EXHIBIT "A"

INJECTION WELL MONITORING GUIDANCE

(Revised 5/7/97)

INJECTION PROFILES

1) All injection profiles shall be a combination of temperature and radioactive tracer logs. A representative of the Division will always witness the injection profiles.

2) All log curves shall be started (or finished) at a minimum of 200 feet above the top perforation. Temperatures curves shall be run: a) while injecting, and, ***if the well is on vacuum or goes on vacuum within 30 minutes of shutting in the well*** at the conclusion of the tracer studies; b) 30 minutes after shut-in, c) 1 hour after shut-in, and d) 2 hours after shut-in. ***If the well is holding surface pressure*** at the conclusion of the tracer studies, shut- in temperature curves will be run: b) 1 hour after shut-in, c) 2 hours after shut-in, and d) 24 hours after shut-in.

3) Radioactive tracer runs shall start at a minimum of 150 feet above the top perforation and consist primarily of an "intensity" type survey. The initial recorded runs through the radioactive material should have a minimum of 6 inches chart deflection immediately above any anticipated loss interval. The tracer intensity shall be recorded until the R/A residual falls below 1 chart division deflection over background.

4) The "velocity" type and "drop shot" type surveys are not required but may be run at the discretion of the operator of the well. The determination should however, take into consideration the injection rate. It may be desirable to run velocities if the rate is such that drag runs cannot easily be made. As a rule of thumb, it is difficult to keep up with a slug with an injection rate over about 1500 bpd in 5-½ inch casing.

5) A "no flow" interval should be established immediately below the bottom perforation or, if flow exists, a percentage or rate of movement below the perforated interval should be calculated.

6) Channel (leak) checks should be made first at the bottom perforation and finally at the top perforation with the detector tool positioned approximately 10 feet below (for a downward check) or above (for upward) the subject perforations. Possible casing leak situations should be investigated by breaking down the entire blank pipe interval (unless the probable interval is identified by temperature or previous tracer studies), from the top perforation to the packer in 10 foot intervals. Any suspect casing collars should be closely investigated in a similar method as channel detection utilizing subsequent drag runs. The R/A "burst" or "slug" should be of very high intensity and recorded on time-drive for a minimum of 5 minutes (unless R/A material is detected rapidly). At the conclusion of the time-drive survey, the logger shall drop below the

remaining R/A material and make a number of depth-drive (log through) runs until the existence or severity of any channeling or leak is determined. Every effort should be made to establish the top or bottom of the channel(s) if one exists. If there is a severe channel, this might include "unloading" the R/A ejector tool at the top or bottom perforation in an attempt to saturate the fluid moving in the channel. The logging unit operator should be able to allocate the usage of R/A material so as to leave no doubt about the existence and severity of channels or leaks at these two positions.

7) If any channeling exists, the Division representative on location shall make the determination, based on their judgement as to the severity of the channel or leak, to immediately shut the well in or not.

8) Copies of all logs shall be forwarded to the District office and the Division office of the Oil Conservation Division. After reviewing the results in the Division office, a final determination shall be made as to the future status of the well.

FREQUENCY OF INJECTION PROFILES

A complete injection profile consisting of combination temperature and radioactive tracer conducted as outlined above, shall be run at the following times:

1) An initial profile may be required prior to commencing injection operations into the well depending on the outcome of the post-frac evaluation log. If there is any question as to the fracture height and/or the existence of any upward channelling, a pump-in injection profile should be run in accordance with the above guidelines.

2) After injection into the well has stabilized, but not to exceed sixty days from implementation, and;

3) Approximately one year after the date of 2) above and each year thereafter.

4) The Division may suspend additional annual profiles depending upon the results of the initial and first year profiles. Additionally, the Division may request profiles be conducted at times other than those mentioned above.