

GENERAL

Francis McKay was issued Nevada Well Driller's License No. 514 on January 31, 1967, after approval by the Statewide Well Driller's Advisory Board and the State Engineer. Mr. McKay has timely renewed his license since 1967 and presently continues to hold Nevada Well Driller's License No. 514, which expires on July 1, 1982. 1/

A review of the records of the State Engineer's office indicate that Mr. Francis McKay, through McKay Drilling, Inc., has been actively engaged in well drilling operations involving geothermal wells in the Truckee Meadows area of Washoe County, a designated ground water basin.

On January 12, 1981, the State Engineer's office received a letter of complaint dated January 11, 1981, under the signature of Forest A. King. On June 17, 1981, the State Engineer's office received a notarized letter of complaint dated June 16, 1981, under the signature of Herman L. Phelps. On January 26, 1982, the State Engineer received a handwritten letter of complaint dated January 24, 1982, under the signature of Benson J. Benjamin. The three described complaints addressed the drilling practices and procedures employed by McKay Drilling, Inc., in the drilling and construction of geothermal heat wells as well as the heating systems installed in several single-family dwellings in the Truckee Meadows area.

A public hearing in the matter of these complaints was held on March 19, 1982, beginning at 10 o'clock A.M. at the Washoe County Commission Auditorium, 1205 Mill Street, Reno, Nevada, for the purpose of receiving testimony and evidence in the matter of the above-described complaints. All parties to the proceedings were notified by certified letter dated March 2, 1982, of the time and place of the hearing. The letters of complaint received by the State Engineer's office were introduced into evidence 2/ at the hearing and identified as State's Exhibits 1, 2, and 3, and are made a part of this Ruling by reference as well as the reporter's transcript of the hearing. This is a matter of public record and may be viewed at the State Engineer's office during regular office hours.

FINDINGS

The State Engineer, after reviewing the letters of complaint, the transcript of the hearing, and other public records on file in the State Engineer's office, has identified the following issues:

1. Testimony 3/ indicated that Mr. Benjamin and possibly other homeowners in the southwest Reno area, have had geothermal heating systems installed in their single-family residences. Mr. Benjamin apparently has had operational problems with his system and the system was installed by Francis McKay (McKay Drilling, Inc.).

2. Concern was expressed in the letters of complaint 4/ and in testimony presented at the hearing by the complainants regarding the discharge of waste water from the geothermal wells into the municipal waste water collection system. Testimony 5/ also established that there are installed in some of the geothermal wells "pump-off" pumps for the purpose of pumping-off cold water in order to maintain desirable temperatures in the well.
3. Testimony 6/ was received into the record by the complainants and Mr. McKay and his witness, Mr. Peter G. Guisti, 7/ in favor of and against the use of cable tool drilling rigs for the purpose of constructing geothermal heat wells particularly addressing the sealing off of cold water and hot water aquifers.
4. Testimony was received concerning the placement of required sanitary surface seals on the geothermal wells.
5. Testimony was received concerning the adoption or implementation of additional regulations because of the concern for management and depletion of the geothermal resource.

In addition, the letters of complaint and testimony 8/ given at the hearing focused on issues that are not under the jurisdiction of the State Engineer, namely, the geothermal heat systems installed within the homes and the licenses and permits required thereof. For this reason this ruling will not address those issues.

King Complaint - Mr. King in his letter of complaint 9/ alleged that McKay Drilling, Inc., through driller Gordon McKay had used a cable tool driven well rig to drill some 25 geothermal wells within the Moana area of the Truckee Meadows ground water basin within the preceding 12 months. The complaint contends that none of the wells meet the Nevada standards of construction for sealing and/or hydrothermal engineering, and further that the wells were designed and constructed in a manner that allowed reinjection of waste waters into aquifers other than those from which the geothermal resource was extracted. The complaint further contended that it was impossible to drill a proper geothermal well with a cable tool driven rig. Mr. King in his letter of complaint and in testimony 10/ discussed at length his concern about the future preservation of the geothermal resource and the need to protect the resource, the environment and the consumer. In testimony given by Mr. King at the hearing, he was unable to provide the State Engineer with specific information 11/ as to the location of the 25 geothermal wells referred to in his letter of complaint or provide any specific testimony 12/ concerning the alleged deficiencies in standards of construction or the proper sealing of the wells. Mr. King's testimony in regard to the location of the wells reflected a lack of personal knowledge concerning the actual well construction and/or sealing. Mr. King testified that his information was mostly hearsay as to the location of the sub-standard

constructed wells and that he was not specifically aware of their location. The matter of the cable tool rig being utilized in the drilling and constructing of geothermal wells received substantial testimony by both Mr. King and Mr. Pete Guisti, 13/ witness for Francis McKay. The present regulations for drilling wells for the State of Nevada do not preclude the use of cable tool rigs for the purposes of drilling and constructing geothermal wells. The adequacy of the cable tool rig being utilized in the drilling and construction of geothermal wells is reflected in the transcript by Mr. King in the negative and Mr. Guisti in the affirmative. The primary basis of the complaint is objection to the use of cable tool rigs and the question of whether the wells can be properly sealed in regards to good quality and poor quality aquifers as required under Regulations 3.14 and 3.15. Based upon the background, education, experience, and qualification of the witnesses, it would appear that the testimony of Mr. Peter Guisti, a licensed Civil Engineer, would bear more credence than that of Mr. King. Mr. Guisti's testimony alleges that geothermal wells can more properly be drilled and constructed with the use of a cable tool rig and his reasons thereof are set forth in his testimony. 14/ Mr. King in his letter of complaint and testimony also expressed concern over the discharge of water from the geothermal wells into the municipal waste water collection system.

Phelps Complaint. - Mr. Phelps identified himself as a former employee of McKay Drilling, Inc., 15/ from September, 1980, through May, 1981. During his time of employment, Mr. Phelps alleges that McKay Drilling failed to place sanitary seals or inadequate seals on an unspecified number of wells that they drilled particularly in the southwest part of Reno. 16/ Regulations for drilling wells did not require sanitary seals for geothermal wells prior to August, 1981. 17/ The requirement for 50-foot sanitary seals extended only to domestic wells as defined in the regulations in effect prior to August, 1981. 18/ Mr. Phelps also alleged in his complaint that wells drilled by McKay Drilling, Inc., were improperly sealed in regards to good quality and poor quality aquifers as required under Regulations 3.14 and 3.15. Mr. Phelps provided no evidence or testimony at the public hearing 19/ to substantiate this allegation and further, the testimony of Mr. Guisti, witness on behalf of McKay Drilling, Inc., supported the contention that a properly constructed geothermal well can be accomplished by use of a cable tool drilling rig. Mr. Phelps additionally expressed his concern about discharge of water from geothermal wells. 20/ The use of a geothermal well by two single-family dwellings 21/ at 4150 and 4100 Warren Way, Reno, without the benefit of a permit as required under Nevada Water Law is being further investigated by the State Engineer's office. The statute 22/ is specific in its definition of domestic use and the use of ground water for the purposes of capturing energy. The term "domestic use" includes the use of geothermal resources for domestic heating purposes. The distinction of whether a right must be obtained in the case of actual diversion of water or may be obtained 23/ in the case of heat extraction only is clearly defined in the Law for uses other than domestic.

Benjamin Complaint - Mr. Benjamin's complaint 24/ states that McKay Drilling, Inc., did not drill the domestic heat well on his property but did install the heat system in his residence. Mr. Benjamin also alleges that there are 27 other geothermal jobs in the Reno area that he was told about which were constructed by McKay Drilling, Inc. The complaint further alleges that the wells drilled by McKay were drilled with a drilling rig that made it almost impossible to comply with rules and regulations of the Water Resources Department. 25/ The existing regulations do not preclude the use of cable tool rigs for the drilling of geothermal wells. 26/ Reference is further made to the testimony of McKay's witness, Mr. Guisti, 27/ concerning the adequacy of cable tool rigs. Mr. Benjamin's testimony 28/ failed to provide any additional evidence of improper construction of geothermal wells by McKay. Mr. Benjamin's complaint 29/ was primarily directed toward issues that are not under the jurisdiction or authority of the State Engineer.

CONCLUSIONS

1. The State Engineer has the authority and responsibility under the Law to adopt and enforce regulations for the drilling of wells in the State of Nevada. 30/
2. Domestic use of water also extends to the use of geothermal resources for domestic heating purposes and does not preclude the discharge of waste water up to 1,800 gallons per day as defined in the Law. 31/
3. The regulations for drilling wells do not prohibit the use of cable tool rigs for the purposes of drilling geothermal wells. 32/
4. There was no evidence or testimony presented by the complainants to support the allegation that 50-foot sanitary seals as required by regulation had not been placed or improperly placed. 33/
5. There was no evidence or testimony presented to support the allegation that wells drilled by McKay Drilling, Inc., are improperly sealed in accordance with Regulations 3.14 and 3.15.

RULING

No evidence or testimony has been presented to support the allegations set forth in the complaints; therefore, no disciplinary action will be taken by the State Engineer regarding drilling activities of Francis McKay or McKay Drilling, Inc.

Respectfully submitted,



Peter G. Morros
State Engineer

PGM/ja

Dated this 3rd day

of JUNE, 1982.

FOOTNOTES

1. Public record in the State Engineer's office.
2. Hearing transcript, Page 5.
3. Hearing transcript.
4. State exhibits 1, 2, and 3.
5. Hearing transcript.
6. Hearing transcript.
7. Hearing transcript.
8. State exhibits 1, 2, 3, and hearing transcript.
9. State exhibit 1.
10. Hearing transcript, Page 96.
11. Hearing transcript, Pages 110-111.
12. Hearing transcript, Pages 110-116.
13. Hearing transcript, Pages 110-119, Pages 152-171.
14. Hearing transcript, Pages 152-171.
15. State exhibit 2.
16. State exhibit 2.
17. Public record in the State Engineer's office.
18. Public record in the State Engineer's office.
19. Hearing transcript.
20. State exhibit 2.
21. State exhibit 2.
22. NRS 533.030, 534.010, 534.180, 534A.040.
23. NRS 533.030.
24. State exhibit 3.

FOOTNOTES (PAGE 2)

25. State exhibit 3.
26. Public record in the State Engineer's office.
27. Hearing transcript, Pages 152-171.
28. Hearing transcript, Pages 140-151.
29. State exhibit 3.
30. NRS Chapters, 533, 534, and 534A.
31. NRS 534.010, 534.180.
32. Public record in the State Engineer's office.
33. Hearing transcript.