAL CHARACTERISTICS IDENTIFIED PURSUANT TO P.R.C. SECTION 6370.1.
4. FIND THAT IN ACCORDANCE WITH P.R.C. SECTION 6815, AS TO THE 955 ACRES OF UPLANDS AND TIDE AND SUBMERGED LANDS, SOLANO COUNTY, THE PROVISIONS OF SECTION 6827 ARE IMPRACTICAL BY REASON OF ITS INACCESSABILITY FROM SURFACE DRILLSITES REASONABLY AVAILABLE OR OBTAINABLE.
5. AUTHORIZE, PURSUANT TO DIV. 6 OF THE P.R.C., THE ISSUANCE OF AN OIL AND GAS LEASE TO CHEVRON U.S.A., INC., OF 955 ACRES OF STATE-OWNED LANDS DESCRIBED IN EXHIBIT "A", ATTACHED AND BY REFERENCE MADE A PART HEREOF; SUCH LEASE IS TO BE ISSUED ON THE TERMS AND CONDITIONS DESCRIBED IN A LEASE FOUND IN FILE W 9771, LOCATED IN THE OFFICES OF THE COMMISSION, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING TERMS: AN ANNUAL RENTAL RATE OF \$15 PER ACRE, A 33 1/3 PERCENT FLAT ROYALTY RATE ON ALL OIL AND GAS PRODUCED FROM STATE LANDS, AND A FIVE PERCENT ROYALTY RATE ON ALL OIL AND GAS PRODUCED BY WELLS DRILLED THROUGH STATE LANDS INTO ADJACENT PRIVATE LANDS WHICH HAVE NOT BEEN INCLUDED IN A POOLING OR UNITIZATION AGREEMENT APPROVED BY THE STATE.

EXHIBIT "A"
STATE LANDS COMMISSION
W. 9771
JOICE ISLAND LEASE AREA
CHEVRON USA

JUNE 1982

SRL



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EXHIBIT "B"

LAND DESCRIPTION

W 9771

All that real property in the County of Solano, State of California, described as follows:

BEGINNING at a point on the ordinary high water mark on the westerly bank of Suisun Slough at the south-east corner of the parcel of land described as Parcel No. 1 in the deed from Solano County Title Company to George Marcantelli, et ux., recorded October 25, 1948, in Book 458 of Official Records at page 97, Instrument No. 11004; thence from said point of beginning, northerly, easterly, northwesterly, northerly, and northeasterly along said ordinary high water mark of Suisun Slough to the intersection thereof with the southwesterly bank of Wells Slough; thence S 58° 26' E, in a direct line, crossing Suisun Slough, Joice Island and Montezuma Slough to the easterly bank of Montezuma Slough at high water mark; thence southerly along the ordinary high water mark of Montezuma Slough to the most northerly corner of State Tide Land Location No. 25; thence southerly along the westerly line of State Tide Land Location No. 25 to the southwest corner thereof; thence west in a direct line to a westerly bank of Grizzly Bay at high water mark; thence northerly along the ordinary high water mark of Grizzly Bay and Montezuma Slough to the most southerly corner of the parcel of land described in the deed from Andrew F. Mahoney, Co. to State of California, dated February 1, 1932, recorded February 17, 1932, in Book 89 of Official Records at page 90, Instrument No. 540; thence northwesterly along the southerly line of said State of California parcel to the easterly bank of Suisun Slough at high water mark; thence southwesterly, westerly, and southerly along the ordinary high water mark of Suisun Slough to a point that bears east from the point of beginning; thence west, in a direct line, to the point of beginning.

END OF DESCRIPTION

REVISED MAY 14, 1982 BY TECHNICAL SERVICES UNIT, ROY MINNICK, SUPERVISOR

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STATE LANDS COMMISSION

1807 13TH STREET
SACRAMENTO, CALIFORNIA 95814

EXHIBIT "C"

 Draft FinalNEGATIVE DECLARATION

EIR ND 289

File Ref.: W 9771

SCH#: 810-2138

Project Title: Joice Island Project. Proposed Oil and Gas Lease.

Project Location: Vicinity of Joice Island in Solano County, lying within the east portion of T.4 N., R.1 W., M.D.M.

Project Description: To explore for and, if commercial quantities are found, develop natural gas reserves under the beds of Suisun and Montezuma Sloughs and Hunter Cut and the Joice Island Wildlife Refuge.

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 2901 et seq, Title 2, of the California Administrative Code).

Based upon the attached Initial Studies, 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 T. Fukushima
State Lands Commission
1807-13th Street
Sacramento, CA 95814
(916) 322-7813

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SUMMARY OF COMMENTS RECEIVED IN
RESPONSE TO NEGATIVE DECLARATION

Department of Fish and Game:

1. Comments: No more than eight drillsites shall be allowed, and production sites shall be limited to one-quarter acre in size.

Response: The project, as proposed, consists of one or more wells with a maximum of eight drillsites to be drilled from private lands to bottom under State Lands, reverting to quarter-acre production pads. The State lease is not large enough to justify a larger number of wells or drillsites.

2. Comment: The Department advises that in case of an accident operations must be suspended until authorization to proceed is given by the State Lands Commission.

Response: The applicant is required by State Lands staff to maintain a Critical Operations and Curtailment Plan. Rules and regulations of the Division of Oil and Gas and State Lands Commission require that the lessee suspend all operations, except those that are corrective, protective or mitigative in the event of an accident until authorization for resumption of drilling is given by the State.

3. Comment: The Department requests that drilling be conducted only between June 1 and October 1 in order to avoid interference with waterfowl habitat.

Response: The San Francisco Bay Conservation and Development Commission will establish the period during drilling must be conducted. State Lands Commission will approve only those drilling programs which are consistent with B.C.D.C. requirements.

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COMMENTS RECEIVED IN
RESPONSE TO NEGATIVE DECALARATION

Comments from San Francisco Bay Conservation and Development Commission

The San Francisco B.C.D.C. supplied comments on gas transportation pipelines. Existing pipelines to be utilized as feasible. Pipeline design must meet Office of Pipeline Safety Operations and other Regulatory Agencies. Pipeline route to avoid marshlands or cause minimum damage to marsh. Wide track construction equipment and construction pads to be used to avoid marsh damage. "Trench and Push" construction to be used. Fish and Game to be consulted regarding construction activities. Solano County Mosquito Abatement Program to be contacted regarding water circulation systems. All gas wells and ancillary facilities will be required to follow safeguards of D.O.G. regulations, minimized damage to wildlife habitats, waste disposal, safeguards to water area loss on the marsh, drilling in dry season. Abandonment to follow Division of Oil and Gas Regulations.

Responses to comments from San Francisco B.C.D.C.

Chevron USA shall comply with the regulations of the San Francisco Bay Plan and the Suisun Marsh Protection Plan and will be required to obtain a marsh development permit as required by PRC Sec. 29500 and 29501 (a). Statutes protecting tide and submerged lands and the Suisun Marsh Protection Plan have been incorporated by reference into the proposed lease form. The applicant has been notified of the need to obtain a permit from B.C.D.C.

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INITIAL STUDY CHECKLIST

Form 13.20 (7/80)

File Ref.: W9771
SCH# 81042133

BACKGROUND INFORMATION

A. Applicant: CHEVRON U.S.A. INC.

B. Checklist Date: 4 / 20 / 81

C. Contact Person: Bradley LeDu (Chevron)
Telephone: (415) 894-0951

D. Purpose: Oiland Gas Lease

E. Location: Joice Island, Solano County

F. Description: _____

G. Persons Contacted: see Exhibit B

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? (2 Acre Fill)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Disruptions, displacements, compaction, or overcovering of the soil?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Change in topography or ground surface relief features?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" 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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B. Air. Will the proposal result in:

Yes Maybe No

- 1. Substantial air emissions or deterioration of ambient air quality?
- 2. The creation of objectionable odors?
- 3. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?

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?
- 2. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?
- 3. Alterations to the course or flow of flood waters?
- 4. Change in the amount of surface water in any water body?
- 5. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?
- 6. Alteration of the direction or rate of flow of ground waters?
- 7. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?
- 8. Substantial reduction in the amount of water otherwise available for public water supplies?
- 9. Exposure of people or property to water-related hazards such as flooding or tidal waves?
- 10. Significant changes in the temperature, flow or chemical content of surface thermal springs?

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)?
- 2. Reduction of the numbers of any unique, rare or endangered species of plants?
- 3. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?
- 4. Reduction in acreage of any agricultural crop?

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)?
- 2. Reduction of the numbers of any unique, rare or endangered species of animals?
- 3. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?
- 4. Deterioration to existing fish or wildlife habitat?

F. Noise. Will the proposal result in:

- 1. Increase in existing noise levels? Temporary Only
- 2. Exposure of people to severe noise levels?

G. Light and Glare. Will the proposal result in:

- 1. The production of new light or glare?

H. Land Use. Will the proposal result in:

- 1. A substantial alteration of the present or planned land use of an area?

I. Natural Resources. Will the proposal result in:

- 1. Increase in the rate of use of any natural resources? If Gas Discovered
- 2. Substantial depletion of any nonrenewable resources? If it will be produced (i.e., used, depleted)

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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? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Possible interference with emergency response plan or an emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
- K. *Population.* Will the proposal result in:
- | | | | |
|---|--------------------------|--------------------------|-------------------------------------|
| 1. The alteration, distribution, density, or growth rate of the human population of the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|
- L. *Housing.* Will the proposal result in:
- | | | | |
|---|--------------------------|--------------------------|-------------------------------------|
| 1. Affecting existing housing, or create a demand for additional housing? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|
- M. *Transportation/Circulation.* Will the proposal result in:
- | | | | |
|---|--------------------------|--------------------------|-------------------------------------|
| 1. Generation of substantial additional vehicular movement? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Affecting existing parking facilities, or create a demand for new parking? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Substantial impact upon existing transportation systems? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Alterations to present patterns of circulation or movement of people and/or goods? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Alterations to waterborne, rail, or air traffic? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
- 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Police protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Schools? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Parks and other recreational facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Maintenance of public facilities, including roads? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Other governmental services? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
- O. *Energy.* Will the proposal result in:
- | | | | |
|---|--------------------------|--------------------------|-------------------------------------|
| 1. Use of substantial amounts of fuel or energy? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Substantial increase in demand upon existing sources of energy, or require the development of new sources? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
- P. *Utilities.* Will the proposal result in a need for new systems, or substantial alterations to the following utilities:
- | | | | |
|--|--------------------------|--------------------------|-------------------------------------|
| 1. Power or natural gas? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Communication systems? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Water? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Sewer or septic tanks? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Storm-water drainage? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Solid waste and disposal? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
- Q. *Human Health.* Will the proposal result in:
- | | | | |
|--|--------------------------|--------------------------|-------------------------------------|
| 1. Creation of any health hazard or potential health hazard (excluding mental health)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Exposure of people to potential health hazards? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
- 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|
- S. *Recreation.* Will the proposal result in:
- | | | | |
|---|--------------------------|--------------------------|-------------------------------------|
| 1. An impact upon the quality or quantity of existing recreational opportunities? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|

Yes Maybe No

T. Cultural Resources.

- 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?

II. DISCUSSION OF ENVIRONMENTAL EVALUATION (See Comments Attached)

IV. DETERMINATION - S.L.C. ONLY -

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: 6.12.81

[Signature]
For the State Lands Commission

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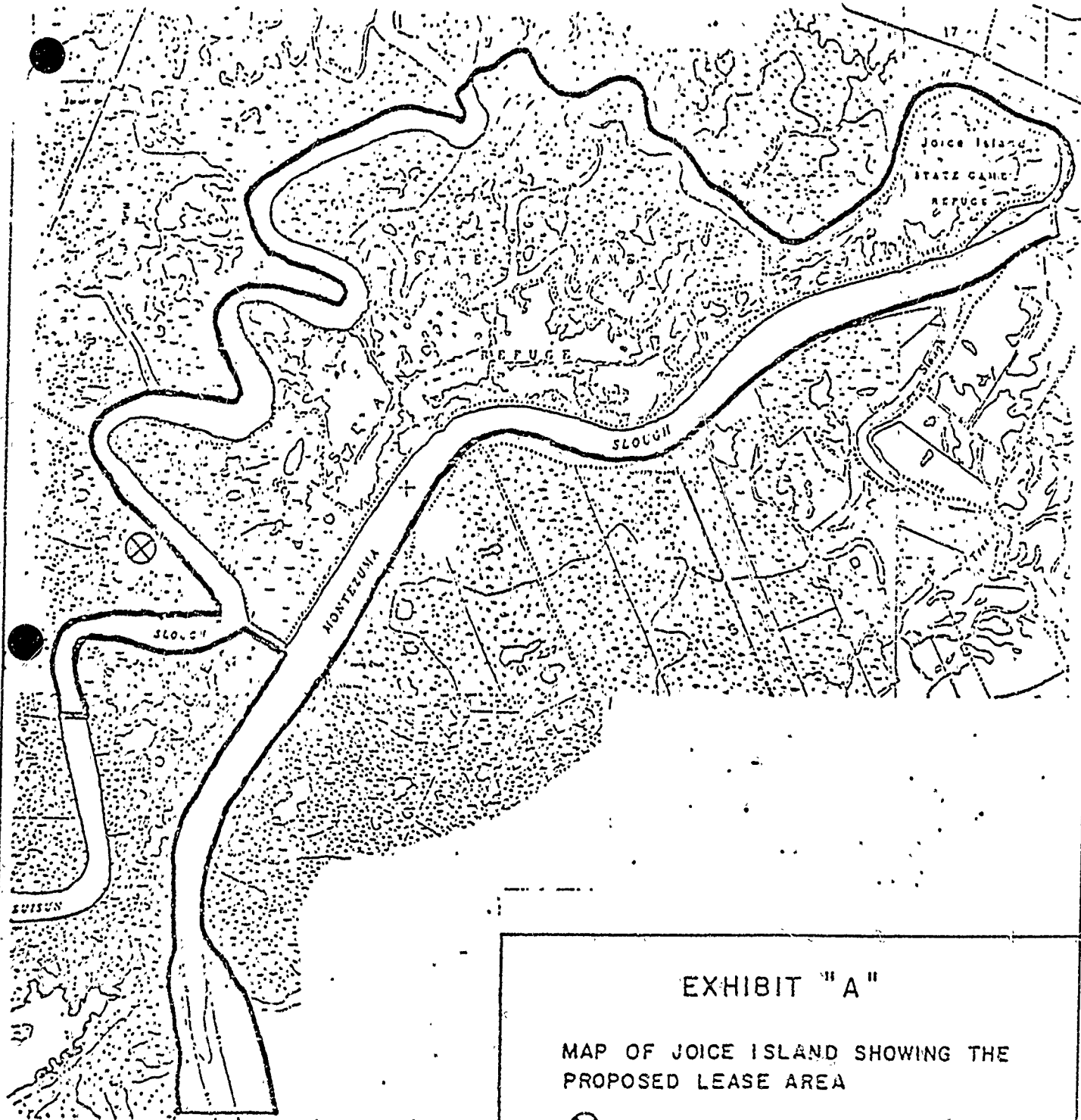
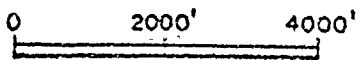


EXHIBIT "A"

MAP OF JOICE ISLAND SHOWING THE
PROPOSED LEASE AREA

⊗ ZONE OF POSSIBLE DRILLSITES
W 9771



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EXHIBIT B
LAND DESCRIPTION

A parcel of tide and submerged lands in the vicinity of Joice Island in Solano County, California, lying within the east portion of T4N; R1W, M.D.B.&M.

All those tide and submerged lands lying within the ordinary high water marks of the West Bank of Suisun Slough, the East Bank of Montezuma Slough, the South Bank of Hunter Cut and the North Bank of Cutoff Slough, and those lands including Joice Island Wildlife Refuge from Hunter Cut, North to Cutoff Slough determining the northernmost border of Joice Island.

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PROJECT DESCRIPTION

The project, identified presently as the Joice Island Project is a proposal of the State Lands Commission to issue a subsurface lease for oil and gas development on portions of the beds of Suisun, Montezuma and Cutoff Sloughs, Hunter Cut and Joice Island Wildlife Refuge. Exploratory and developmental drilling would be conducted from adjacent privately-owned lands.

The project involves drilling of exploratory wells to depths of approximately 6,000 feet. The wells may pass into and bottom in the proposed State lease area at a depth not less than 500 feet below the surface.

The initial exploratory well will be a vertical well drilled from a selected drillsite on marshlands on the west side of Suisun Slough adjacent to Joice Island. This initial site will occupy approximately two acres, and can be used for both exploratory and development drilling, should the latter operation be required. The proposed location to be approved by the landowner will be situated so as to occupy a minimum amount of land as possible. Depending upon the areal extent of the gas accumulation, additional drillsites will be negotiated between Chevron and their lessors. (See Exhibit "A" for intended drillsite.)

In the event of discovery, additional development wells will be drilled utilizing a conventional drilling rig. Each well would require from 10 to 20 days to drill and complete. The entire development should be completed within 12 to 18 months. If commercially producible gas is discovered, the wells will be free-flowing, requiring no lifting equipment and only a minor amount of production gear. Pipelines will carry the extracted gas away from the production site.

Following completion of the development drilling, the drilling equipment will be removed, the sumps vacuumed out and cleaned up, and all traces of the drilling phase removed. If a gas discovery is made the reservoir should be depleted in approximately 10 to 15 years, at which time the wells would be abandoned in accordance with state regulations. Production equipment will be removed and sites will be restored to their original condition.

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Exhibit B

Persons or Agencies Contacted

Memos:

California State Department of Fish and Game
California State Department of Conservation, Division of Oil
and Gas
State Water Resources Control Board
Solid Waste Management Board
California Department of Health
The Reclamation Board
OPR Clearinghouse Attn: Anna Polvos
California Department of Parks and Recreation
Department of Transportation District 3
Air Resources Board
Office of Historic Preservation
State Lands Commission, Sacramento

Letters:

Chevron U.S.A. (APP)
Yolo-Solano APCD
Solano County Planning Department
U. S. Coast Guard
Island Duck Club Montezuma Duck Club Gum Tree Duck Club
RBM Land Company
Suisun Resources Conservation District
Contra Costa County APCD
Contra Costa County Planning Department
Arnold Ranch Inc.

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Discussion of Environmental Evaluation

II A

2. Construction of the initial drilling pad and an access road will disrupt an area of slightly more than two acres. If discovery of gas is made, additional land would be required for more drilling pads (approximately two acres per drillsite). Access roads would pass along the slough levee northwest to existing roads. Once drilling is completed, any constructed production facilities would require a pad of approximately one fourth acre. Produced gas would be transported from the site via pipeline.

3. The possibility that subsidence could occur is discussed in Exhibit "D". Also enclosed is a subsidence monitoring and control plan as required by Public Resources Code Section 6873.2, attached as Exhibit "E".

II B

1. A small amount of air pollution would be generated during operation of diesel engines used in powering drilling operations. Exhibit "C" provides data on operational emissions for the diesel engines in a 250 H. P. rating. Duration of use of the drilling rig would be 10 to 20 days for each well drilled.

2. Relating to the drilling phase, a small amount of odor would be created due to diesel exhaust released in operating the power engines for the drill rig (see Exhibit "C"). If commercially producible quantities of gas discovered, minimal emissions or odor will be released from the production equipment.

II D

4. During the initial exploration phase approximately two acres of land would be utilized as a drilling pad, covering a small portion of marshland. If commercial quantities of gas are found at this site the facilities would only require a pad of approximately one fourth acre.

The excess pad area would be restored as close as practical to its original condition. Additional drillsites (up to eight) would utilize land the same way, with about two acre drill pads for exploratory drilling reverting to one-fourth acre production sites. If no gas is found the exploratory site(s) would be returned to original condition.

II E

1. Construction of each drillsite would cause a temporary disturbance to the area. The area on which the potential site or sites would be located is tidal marsh which is managed by private duck hunting clubs. The marsh is often flooded by these clubs to induce ducks to the area. Other marsh wildlife inhabits the area. The drillsites would temporarily, displace wildlife from the immediate zones but upon completion of drilling operations and removal of the equipment and pad material, wildlife would return to the area.

2. The drillsites being temporary, wildlife would be displaced during the period required to drill and complete from one to eight wells. A rookery for the Great Blue Heron and Greater Egret is located nearby but at sufficient distance ($\frac{1}{2}$ mile) so as not to be interfered with by the proposed drilling operations.

II F

1. There will be an increase in noise level in the immediate vicinity of the drilling site due to the construction equipment and drilling machinery. Noise levels could be as much as 70 decibels at 1,000 feet distance from the site. The noise would be further reduced at greater distances from the site. This increased noise level would last through the initial drilling operation or 10 to 20 days. This time would be extended for each additional site if commercial reserves are found. If production equipment is installed, there would be no noise generated during its projected operation life of 10 to 15 years. If compressors are required, mufflers would be installed to mitigate noise. Other measures will be taken by the applicant, as necessary, to reduce impact of production equipment on the surrounding habitat. Drilling will proceed during the period set forth by the San Francisco Bay Conservation and Development Commission Control Plan.

II G

1. The drill rig would be highly visible at night due to high intensity lighting needed for the round-the-clock operations of drilling. The effect would be temporary, occurring only during the drilling phase (12 to 18 months). This is not anticipated to affect wildlife in the vicinity.

II I

2. If a commercially producible amount is discovered, natural gas is the only non-renewable resource that will be removed.

II J

1. In conducting exploratory drilling operations there is always a possibility of a well blowout which would result in the release

of oil and/or gas, and the potential of fire. The operator will be required to conduct drilling operations in accordance with stringent requirements as set forth in the Regulations of the State Lands Commission which will minimize the probability of an accident occurring.

All applicable standards and regulations will be followed in the design and construction of the surface facilities and gathering line system. Routine inspections will be conducted and in the event of a leak, field personnel will be dispatched to locate and repair it.

II T 1 Alteration of Archaeologically Significant Sites

A recent check was made with Marianne L. Russo, Assistant Regional Officer of the California Archaeological Site Survey in Sacramento. It has been determined that there are no significant archaeological sites in the immediate vicinity of the drilling project. The nearest sites are in the Montezuma hills some 10 miles east of Joice Island. It is decided no archaeological precautions are required for the proposed project.

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EXHIBIT "C"

DIESEL POWERED INDUSTRIAL ENGINE
EMISSION FACTORS AND RATES

750 H.P.¹

	<u>g/H.P. hr.</u> ²	<u>at 75%</u> ³ <u>load factor</u>	<u>g/sec</u>	<u>tons/mo</u>
Carbon Monoxide (CO)	3.030	2.27	0.47	1.37
Exhaust Hydrocarbons (HC)	1.120	0.84	0.17	.51
Evaporative Hydrocarbons	None	---	---	---
Crankcase Hydrocarbons	None	---	---	---
Nitrogen Oxides (NO _x)	14.000	10.50	2.18	6.32
Aldehydes	0.210	0.16	0.03	.12
Sulfur Oxides (SO _x)	9.931	0.70	0.15	.42
Particulate (Part)	1.000	0.75	0.16	.45

1. Total H.P. two engines of approximately 350 H.P. and 400 H.P. will be used.
2. Data obtained from EPA, AP42 supplement S; December 1975, p. 3.3.31.
3. Hoisting operations will require 675 H.P. for approximately 6 hours/day and drilling operations will require 525 H.P. 18 hours/day.

$$\text{load factor 1} = 675/750 = 90\%$$

$$\text{load factor 2} = 525/750 = 70\%$$

$$\text{Average load factor} = \frac{(0.90)(6) + (0.70)(18)}{24} = 75\%$$

24

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EXHIBIT "D"

COMMENT ON LAND LEVEL VARIATIONS

Considering subject IIA-3, land subsidence could occur. A discussion and analysis of subsidence in this area of Joice Island on the Suisun marsh reads as follows.

Extraction of natural gas in this area is not considered a significant cause of subsidence, other possibilities for subsidence include the affect of peat soils. Peat soils which can range from a few feet up to 40 or 50 feet in thickness, cover virtually all of the marsh region.

Historically peat soils experience continually subsiding land levels as the result of oxidation of the peat fibers, wind erosion, compaction by farm equipment, and loss of water in the upper few feet during the dry season. The California Department of Water Resources cites this subsidence as averaging three inches per year in their Bulletin 76, publ. December, 1960. Running counter to this trend is a swelling of the peat soil which occurs during inundation of the area in the wet season. As a consequence of these factors no on-going effort has been maintained with respect to elevation control in the marsh proper. However, the levees have had to be raised periodically as the marsh soil has subsided.

When considering the relationship of possible gas production from beneath the marsh to land stability in this area, it is reasonable to remove the influence of the peat soils from the question, and consider only the behavior of the solid rock strata underlying the marsh. With this view in mind, the writer has reviewed the historic record of land levels available from the National Geodetic Survey, the U.S. Geological Survey, the Soil Conservation District office, and some California Highway Department stations, with the object of determining the pattern of past experience in the region in question. A few stations (Bench Marks) were available in the marsh proper and these are reported separately below. The bulk of the traceable elevation records has been obtained from stations around the periphery of the marsh which are sited on solid ground.

The results of this survey of the records may be summarized as follows:

East of the marsh

Average subsidence over periods of 12 - 32 years = .165 inches/year.

Maximum - .19 inches/year

Minimum - .04 inches/year

North of the marsh

Average subsidence over period of 8 - 32 years = .11 inches/year

Maximum = .44 inches/year

Minimum = .008 inches/year

Some stations north of the marsh were elevated over the period of observation:

Average increase in elevation over period of 8 - 11 years = .09 inches/year

Maximum = .21 inches/year

Minimum = .009 inches/year

West of the marsh

Average subsidence over periods of 9 - 37 years = .05 inches/year

Maximum = .07 inches/year

Minimum = .009 inches/year

Some stations west of the marsh were elevated over the period of observation:

Average increase in elevation over periods of 9 - 23 years = .12 inches/year

Maximum = .27 inches/year

Minimum = .03 inches/year

On the marsh

Readings on the peat soil at the south edge of the marsh all indicated subsidence:

Average subsidence over a seven year period = .34 inches/year

Maximum = .46 inches/year

Minimum = .23 inches/year

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A general review of this regional data shows that elevation changes, including those few stations on the marsh, have been very small; comparable to, or even less than, those observed in the Freeport area (further east along the Sacramento River) in a previous study. The erratic nature of the readings north and west of the marsh suggests that some crustal adjustment may be continuing in this region. The strata of the area are known to be deformed by numerous folds and faults, and the period of structural adjustment may not be entirely over.

Subsidence in the Sacramento River delta region is generally attributed to three causes:

- 1) Ground water withdrawal
- 2) Oxidation, deflation and compaction of peat soils
- 3) Tidal fluctuations

In the Suisun marsh general area cause (1) is probably affecting elevation changes to some extent. In the marsh proper cause (2) is undoubtedly an on-going factor. Cause (3) is likely to have a very small effect which is cyclical in nature. The erratic nature of some of the readings (north and west of the marsh) supports the interpretation that structural movement of the crust is continuing.

There are four fields (active and inactive) in the marsh proper or surrounding area (Kirby Hill, Suisun Bay, Potrero Hills and Ryer Island). Gas has been extracted for as long as 42 years from these fields, and they had produced over 243 million MCF of gas as of 12/31/79. This activity appears to have had little or no effect on the land elevations because, as noted above, the subsidence history correlates rather closely with a non-producing area such as Freeport.

Reasons for the withdrawal of gas to have had no effect on the land levels are generally believed to be:

- (1) The areas of gas accumulation are limited, and the gas columns are not large.
- (2) The reservoir sands are quite competent and resist compaction.
- (3) The water drive fills the pore spaces as the gas is withdrawn.
- (4) Water is not extracted with the gas.
- (5) The volume of gas withdrawn is quite small relative to the rock column from which it is produced.

MITIGATING MEASURES PROPOSED TO MINIMIZE IMPACTS

Drilling and completion operations will be conducted in conformance with the regulations of the State Lands Commission and the Division of Oil and Gas. Surface casing will be set as prescribed by regulations to provide anchorage for blowout prevention equipment and protect groundwater. Approved blowout prevention equipment will be used during drilling operations.

Freshwater aquifers that may extend to 2000 feet will be cased and/or protected with cement at the time of completion or abandonment. If toxic materials are used in the drilling fluids, the sump will be lined with impervious material and the spent mud will be disposed of at a site approved by the Regional Water Quality Control Board. The applicant will also contact the Board to determine if adherence to waste discharge requirements will be necessary. Subsequently, the site will be cleaned up as nearly as possible to its original condition.

If producible gas accumulation is discovered, the gas will be moved from the drillsite(s) by pipeline and there will be no venting or release of gas to the atmosphere during the production phase. No impact is expected from these drillsites on neighboring communities because the nearest community, Suisun, is five miles northeast.

Joice Island and neighboring sloughs are well protected from the drillsite area by two levees which stand 8 to 10 feet above ground level between the Island, slough and proposed drillsite area. However, the Lessee will be required to suspend all drilling and production operations, except those which are corrective, protective or mitigative, immediately in the event of any disaster or contamination or pollution resulting from operations under its lease. Such drilling or productions shall not be resumed until adequate measures have been taken and authorization for resumption of operations has been made by the Commission.

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 the slough, bay or any marsh lands connected therewith.

Corrective measures shall be taken immediately whenever pollution has occurred.

The Lessee will be required to comply with the Commission's Rules and Regulations for Drilling and Production Operations on Tidal and Submerged Lands.

EXHIBIT "E"
SUBSIDENCE MONITORING AND CONTROL PLAN

The lessee, upon the discovery of natural gas and/or oil, will be required to determine a more recent subsidence rate before large volumes of gas are produced from the subject lease. This will be accomplished by precision leveling surveys of bench marks (USGS USC & GS and others) in the area. The lessee will also be required to establish bench marks (preferably one on each side of the lease area) which will be tied by precise leveling into the control network. Such benchmarks set by the lessee will be surveyed each year and the control network surveyed every two years.

Since it has been established that during subsidence (due to removal of subsurface elements) benchmarks 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 technique and comparisons with later surveys or "runs" may indicate casing deformation, a sign of possible 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 be 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 a withdrawal rate could be determined which would allow the formation pressures to remain stable and constant. This condition could negate areal subsidence attributed to gas production.

The drilling regulations include requirements for well casing, cementing of well casing, blowout prevention equipment, supervision and training of drilling personnel, drilling mud system and control, safe drilling practices, and drilling inspection. The production regulations include well completion and safety equipment remedial and well maintenance work, subsurface injection projects, waste disposal, safety equipment and procedures relating 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 procedures are followed and a system of inspections and reports are required to insure that this is being done.

Though the chance of discovering oil is slight, the Lessee 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 drilling operations. Clean Bay Inc., a non-profit oil spill cleanup and preventive organization will form an integral part of the contingency plan having cleanup equipment available in Concord and Martinez.