STATE OF CALIFORNIA-RESOURCES AGENCY

GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS
4800 STOCKDALE HWY., SUITE # 417
BAKERSFIELD, CALIFORNIA 93309
(805) 322-4031

November 6, 1989

BK10901887
IRON MOUNTAIN

Mr. E. F. Gill
BECHTEL PETROLEUM OPERATIONS, INC.
P. O. Box 127
Tupman, CA 93276

DUAL STEAMFLOOD/WATERFLOOD PROJECT PERMIT
Elk Hills Field
Stevens (Western 31S Structure) Zone
Sec. 2,3,4,5,6, T.31S., R.24E.
Sec. 23,24,25,26,36, T.30S., R.23E.
Sec. 29,30,31,32,33,34,35,36, T.30S., R.24E.

Dear Mr. Gill:

The continuance of the above designated project is approved provided that:

1. Notices of intention to drill, redrill, deepen, rework, or abandon, on current Division forms (OG105, OG107, OG108) shall be completed and submitted to the Division for approval whenever a new well is to be drilled for use as an injection well and whenever an existing well is converted to an injection well, even if no work is required on the well.

2. This office shall be notified of any anticipated changes in a project resulting in alteration of conditions originally approved, such as: increase in size, change of injection interval, or increase in injection pressures. Such changes shall not be carried out without Division approval.

3. A monthly Injection Report shall be filed with this Division on our Form OG110B on or before the last day of each month, for the preceding month, showing the amount of fluid injected, and surface pressure required for each injection well.

4. A chemical analysis of the fluid to be injected shall be made and filed with this Division whenever the source of injection fluid is changed, or as requested by this office. ALL FLUIDS MUST MEET CLASS II CRITERIA.

5. All fluid sampling and analyses required by this Division are done in accordance with the provisions of the Division's Quality Assurance Program. Please refer to the Division's "Notice to Oil and Gas Operators" dated: November 17, 1988 (Attached).

6. An accurate, operating pressure gauge or pressure recording device shall be available at all times, and all injection wells shall be equipped for installation and operation of such gauge or device. A gauge or device used for injection-pressure testing, which is permanently affixed to the well or any part of the injection system, shall be calibrated at least every six months. Portable gauges shall be calibrated at least every two months. Evidence of such calibration shall be available to the Division upon request.

7. All injection wells shall be equipped with tubing and packer set immediately above the approved zone of injection upon completion or recompletion, unless a variance to this requirement has been granted by this office.

8. Injection profile surveys for all fluid injection wells shall be filed with the Division within three (3) months after injection has commenced, once every two years thereafter, after any significant anomalous rate or pressure change, or as requested by the Division, to confirm that the injection fluid is confined to the proper zone or zones. This monitoring schedule may be modified by the district deputy. This office shall be notified before such surveys are made, as surveys may be witnessed by the Division inspector.

9. Data shall be maintained to show performance of the project and to establish that no damage to life, health, property, or natural resources is occurring by reason of the project. Injection shall be stopped if there is evidence of such damage, of loss of hydrocarbons, or upon written notice from the Division. Project data shall be available for periodic inspection by Division personnel.

10. The maximum allowable injection pressure gradient is limited to 0.80 psi per foot of depth as measured at the top perforation. Prior to any sustained injection above this gradient, rate-pressure tests shall be made. The test shall begin at the hydrostatic gradient of the injection fluid to be used and shall continue until either the intended maximum injection pressure is reached or until the formation fractures, whichever occurs first. The results of these tests shall be submitted to this Division for approval.

11. All injection piping, valves, and facilities shall meet or exceed design standards for the injection pressure and shall be maintained in a safe and leak-free condition.

12. Any remedial work needed as a result of this project on idle, abandoned, or deeper zone wells in order to protect oil, gas, or freshwater zones, shall be the responsibility of the project operator.

13. Additional data will be supplied upon the request of the Division.

Yours truly,

David Mitchell

E. A. Welge
Deputy Supervisor

cc: RWQCB
UIC file