

STATE OF ALASKA
ALASKA OIL AND GAS CONSERVATION COMMISSION
3001 Porcupine Drive
Anchorage, Alaska 99501-3192

Re: THE REQUEST OF UNION OIL) Area Injection Order No. 13A
COMPANY OF CALIFORNIA to) Swanson River Field
amend Area Injection Order #13 for)
Swanson River Field)

March 16, 1987 (original order)
First Amendment: December 5, 1995

IT APPEARING THAT:

1. The Commission issued Area Injection Order No. 13 for the Swanson River Field on March 16, 1987
2. Union Oil Company of California Inc. ("UNOCAL") became sole operator of the Swanson River Field on December 15, 1992.
3. By letters dated October 2, 1995, and October 19, 1995 UNOCAL requested expansion of the Swanson River Field, Hemlock Oil Pool, to include the G zone of the Tyonek Formation and the lower portion of the Hemlock Formation and appropriate revisions to Area Injection Order 13 to include the expanded pool.

FINDINGS:

1. AS 31 generally, and AS 31.05.030(h) and 20 AAC 25.460 specifically, provide the Commission with the authority to issue an order governing underground injection operations on an area basis. An order permitting the underground injection of fluids on an area basis, rather than for each injection well individually, provides for efficiencies in the administration and surveillance of underground fluid injection operations.
2. Swanson River Field constitutes a compact "project area" which can readily be described by governmental subdivision. UNOCAL is the sole operator of underground injection activities in this area for the Swanson River Field.
3. All aquifers below 1700 feet within the Swanson River Field boundary, and one-quarter (1/4) mile beyond, are exempted under 40 CFR 147.102(b)(1)(i) for Class II injection activities.

4. Adequate confining strata are present below 1700 feet in the Swanson River Field to prevent upward movement of waste fluid from injection zones into non-exempt fresh water sources.
5. The vertical limits for injection of fluids into the Hemlock formation for enhanced oil recovery may be defined in the Soldotna Creek Unit well SCU 41-4, Swanson River Field.
6. The vertical limits for injection of non-hazardous oil field liquids into the Sterling formation may be defined in the Swanson River Unit well SRU 32-33, Swanson River Field.
7. The strata into which fluids are to be injected will accept fluids at injection pressures which are less than the fracture pressure of the injection strata and their confining formations.
8. To ensure that fluids injected are confined to injection strata, the mechanical integrity of injection wells will be demonstrated periodically and monitored routinely for disclosure of possible abnormalities in operating conditions.
9. Injection wells existing on the date of this order were constructed and completed in accordance with Commission regulations.

NOW, THEREFORE, IT IS ORDERED THAT the rules hereinafter set forth govern Class II underground injection operations in the Swanson River Field as described in Rule 2 of Conservation Order No. 123A.

Rule 1: Authorized Injection Strata for Enhanced Recovery

Within the affected area, non-hazardous fluids may be injected for the purposes of pressure maintenance and enhanced oil recovery into strata defined as those strata which correlate with strata found in the Soldotna Creek Unit well SCU 41-4 between the measured depths of 10,085 feet and 10,815 feet.

Rule 2: Authorized Injection Strata for Disposal

Within the affected area non-hazardous oil field fluids may be injected for the purpose of disposal into strata defined as those strata which correlate with strata found in the Swanson River Unit well SRU 32-33 between the measured depths of 2,100 feet and 3,460 feet.

Rule 3: Fluid Injection Wells

The underground injection of fluids must be: 1) through a well permitted by the Commission for drilling as a service well; 2) through a well approved by the Commission for conversion to a service well for injection; or 3) through a well approved by the Commission that existed as a service well for injection purposes on the date of this order.

Rule 4: Monitoring the Tubing/Casing Annulus Pressures

The tubing/casing annulus pressure of each injection well must be checked weekly to ensure there is no leakage, and that it does not exceed a pressure which will subject the casing to a hoop stress greater than 70% of the casing's minimum yield strength.

Rule 5: Reporting the Tubing/Casing Annulus Pressure Variations

Tubing/casing annulus pressure variations of more than 200 psi between consecutive pressure readings made when injecting under steady state conditions of fluid temperature, rate, and pressure must be reported to the Commission on the first working day following the observation.

Rule 6: Demonstration of Tubing/Casing Annulus Mechanical Integrity

A schedule must be developed and approved with the Commission which ensures that the tubing/casing annulus for each injection well is pressure tested prior to initiating injection and at least once every four years thereafter.

A test surface pressure of 1500 psi, or 0.25 psi/ft multiplied by the vertical depth of the packer whichever is greater; but not to exceed a hoop stress greater than 70% of the casing's minimum yield strength. The test pressure must be held on the tubing/casing annulus for 30 minutes with no more than a 10% decline and must be stable at the end of the test period. As an alternative, with Commission approval, injection wells may be surveyed using an EPA sanctioned logging device every second year. The Commission must be notified at least 24 hours in advance to enable a representative to witness pressure testing or logging.

Rule 7: Well Integrity Failure

Whenever operating pressure observations or pressure tests indicate pressure communication or leakage of any casing, tubing or packer, the operator must notify the Commission on the first working day following the observation and obtain approval of a plan for corrective action.

Rule 8: Plugging and Abandonment of Fluid Injection Wells

An injection well located within the affected area must not be plugged or abandoned unless approved by the Commission.

Rule 9: Administrative Relief

Upon request, the Commission may administratively amend any rule stated above as long as the operator demonstrates to the Commission's satisfaction that sound engineering practices are maintained and the amendment will not result in an increased risk of fluid movement into an underground source of drinking water.

DONE at Anchorage Alaska, and dated March 16, 1987, first amendment December 5, 1995



David W. Johnston, Chairman
Alaska Oil and Gas Conservation Commission

Tuckerman Babcock, Commissioner
Alaska Oil and Gas Conservation Commission

J. David Norton, P.E., Commissioner
Alaska Oil and Gas Conservation Commission

AS 31.05.080 provides that within 20 days after receipt of written notice of the entry of an order, a person affected by it may file with the Commission an application for rehearing. A request for rehearing must be received by 4:30 PM on the 23rd day following the date of the order, or next working day if a holiday or weekend, to be timely filed. The Commission shall grant or refuse the application in whole or in part within 10 days. The Commission can refuse an application by not acting on it within the 10-day period. An affected person has 30 days from the date the Commission refuses the application or mails (or otherwise distributes) an order upon rehearing, both being the final order of the Commission, to appeal the decision to Superior Court. Where a request for rehearing is denied by inaction of the Commission, the 30-day period for appeal to Superior Court runs from the date on which the request is deemed denied (i.e., 10th day after the application for rehearing was filed).