

MINUTE ITEM

This Calendar Item No. 24  
was approved as Minute Item  
No. 24 by the State Lands  
Commission by a vote of 3  
0 at its 5-31-78  
meeting.

MINUTE ITEM

5/78  
Priddy

24. SUBSURFACE OIL AND GAS LEASE - W 40023.

During consideration of Calendar Item 24 attached, Mr. D. J. Everitts, Chief, Extractive Development, State Leases, explained the item.

Ms. Rosemary Daniels, a resident of the pocket area, appeared in opposition. She mainly objected to 1) the timing of the hearing which prevented other people from protesting this project; and 2) that an Environmental Impact Report should have been prepared instead of a Negative Declaration because of the risks involved. She also had been told that this meeting was the last chance to request that an EIR be prepared. It was explained that an Environmental Impact Report could still be requested of the County of Yolo.

Mr. E. Taaffe, representing Chevron, U.S.A., Inc., appeared. He stated he did not personally participate in the preparation of the Negative Declaration, but he did comment that this type of drilling project (directional drilling from a compact site) was successful in densely populated urban areas in other parts of the State.

In addition, Ms. Smith emphasized that the issuance of this permit is contingent upon the applicant obtaining all necessary permits, and upon the staff's receipt from the applicant of an oil spill contingency plan.

Upon motion duly made and carried, the resolution as presented in Calendar Item 24 was approved by a vote of 3-0.

Attachment: Calendar Item 24 (20 pages).

CALENDAR ITEM

24.

5/78  
W 40023  
Priddy  
PRC 5481

SURFACE OIL AND GAS LEASE

APPLICANT: Chevron USA, Inc.  
575 Market Street  
San Francisco, California 94105

LOCATION: Sacramento River, between Freeport Bend  
and Oak Hall Bend, Sacramento and Yolo  
Counties.

ACREAGE: 205.

TYPE OF LAND: Tide and submerged.

PERTINENT INFORMATION:

1. Inasmuch as drill sites are not available on the State parcel and surface drill sites on the adjacent property are under the control of a single party, the leasing provisions of Public Resources Code Section 6827 (competitive bidding) are impractical.

The applicant, who has under lease lands which surround the State parcel, intends to drill directionally into or through the State parcel from a drill site located west of the parcel. It is proposed to enter into a negotiated lease with the applicant pursuant to Section 6815 of the Public Resources Code. Such Section 6815 provide:

"Whenever it appears to the Commission that wells drilled upon private lands are draining or may drain oil or gas owned by the State or where the provisions of Section 6827 are deemed by the Commission to be impractical in the particular case by reason of the small size or irregular configuration of the property, or its inaccessibility from surface drill sites reasonably available or obtainable, the Commission, in lieu of the following provisions of Section 6827, may negotiate and enter into

A 4  
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agreements with the owners or operators of such wells on private lands for the payment of compensation to the State for such drainage, or may negotiate and enter into leases for the development of the State lands through drilling from adjoining lands only....."

2. Under the proposed negotiated oil and gas lease, Chevron USA, Inc. agrees to pay in money to the State annually in advance, as rental, the sum of \$15 per acre and 30% royalty on natural gas produced, and on oil a percentage determined in accordance with the sliding scale schedule (16-2/3% minimum to 50% maximum at 500 B/D/well) attached to the lease on file in the office of the State Lands Commission. Chevron USA, Inc. also agrees to pay the State 5% of the value of all oil or gas produced by wells drilled through the parcel into adjacent lands. The area is considered a natural gas prospect with little likelihood of encountering oil. Maximum payment for any of the adjoining leases is 19% royalty and \$15 per acre annual rental. The lease shall also provide for a primary drilling term of 1 year.
3. In accordance with Section 6873.2 of the Public Resources Code, "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 Sacramento River between Freeport Bend and Oak Hill Bend, Sacramento and Yolo Counties for Oil and Gas Extraction" was published on November 16, 1977 and November 23, 1977. The hearing was held on February 9, 1978, in Room 127, Food and Agriculture Building, 1220 N Street, Sacramento, California. No comments were received at the hearing.
4. In accordance with Section 6818 of the Public Resources Code, the Director of Parks and Recreation was notified

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of the proposed lease and has determined that the project will not interfere with recreational use of the littoral lands.

5. The proposed lease has been reviewed by staff counsel who have advised that the proposed negotiated lease will comply with the requirements of Public Resources Code Section 6815, and other applicable provisions of law and the rules and regulations of the Commission.
6. The proposed lease was reviewed by the Office of the Attorney General in accordance with Public Resources Code Section 6818, who has advised that the proposed lease complies with applicable provisions of law and the rules and regulations of the Commission.

**ENVIRONMENTAL IMPACT:**

The State Lands Commission's Staff, in accordance with Article 10, Section 2906(b) of the Cal. Adm. Code, has conducted an initial study and has concluded that the project will not have a significant effect on the environment. Therefore, in compliance with subsection (c) of Section 2906, a Negative Declaration was prepared and filed with the State Clearinghouse.

This project is situated beneath the Sacramento River, which at this point, has been identified as possessing significant environmental values pursuant to PRC 6370.1, and is classified in a use category, Class B which authorizes Limited Use. Inasmuch as this lease involves a subsurface extractive activity from adjacent property, the significant environmental values at this location will not be impacted.

**EXHIBITS:**

- A. Land Description.
- B. Location Map.
- C. Negative Declaration.

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IT IS RECOMMENDED THAT THE COMMISSION:

1. DETERMINE THAT AN EIF HAS NOT BEEN PREPARED FOR THIS PROJECT BUT THAT A NEGATIVE DECLARATION HAS BEEN PREPARED BY THE COMMISSION'S STAFF FOLLOWING EVALUATION OF COMMENTS AND CONSULTATION WITH PUBLIC AGENCIES WHICH WILL ISSUE APPROVALS FOR THE PROJECT.
2. CERTIFY THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED IN THE NEGATIVE DECLARATION.
3. DETERMINE THAT THE PROJECT WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.
4. FIND THAT GRANTING OF THE LEASE WILL HAVE NO SIGNIFICANT EFFECT UPON THE ENVIRONMENTAL CHARACTERISTICS IDENTIFIED PURSUANT TO SECTION 6370.1, OF THE PUBLIC RESOURCES CODE.
5. FIND THAT, IN ACCORDANCE WITH SECTION 6815, OF THE PUBLIC RESOURCES CODE, AS TO THE 205 ACRES OF TIDE AND SUBMERGED LANDS, SACRAMENTO AND YOLO COUNTIES, THE PROVISIONS OF SECTION 6827 ARE IMPRACTICAL BY REASON OF ITS INACCESSIBILITY FROM SURFACE DRILL SITES REASONABLY AVAILABLE OR OBTAINABLE.
6. AUTHORIZE THE ISSUANCE OF A SUBSURFACE OIL AND GAS LEASE ON 205 ACRES OF TIDE AND SUBMERGED LANDS DESCRIBED IN EXHIBIT "A" ATTACHED, AND BY REFERENCE MADE A PART HEREOF, PURSUANT TO DIVISION 6, OF THE PUBLIC RESOURCES CODE; TO CHEVRON USA, INC. FOR CONSIDERATION OF AN ANNUAL RENTAL OF \$15 PER ACRE, AND AS ROYALTY ON NATURAL GAS PRODUCTION, A 30% SHARE OF ITS VALUE, ON OIL, A PERCENTAGE DETERMINED IN ACCORDANCE WITH THE SCHEDULE ATTACHED TO THE LEASE AND 5% OF THE VALUE OF ALL OIL AND GAS PRODUCED BY WELLS DRILLED THROUGH STATE LANDS INTO ADJACENT PRIVATE LANDS.

Attachment: Exhibit "A"

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EXHIBIT "A"

A parcel of tide and submerged land in the Sacramento River, Sacramento and Yolo Counties, California extending between Freeport Bend and Oak Hall Bend, containing 205 acres, more or less, and more particularly described as follows:

1. Bounded on the south by a line normal to the banks of the Sacramento River at river mile 50.5.
2. Bounded on the north by a line normal to the banks of the Sacramento River at river mile 53.5.
3. Bounded on the east and west by the ordinary high water marks of the Sacramento River.

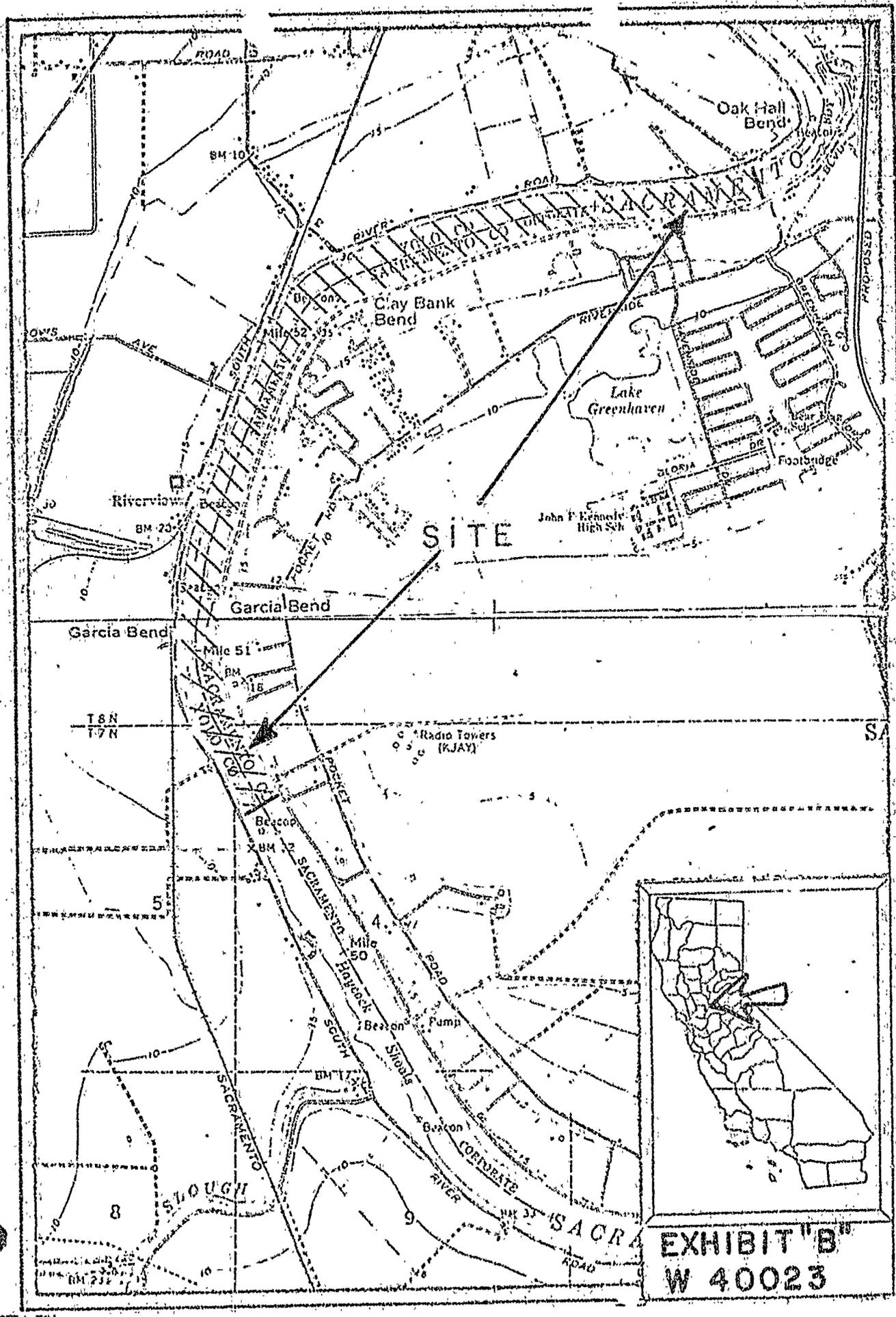


EXHIBIT "B"  
W 40023

# EXHIBIT "C"

STATE OF CALIFORNIA  
STATE LANDS COMMISSION

NEGATIVE DECLARATION  
CHEVRON U.S.A. INC.

State Oil and Gas Lease  
W 40023

This Negative Declaration is prepared pursuant to Section 15083, California Administrative Code, Title 14, Division 6, and is based upon an Initial Study pursuant to Sections 15080 and 15066 thereof.

The proposed project is a request for the issuance of a subsurface oil and gas lease on approximately 205 acres of State land in Sacramento and Yolo counties in the bed of the Sacramento River between Freeport Bend and Oak Hall Bend (See Exhibit "A" Initial Study).

The intent of the applicant is to drill a well or wells to explore for and, if a discovery is made, to develop a natural gas pool. The proposed work would be accomplished with one drilling rig from a location in the agricultural area of Yolo County west of the river. A total of one exploratory well, with possibly one or two redrills, and an estimated maximum of eight development wells, would be required for this project. It is anticipated that directional drilling at a depth greater than 500' below and through the State lands to properties east of the river may be required to complete evaluation and development. For this reason, the applicant will require a lease with unrestricted passthrough rights. In the event of a discovery and ensuing development, a production site or sites will most likely be established west of the river due to high density residential development east of the river in the City of Sacramento. Chevron currently has under lease virtually all of the properties adjoining the subject State lands.

Chevron's drilling and development program for their lease block will be conducted in full compliance with the Division of Oil and Gas and the requirements of governmental agencies including the rules and regulations of the State Lands Commission wherein the State parcel is involved. It is expected that regulatory control will adequately protect both the environment from damage and the general interests of the State.

An Initial Study was prepared by the State Lands Division after consultation with the Department of Water Resources, Division of Oil and Gas, Solid Waste Management Board, Department of Fish and Game, Department of Parks and Recreation, the counties of Sacramento and Yolo and the City of Sacramento.

Based upon such Initial Study, the project will not have a significant effect on the environment for the following reasons:

1. There will be no significant growth including impact, inefficient energy consumption, air and water pollution, or solid waste problems created as a result of implementation of this project.
2. There will be minimal impacts upon fish and wildlife.
3. The implementation of this project will not narrow the range of beneficial uses of the environment or pose long-term risks to health or safety.

The Initial Study together with comments is attached for your information.

STATE OF CALIFORNIA  
STATE LANDS COMMISSION

INITIAL STUDY FOR THE ISSUANCE OF A SUBSURFACE  
OIL AND GAS LEASE COVERING A PORTION OF THE  
SACRAMENTO RIVER AND A PLAN  
FOR THE CONTROL OF SUBSIDENCE AND POLLUTION

1. Project and Its Location

This project is an effort by Standard Oil Company of California to explore for, discover and develop new natural gas reserves in the vicinity of the Sacramento River near and between Freeport Bend and Oak Hall Bend in the southwest portion of Township 8 North, Range 4 East, and the northwest part of Township 7 North, Range 4 East, M.D.B.&M. To facilitate this exploration program and possible ensuing development, it has been requested that an oil and gas lease be issued to Standard Oil Company of California covering a portion of the Sacramento River bottom in this vicinity as shown on Exhibit "A".

2. Purpose of the Project

The purpose of the request for issuance of the aforesaid lease is to facilitate the continuance of an exploratory program by the applicant, culminating in the drilling of an exploratory well and possible redrills and, in the event of a discovery, of followup development wells. The project involves drilling an exploratory well, with possible redrills, from the west side of the river in Yolo County. The wells may pass through the proposed State lease (at a depth not less than 500' below the surface) and bottom in lands under lease to the applicant on the east side of the river. In the event of a discovery, development wells, possibly numbering a total of eight, could be drilled through or into

the State lease from drillsites on the west side of the river in Yolo County.

### 3. General Description of the Project

Geologic and geophysical data obtained by the applicant indicate that a gas accumulation could occur in this area. The project will consist of the drilling of an exploratory well with possible redrills and possibly as many as eight development wells.

The proposed work will be done from a drillsite selected on the agricultural land west of the river. This initial drillsite will occupy approximately two acres, and can be used for both exploratory and development drilling, if the latter is required. The proposed location, as approved by the landowner, is so situated as to occupy a minimum of land presently under cultivation.

Depending upon the areal extent of the accumulation, additional development drillsites will be negotiated between Standard and their lessors.

The well(s) will be drilled one at a time with a single conventional drilling rig. Each well will take from 10 to 20 days to drill and, in the event of a discovery, the entire development should be completed within 12 to 18 months.

If production is obtained, the wells will be free-flowing natural gas wells and will require no lifting equipment and only a minor amount of production gear. The produced gas will be removed from the site by pipeline. The drilling equipment will be removed following development, the sumps vacuumed out and cleaned up, and virtually all traces of the drilling phase removed. If a discovery is made, the gas reservoir will be exhausted in 10 to 15 years, and the wells will be abandoned in accordance with State regulations. The production equipment will then be removed and the site restored to its original condition. No evidence of the project will remain at that time.

#### 4. Present Environment

The existing physical environment in the vicinity of the proposed project is that of a rural agricultural area. Individual properties have an average size range of from 10 to 40 acres with a few larger, up to 300 acres and smaller, 4 to 5 acres, parcels scattered throughout. The land is essentially level, at an elevation of 10 to 15 feet above sea level, and the levees containing the river stand at about 32 feet above sea level. Between Garcia Bend and Clay Bank Bend, the Sacramento Northern Railroad right of way runs along the levee top paralleling the river, and South River Road, a paved rural highway, runs along the foot of the levee on the landward side.

There is no commercial activity in this vicinity other than a local radio station located near the crossing of South River Road and the railroad right of way. It is not anticipated that the drilling operations will interfere with the radio station functions. Across the river, at a distance of about one-quarter mile, a residential subdivision is being developed, but this area is buffered from the potential drillsite by the river levees. There are no public facilities such as schools, parks, playgrounds, etc., in the vicinity of the proposed drilling operations.

#### 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 a discovery is made, that otherwise might not be produced at all. Thus, one beneficial effect of the proposal might be to provide much needed gas to meet the energy needs of the State. Because of the limited and temporary nature of the project, the short-term environmental impacts require more consideration than the long-term impacts. Short-term environmental impacts will have two possible scenarios. The first case would be the drilling and possible redrilling of an exploratory well which failed to find a producible gas accumulation. The second case would be the discovery of a commercial gas.

pool by exploratory drilling. In case one, above, the environmental impacts would have a duration of 30 to 60 days, depending on whether one or two redrills of the initial exploratory well were required. The environmental impacts would consist of the following:

- A. A moderate increase in traffic on South River Road and other access routes, resulting from the transport of equipment, crew personnel and drilling material.
- 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 the drillsite. This noise should be virtually totally attenuated before reaching the residential development across the river, which is buffered by the two intervening levees.
- C. A minor amount of temporary air pollution from the operation of diesel engines supplying power for the drilling (Exhibit "B") activity. This should be approximately equivalent to that contributed by several diesel-powered heavy-duty trucks, such as are continually in transit on nearby Interstate 80 highway.

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 period of about one year, during which the development wells would be drilled. For the ensuing 10 to 15 years, the productive life of the gas pool, there would continue to be a very minor degree of similar impacts as the producing wells are serviced periodically in the course of routine maintenance. Drilling operations in the area are expected to yield natural gas only, as ninety-nine fields in the Sacramento Valley are gas producers and only one produced oil. The pollution potential in the development of a natural gas field is minimal.

Another impact that could occur is subsidence. An analysis of subsidence possibilities in the Garcia Bend area of the Sacramento River follows:

#### General Comment

Variations in land level (including subsidence) in the Sacramento River delta region are generally attributed to three causes:

- (1) Ground water withdrawal.
- (2) Oxidation and compaction of peat and related organic sediments.
- (3) Tidal fluctuations.

The extraction of natural gas is not a significant cause of subsidence in this region because:

- (1) The gas-bearing sands are generally quite 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 commonly 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 rock column involved.

#### Site-Specific Observations

With respect to the location of the proposed project causes (2) and (3) above can be discounted. Cause (2) will not affect this area because the peat and organic soils do not extend north along the river beyond Courtland (Department Water Resources, E-11.76, Prelim. Ed., Dec. 1960, p. 19). Cause (3) results in very small elevation changes (measured in tenths of a foot or less) which are cyclical in nature.

Cause (1), groundwater withdrawal, is the probable cause of the small elevation changes cited below. However, it is not possible to rule out entirely tectonic or isostatic crustal readjustments.

One of the best sources of historic information regarding land level variations in the vicinity of the proposed project is the recurrent survey data of the National Geodetic Survey. Their readings record bench mark elevations over a considerable time span, up to 30 years in many cases. These records have been reviewed and the following is a brief summation of the findings:

Generally speaking historic subsidence in the vicinity of this project is quite small. Along the river, from Oak Hall Bend to Clarksburg, including an area of about two miles on either side of the river, the maximum subsidence over the period from 1939 to 1967 has been 1.191 feet. This was recorded at a bench mark near the crossing of South Gregory Ave. and the Sacramento Northern RR, a junction known as Riverview. The minimum subsidence during this period (1939 to 1967) was recorded at Freeport Bend, on the west side of the river, and amounted to .368 feet. The maximum for the period 1951 to 1967 was .830 feet, again at the Riverview junction. The minimum from 1951 to 1967 was recorded at Arcade, near the crossing of the Sacramento North RR and Jefferson Blvd., and amounted to .338 feet.

An analysis of these, and numerous other recordings by the National Geodetic Survey leads to the following conclusions:

- (1) Maximum avg. subsidence 1939 - 67 = .043 ft./yr.
- (2) Minimum avg. subsidence 1939 - 67 = .013 ft./yr.
- (3) Maximum avg. subsidence 1951 - 67 = .051 ft./yr.
- (4) Minimum avg. subsidence 1951 - 67 = .021 ft./yr.

While the quality of various bench mark stations ranges rather widely throughout the project area, the consistently low and quite uniform changes strongly support the observation that this is a region of very moderate subsidence. The largest long-term subsidence averages about .5 inch per year and the smallest about .16 inch per year. Shorter term (1951 - 67) averages are slightly higher: .6 inch and .25 inch per year, respectively.

6. Adverse Environmental Impacts that Cannot be Avoided if the Project is Implemented

The short-term impacts cited in paragraph 5, although of minor adverse character, cannot be avoided if this project is implemented.

7. Mitigating Measures Proposed to Minimize the Impacts

Drilling and completion operations will be conducted in accordance with regulations of the State Lands Division and the Division of Oil and Gas. Surface Casing will be set as prescribed by regulations to provide anchorage for blowout prevention equipment and to protect groundwater. Approved blowout prevention equipment will be used during drilling operations. Freshwater aquifers that may extend to 2000 feet will be cased and 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 waste discharge requirements will be necessary. Subsequently, the site 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 by pipeline and there will be no venting or release of gas to the atmosphere during the production phase. No conflict is anticipated as a consequence of the presence of a radio station in the vicinity. This station has relocated at their present site subsequent to the applicant's acquiring oil and gas leases on this property. In the event of any impact of drilling or development work on the radio station, suitable measures will be taken to resolve any problems as soon as they are detected.

The Sacramento River is well protected from the drillsite area by the levee, which stands 15 to 20 feet above ground level between the river and the area of proposed drilling. However, the lessee shall 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 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 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 the Sacramento River or any slough or marsh land connected therewith. The lessee will be required to comply with the Commission's 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 Division 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 will be required to submit and have approved by the State Lands Division 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 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 at Concord and Martinez, and available for quick response under emergency conditions.

The lessee, upon discovery of natural gas or oil, will be required to determine a more recent subsidence rate before volumes of gas are produced from the lease. 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 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 shall be surveyed each year and the control network surveyed once 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) will be surveyed for horizontal as well as vertical control. Since it has 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 procedures 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 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 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 water-drive mechanism. If the reservoir has a natural water-drive, then a withdrawal rate could be determined which would allow the formation pressures to remain fairly stable or constant. This method could reduce the ultimate recovery but could be employed if subsidence became a problem.

8. Alternatives to the Proposed Action

The proposed action is the issuance of an oil and gas lease by the State Lands Commission to facilitate the exploration and possible development of a natural gas resource by Standard Oil Company of California. The only alternative to this action would be for the Commission to <sup>not</sup> issue the lease. In this case, the applicant's efforts to perform the proposed exploration and possible development would be severely impaired or precluded. 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 Relation 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 15 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 in question it may not be possible for the applicant to continue the exploratory program and the potential gas resource will remain unevaluated.

11. Growth-Inducing Impact 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

Approximately 5000 barrels of water will be used over a period of 10 days to drill each well. A maximum of two wells will be drilled into State land. The water used in drilling operations will probably be 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 in question. The overall social impact will be negligible.