NOTICE OF COMBINED PUBLIC MEETING AND POSSIBLE EXECUTIVE SESSION

OIL AND GAS CONSERVATION COMMISSION

Pursuant to A.R.S. § 38-431.02, notice is hereby given to the members of the Oil and Gas Conservation Commission and to the general public that the Oil and Gas Conservation Commission will hold a meeting open to the public on March 12, 1993, at 10:00 a.m. in Room 500 of the State Capitol located at 1700 West Washington, Phoenix, Arizona 85007. As indicated in the agenda, the Oil and Gas Conservation Commission may vote to go into executive session which will not be open to the public to discuss certain matters.

The agenda for the meeting is as follows:

1. Call to Order.
5. Oral hearing, close record, and adopt rules published in January 29, 1993 A.A.R.
6. Discuss repeal of R12-7-193 and R12-7-195.
7. Discuss draft legislation on behalf of WESTMARC.
8. Assistant Attorney General report on Contender and Cam-Roy wells.
9. Discuss meeting with the Navajo Mineral Department.
10. Election of officers.
11. Call to the public.
12. Announcements.

The Oil and Gas Conservation Commission may vote to go into Executive Session, pursuant to A.R.S. § 38-431.03(A)(3), which will not be open to the public to consult with its attorney and receive legal advice with respect to any regular agenda item listed on this agenda.

A copy of the agenda background material provided to Commission members (with the exception of material relating to possible executive sessions) is available for public inspection at the Oil and Gas Program Administrator’s office, 845 North Park Avenue, Suite 100, Tucson, Arizona 85719.

The public will be afforded an opportunity to comment on any item on the agenda; however, at the beginning of the meeting, the Commission may vote to set up a time limit on individual comments.

Dated this 26th day of February 1993.

OIL AND GAS CONSERVATION COMMISSION

Steven L. Razz
Oil and Gas Program Administrator
OIL AND GAS CONSERVATION COMMISSION
845 North Park Avenue, #100
Tucson, Arizona 85719

Minutes of Meeting
October 23, 1992

Present:

Mrs. Jan C. Wilt, Chair
Mr. J. E. Warne Jr., Vice-Chair
Mrs. Barbara Murphy, Member
Mr. Zed Veale, Member
Dr. Larry Fellows, State Geologist
Mr. Steven L. Rauzi, Oil and Gas Program Administrator

The regular Commission Meeting of October 23, 1992, was called to order by Mrs. Jan C. Wilt at 10:00 a.m. in Room 500, State Capitol Building, Phoenix, Arizona.

Mrs. Wilt welcomed Mr. Veale to the Commission as a Member and gave him the Governor's certificate of appointment as a member of the Oil and Gas Conservation Commission.

APPROVAL OF MINUTES OF MEETING OF JULY 6, 1992

Mrs. Murphy moved, seconded by Mr. Warne:

THAT THE MINUTES OF THE MEETING OF JULY 6, 1992, BE ACCEPTED AS PRESENTED

Motion carried unanimously.

DISCUSSION OF SUNCOR-MELANGE #32-23 WELL

Mr. Rauzi reported that the SunCor-Melange #32-23 well was drilled in September. He indicated that several questions about groundwater protection were raised as a result of this well and that he included this item to give the public an opportunity to discuss these questions with the Commission. Mr. Bill Bates, Public Works Director for the City of Avondale, wrote to Dr. Fellows about this well and was invited to this meeting in Dr. Fellow's reply. No one from Avondale attended this meeting. Mr. Rauzi is writing an article for Arizona Geology that will describe the construction of the well and address the protection of groundwater. Mrs. Wilt commended Dr. Fellows and Mr. Rauzi on their work with regard to this situation.

STATEMENT OF DIRECTOR AND STATE GEOLOGIST

Dr. Fellows reported on the 1994 budget and noted that IOGCC membership funds were requested. The Governor's Office will recommend the same level of funding as 1993 and unless funding is provided to account for the escalating rent and the proposed salary increase, a reduction in force will be necessary. In response to Mrs. Murphy, Dr. Fellows noted that the move to a state building is on hold because funds are not available to renovate the building. He
discussed the potential impacts from project SLIM and the mid-year budget cuts and described the annual report, which will be the first to include oil and gas activities. He canceled his attendance at the annual meeting of the Geological Society of America to conserve money for the mid-year budget cuts.

**REPORT OF THE OIL AND GAS PROGRAM ADMINISTRATOR**

The activity report of Mr. Rauzi was sent to the Commissioners and has been made a part of these minutes. He reported that Mr. Merle Bohlander of Pampa, Texas, bought the old Kerr-McGee helium plant at Navajo to salvage it and requested information on reentering one of the old helium wells in the Pina Dome Field. Apparently, he wants to make sure that the pressure in the field is depleted before he dismantles the Navajo plant. Mr. Rauzi sent him the forms and a plugging record from one of the old wells.

**CONSIDERATION TO INITIATE RULE MAKING PROCEEDINGS**

The proposed (1) amendments to rules R12-7-101, R12-7-119 through R12-7-122, R12-7-126 through R12-7-129, R12-7-176, and R12-7-178 through R12-7-181, (2) adoption of rules R12-7-125, R12-7-175, and R12-7-182, and (3) repeal of rule R12-7-177, Appendix 1 in Article 1, and Article 2 were sent to the Commissioners and have been made a part of these minutes. Mr. Rauzi discussed the proposed changes with emphasis on the amendments to the injection rules.

Mr. Wilt moved, seconded by Mrs. Murphy:

**THAT THE OIL AND GAS CONSERVATION COMMISSION APPROVE THE RULES AS PRESENTED AND INITIATE THE RULE MAKING PROCEEDINGS**

Motion carried unanimously.

Mr. Rauzi explained the new rule-making procedure, which requires that a notice of rule making be published in the Arizona Administrative Register (A.A.R.) 30 days before the Governor's Regulatory Review Council (GRRC) considers the rules. An additional notice is published after the GRRC meeting. Mrs. Wilt signed the new Notice of Proposed Rule Making Submitted to the Governor's Regulatory Review Council for publication before the GRRC meeting and Form R101, Notice of Proposed Rule Making, for publication after the GRRC meeting. Mr. Rauzi indicated that he will forward the rules to the Governor's Regulatory Review Council for approval.

Mr. Rauzi pointed out that because of the new procedure, he would not appear before GRRC with this set of rules until January 5, 1993, and that the public hearing on this set of rules could not be scheduled before March 1, 1993. The Commission scheduled the oral hearing on this set of rules for March 12, 1993, in Room 500 of the State Capitol Building.


Mrs. Wilt opened the floor for comments and discussion on this set of rules. No oral comments were received.
Oil and Gas Conservation Commission Minutes October 23, 1992 Page 3

Mrs. Wilt requested Mr. Rauzi to discuss the written comment received on the bond required in R12-7-103 and compare this with the bond required in surrounding states. The written comment called for a bond amount of 125% of engineering and construction costs of a well. Mr. Rauzi reported that this is far in excess of the bond required in surrounding states or the federal government, that most of our bonds are in the form of certificates of deposit, and that raising the bond amount would tend to exclude financially-shaky operators and provide more flexibility to the Commission in having wells plugged and abandoned. Mr. Warne suggested a bond amount of $10,000 for a well drilled to 10,000 feet or less and $20,000 for a well drilled deeper than 10,000 feet. Mr. Rauzi noted that only 9 or so wells have ever been drilled deeper than 10,000 feet in Arizona so most operators would be dealing with the lower bond. The Commission agreed to maintain the statewide bond at $25,000.

Mr. Warne moved, seconded by Mrs. Murphy:

THAT THE OIL AND GAS CONSERVATION COMMISSION AMEND R12-7-103, PAGE 1, LINE 6 AND 7, TO READ "...THE BOND AMOUNT SHALL BE $10,000 FOR A WELL DRILLED TO A TOTAL DEPTH OF 10,000 FEET OR LESS, $20,000 FOR A WELL DRILLED DEEPER THAN 10,000 FEET, OR $25,000 AS A BLANKET BOND TO COVER ALL WELLS...."

Motion carried unanimously.

Mr. Rauzi asked Ms. Clark if this would be a substantial change and if the Commission could adopt the rule as just amended. After calling Ms. Elizabeth Stewart of the Attorney General's Office, Ms. Clark advised that the rules could be adopted today, that the minutes reflect the previous language and the exact language at amended, and that the Commission direct Mr. Rauzi to amend the concise explanatory statement accordingly and provide information showing that the new bond is a negligible increase in the total cost of drilling a well.

Previous language of R12-7-103, page 1, line 6 and 7 was "...$5,000 for each individual well....".


Mrs. Murphy moved, seconded by Mr. Warne:


Mrs. Murphy moved, seconded by Mr. Veale:

THAT THE OIL AND GAS CONSERVATION COMMISSION ADOPT THE CONCISE EXPLANATORY STATEMENT AND DIRECT MR. RAUZI TO CHANGE PARAGRAPH 2 TO REFLECT THE AMENDMENT MADE TO R12-7-103

Mr. Warne moved, seconded by Mrs. Murphy:
Oil and Gas Conservation Commission Minutes  October 23, 1992  Page 4

THAT THE OIL AND GAS CONSERVATION COMMISSION ADOPT THE RULES AS AMENDED THIS DATE SUBJECT TO CERTIFICATION BY THE ATTORNEY GENERAL

Motion carried unanimously.

Mrs. Wilt signed Form R102, Certification of Rules and Order of Adoption and Mr. Rauzi indicated that he would forward the rules to the Attorney General for certification.

ASSISTANT ATTORNEY GENERAL REPORT ON CONTENDER AND CAM-ROY WELLS

Ms. Clark discussed Mr. Rauzi’s memo describing a contractual argument for imposing a lien on the property where the Cam-Roy wells are located. The failure to plug and abandon the Cam-Roy wells was a breach of contract and he argued for an equitable lien on the property until the contract to plug and abandon was satisfied. However, Ms. Clark noted that state agencies, unlike a regular party to a contract, must have some type of statutory authority to impose a lien on property. The Commission has authority to adopt a rule allowing the Commission to place a lien but it could not be retroactive to apply to this situation.

Mr. Baune moved, seconded by Mrs. Murphy:

THAT THE OIL AND GAS CONSERVATION COMMISSION SIGN THE LETTER TO THE ATTORNEY GENERAL THAT WAS PREPARED AT THEIR REQUEST IN THEIR MEETING OF JULY 6, 1992, AND THAT MS. KAREN CLARK PURSUE “WHATEVER” MEANS NECESSARY TO HAVE THE TWO GEOTHERMAL WELLS PLUGGED AND ABANDONED AND THAT SHE ADVISE MR. RAUZI OF PROGRESS IN THIS REGARD BY JANUARY 1, 1993

Motion carried unanimously.

With respect to the complaint on the Contender well near Yuma, Ms. Clark reported that she could not find the affidavit of Ms. Kate Mead, which is referenced in the complaint, and that a litigation request form, which needs to be filed when litigating for an agency, had not been filed with her superiors. She will contact Ms. Mead about the affidavit, file a litigation request form, and will report on this issue by January 1, 1993.

CALL TO THE PUBLIC

Dr. Fellows discussed drilling companies being registered with the Registrar of Contractors; logging companies being registered with the Radiation Regulatory Agency; and our responsibility to notify federal, state, and local governments when a permit to drill is issued. Mr. Rauzi noted that we send a copy of approved applications to the Bureau of Land Management, the State Land Department, and several scouting companies. As for local governments, the Commission thought it would be appropriate for us to advise the operator to notify them when drilling near urban or incorporated areas. The Commission noted that our permit to drill expressly states that a well must be drilled in full compliance with all applicable laws, statutes, rules and regulations of the State of Arizona and that it was the responsibility of the operator to have subcontractors register
Oil and Gas Conservation Commission Minutes  October 23, 1992  Page 5

or notify the appropriate state agencies.

ANNOUNCEMENTS

The next meeting was scheduled for March 12, 1993. Mr. Ruzzi noted that election of new officers will be on the agenda for the next meeting.

ADJOURNMENT

Mr. Veale moved, seconded by Mrs. Murphy:

THAT THE MEETING BE ADJOURNED.

Motion carried unanimously. Time of adjournment was 12:25.

APPROVED

\[\text{Signed}\]

Mrs. Jan C. Wilt
Chairperson

GUESTS IN ATTENDANCE:

Karen Clark  Attorney General’s Office
TO: Oil and Gas Conservation Commissioners
FROM: Steven L. Ruzzi, Oil and Gas Program Administrator
DATE: February 26, 1993
SUBJECT: Activity Report

No permits to drill have been issued since your last meeting. However, Merrion Oil and Gas Company has recompleted one of their wells in the East Boundary Butte Field. They plugged the zones that were open in the Pennsylvanian and opened a zone in the underlying Mississippian. This zone produced 1.66 million cubic feet of gas a day and they may permit an additional well to get a handle on potential reserves.

Agenda item 5 is for discussion and adoption of the 3rd set of rules. The Governor’s Regulatory Review Council approved this set of rules on January 5 and they were published in the January 29 issue of the Arizona Administrative Register. As of this writing, we have not received any written comments on this set of rules. The concise explanatory statement for these rules is enclosed and I will have the paperwork ready for you to adopt the rules and initiate the certification process.

Elizabeth Stewart of the Attorney General’s Office called on February 10 to report that she was going to recommend certification of the rules that you adopted on July 6, 1992. However, she pointed out that R12-7-193 and R12-7-195 provide for authority that you have by statute and advised that you repeal these two rules. The two rules and her comments are enclosed. This issue is agenda item 6 and I will have the paperwork ready for you to initiate the repeal process.

The WESTMARC draft legislation was not introduced in the first regular session of the 41st legislature. However, Representative Overton responded to Chairman Wilt’s letter of February 4 and his response is enclosed. I informed Mr. Ivan Godlie (retired Kerr-McGee Executive) of the proposed draft legislation on January 13 and sent him a copy at his request. This issue is agenda item 7.

As I reported to you in my letter of January 8, Ms. Diane Hinton of the Attorney General’s Office will be present to report on the Contender Oil well near Yuma and the two geothermal wells near Higley. This issue is agenda item 8.

In early December, I had a report that Chaska had drilled a new well at Black Rock. Dr. Nations contacted the Navajo Minerals Department and learned that they had not. He suggested the Commission consider another meeting with the Navajo Nation Minerals Department. This issue is agenda item 9.

Finally, agenda item 10 is election of officers. In the last election, on February 1991, officers were elected for a term of two years. It has now been two years.
Jan C. Wilt, Chairman
Oil & Gas Conservation Commission
845 North Park Avenue, Suite 100
Tucson, Arizona 85719

Re: A.G. Rule No. R92-076

Dear Chairman Wilt:

We have reviewed the above-referenced rule adopted by the Arizona Oil & Gas Conservation Commission on July 6, 1992. We have determined that the rule is in proper form, is clear, concise and understandable, within the power of the agency to adopt and within legislative standards, and was adopted in compliance with appropriate procedures.

Accordingly, pursuant to A.R.S. § 41-1041, I have affixed my certification to the original Form R102 and have forwarded it together with the original rule and concise explanatory statement and two copies of each to the Secretary of State.

We have enclosed a copy for your reference.

Sincerely,

[Signature]
Grant Woods
Attorney General

GW:EJS:jsk
Enclosure
CONCISE EXPLANATORY STATEMENT
Title 12, Chapter 7, Article 1: Oil, Gas, and Helium, and Geothermal Resources

1. The Oil and Gas Conservation Commission, pursuant to A.R.S. § 27-516.A, has adopted the following rules, as amended, to regulate the completion, testing, operation, plugging, and abandonment of class II storage-wells and wells drilled for oil, gas, and geothermal resources. These rules prevent waste, protect the public's health and safety and the environment, and ensure the conservation and maximum recovery of these resources. A brief description and the specific statutory authority for each rule is as follows:

<table>
<thead>
<tr>
<th>RULE NO.</th>
<th>BRIEF DESCRIPTION</th>
<th>A.R.S. AUTHORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>R12-7-101</td>
<td>Definitions</td>
<td>27-516; 27-656</td>
</tr>
<tr>
<td>R12-7-119</td>
<td>Well &amp; lease equipment</td>
<td>27-503.B(3),(4); 27-516.A(1)(c),(d),(e),(f); 27-656</td>
</tr>
<tr>
<td>R12-7-120</td>
<td>Fire, leaks, and blowouts</td>
<td>27-503.A; 27-503.B; 27-516.A(6),(7); 27-652</td>
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<tr>
<td>R12-7-121</td>
<td>Well completion</td>
<td>27-516.A(2); 27-522.B; 27-656</td>
</tr>
<tr>
<td>R12-7-122</td>
<td>Recompletion</td>
<td>27-516.A(2),(9); 27-652; 27-655; 27-656</td>
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<tr>
<td>R12-7-125</td>
<td>Temporary abandonment</td>
<td>27-516.A(1),(4),(6); 27-656.A</td>
</tr>
<tr>
<td>R12-7-126</td>
<td>Intention to plug</td>
<td>27-516.A(1); 27-656</td>
</tr>
<tr>
<td>R12-7-127</td>
<td>Plugging methods</td>
<td>27-516.A(1); 27-656</td>
</tr>
<tr>
<td>R12-7-128</td>
<td>Stratigraphic and seismic holes</td>
<td>27-501(21); 27-656</td>
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<tr>
<td>R12-7-129</td>
<td>Convert to water well</td>
<td>27-516.A(1); 27-656</td>
</tr>
<tr>
<td>R12-7-175</td>
<td>Underground injection</td>
<td>27-516.A(20); 27-656.A</td>
</tr>
<tr>
<td>R12-7-176</td>
<td>Permit for injection well</td>
<td>27-516.A(20); 27-516.B; 27-517; 27-652; 27-656</td>
</tr>
<tr>
<td>R12-7-177</td>
<td>Casing of injection</td>
<td>27-516.A(20); 27-656</td>
</tr>
<tr>
<td>R12-7-178</td>
<td>Injection operations</td>
<td>27-515.B(3); 27-516.A(2),(8),(20); 27-653; 27-656</td>
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<tr>
<td>R12-7-179</td>
<td>Testing &amp; monitoring of injection</td>
<td>27-503.B(6); 27-516.A(20); 27-653</td>
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<tr>
<td>R12-7-180</td>
<td>Storage wells</td>
<td>27-516.A(20); 27-516.B; 27-517</td>
</tr>
<tr>
<td>R12-7-181</td>
<td>Storage well design &amp; construction</td>
<td>27-516.A(20)</td>
</tr>
<tr>
<td>R12-7-182</td>
<td>Storage well operation</td>
<td>27-516.A(20)</td>
</tr>
</tbody>
</table>

After reviewing these rules pursuant to A.R.S. § 41-1054, the Oil and Gas Conservation Commission (1) repealed A.A.C. R12-7-177 because it is redundant with R12-7-110 and R12-7-111, repealed Appendix 1 in Article 1 because all reference to it has been removed, and repealed Article 2,
CONCISE EXPLANATORY STATEMENT

Title 12, Chapter 7, Article 1: Oil, Gas, and Helium, and Geothermal Resources

Page 2

Geothermal Resources because Article 2 has been fully integrated into Article 1, (2) adopted R12-7-125 to regulate temporary abandonment of wells, adopted R12-7-175 to classify injection wells consistent with federal EPA definitions, adopted R12-7-182 to regulate the operation, inspection, and closure of storage-well systems, and (3) amended the title of Article 1 to reflect the integration of language that covers geothermal resources and amended A.A.C. R12-7-101, R12-7-119 through R12-7-122, R12-7-126 through R12-7-129, R12-7-176, and R12-7-178 through R12-7-181 to remove definitions repeated in statute or not used, update and clarify language, edit for consistency and grammatical accuracy, remove gender-specific terminology, account for currently accepted practices in the regulated industry, and incorporate language to include geothermal resources.

2. No written comments were received on this group of rules after they were approved by the Governor's Regulatory Review Council on January 5, 1993, and after they were published in the January 29, 1993, issue of the Arizona Administrative Register. As a result, there is no change in the text of the proposed rules contained in the notice of proposed rule adoption filed with the Secretary of State on January 13, 1993, pursuant to §41-1022 and the text of the rules as finally adopted by the Oil and Gas Conservation Commission.

3. Arguments for these rules are (1) they require operators to install and maintain wellhead and lease equipment to measure production and prevent hazards, (2) they require operators to submit proposed procedures to the Commission for approval before a well is plugged and abandoned or converted to a water well and to submit well logs, reports, and samples to the Commission upon the completion of a well, (3) they require operators to meet unique construction, operation, and reporting requirements for Class II injection wells including disposal, storage, and enhanced recovery wells, and (4) they prevent waste, protect the public's health and safety and the environment, and ensure the conservation and maximum recovery of oil, gas, and geothermal resources. No arguments were received against this set of rules.

Dated this 12th day of March 1993.

OIL AND GAS CONSERVATION COMMISSION

Jan C. Wilt
Chairman
CERTIFICATION OF RULES AND ORDER OF RULE ADOPTION

State of Arizona
State Capitol, West Wing, Suite 706
Phoenix 85017

The Office of The Secretary of State

FOR USE BY SECRETARY OF STATE

OIL & GAS CONSERVATION COMMISSION (ARIZONA GEOLOGICAL SURVEY)

STEWART T. RAZZI
843 N PARK AVE., STE 100,
TUCSON, AZ 85719 PHONE (602) 522-4795

GENERAL AND SPECIFIC STATUTORY AUTHORITY FOR PROPOSED RULE MAKING:
A.R.S. § 27-501 to 27-503, 27-515

Date Published in Administrative Register: January 29, 1993

Vol. 93 Page 16415

Date Rules Adopted by Agency

03 12 93

03 12 93

03 12 93

03 12 93

REPEALED A.A.C. R12-7-177, Appendix I in Article I, and Article 2 Geothermal Resources (R: 2-7-201 through R12-7-294)

ADOPTED A.A.C. R12-7-125, R12-7-175, and R12-7-182

AMENDED A.A.C. R12-7-101, R12-7-119 to R12-7-122, R12-7-126 to R12-7-129, R12-7-176, and R12-7-178 to R12-7-181

RENUMBERING EXISTING RULES A.A.C. R12-7-181(1)(h) through (1)(m) as R12-7-182

INFORMATION BY REFERENCE

A.A.C. Rule Numbers

Note

Check if these rules were previously adopted as an emergency.

Check if change in text.

Check the applicable items for effective date:

Date filed with the Office of the Secretary of State

Other (pursuant to A.R.S. § 24-1073)

(Certification or rejection by the Attorney General)

A.G. Rule No. __________________________

Approved _____________ Rejected _____________

this ______ day of _____________, 19

Signature of Officer

Title

Telephone

Name (Typed) of Officer Date

Attorney General

Rev. 1/93 Form 102
R12-7-193. Written notices, requests, permits and reports

The Commission may adopt such forms of notices, requests, permits and reports as it may deem advisable or necessary in carrying out the provisions of law and its rules and regulations.

R12-7-195. Additional information may be required

These rules shall not be taken or construed to limit or restrict the authority of the Commission to require the furnishing of such additional reports, data or other information relative to production, transportation, storing, refining, processing, or handling of oil, gas, geothermal resources, or their products in the State of Arizona as may appear to be necessary or desirable, either generally or specifically, for the prevention of waste and the conservation of oil, gas, and geothermal resources.

Elizabeth Stewart (AG Office) called 2-10-93 and discussed the 1st set of rules to be certified. They will recommend certification. However, R12-7-193 and R12-7-195 are unnecessary. This authority is provided by statute (A.R.S. 27-516.A) and the adoption of new rules must be carried out in conformance with the APA (administrative procedures act). She will recommend certification on the first set but advised that you consider the repeal of these two rules. SLR
Notice of Proposed Rulemaking
Submitted to the Governor's Regulatory Review Council

Pursuant to A.R.S. § 41-1052

1. Name of Agency: Oil and Gas Conservation Commission (Arizona Geological Survey)

2. Rules Being Submitted to the Governor's Regulatory Review Council:
   A. Repealed: R12-7-193 Written notices, requests, permits, and reports
      R12-7-195 Additional information may be required
   B. Adopted: None
   C. Amended: None
   D. Renumbered: None

3. Summary of Rules:
   R12-7-193 describes notices, requests, permits, and reports
   R12-7-195 describes when additional information may be required
   These rules are redundant with authority provided to the Commission by statute and are therefore unnecessary

4. Date of Governor's Regulatory Review Council meeting at which rules are tentatively scheduled to be heard: June 1, 1993

5. Agency Contact Person:
   Name: Steven L. Rauzi, Oil and Gas Program Administrator, Arizona Geological Survey
   Address: 845 North Park Ave #100, Tucson AZ 85719
   Telephone Number: (602) 882-4795

6. Authorized Officer:
   [Signature]
   Name of Officer: Jan C. Wile
   [Signature]
   Name of Officer (Typed): Jan C. Wile
   Title of Officer: Chairman, OGCC
   Date: 7/12/93
   [Typed]
   Copy
# NOTICE OF PROPOSED RULE MAKING

**State of Arizona**  
Secretary of State  
The Office of The Secretary of State

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<table>
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<tbody>
<tr>
<td><strong>Name of Agency</strong></td>
<td>OIL &amp; GAS CONSERVATION COMMISSION (ARIZONA GEOLOGICAL SURVEY)</td>
</tr>
<tr>
<td><strong>Agency contact person (name, address, phone)</strong></td>
<td>STEVEN L. RAIZZI, 845 N PARK AV, TUCSON AZ 85719, PHONE: (502) 882-6795</td>
</tr>
<tr>
<td><strong>General and Specific Statutory Authority for proposed rule making:</strong></td>
<td>A.R.S § 27-502, 27-503, and 27-116, A(19)</td>
</tr>
</tbody>
</table>

- **Check and complete applicable items below to show proposed rule making (show A.A.C. Rule Numbers):**
  - [X] REPEAL (deleting existing rules) A.A.C. R12-7-193 and R12-7-195
  - [ ] ADOPT (new rules)
  - [ ] AMEND (changing existing rules)
  - [ ] RENUMBER EXISTING RULES

- **Incorporation by Reference**
  - Yes  
  - No  
  
- **Check the following required items to show that they are included in this document:**
  - [X] Form R101, an original and two copies of the Form and each attachment.
  - [X] Economic impact statement.
  - [X] Statement of impact on small business.
  - [ ] Three copies of incorporation by reference.

- **Check if these rules were previously adopted as an emergency.**
  - [ ] Check if change in text.

**NOTICE** is given that any person may file written comments on the proposed rule making with the agency contact person on or before [ ]

- **The agency has scheduled oral proceedings to be held at**
  - Address  
  - City  
  - State  
  - Zip Code  
  - Date  

- **The agency has not scheduled oral proceedings but will do so if five or more persons file written requests with the agency contact person within thirty days after this Notice is published in the Administrative Register.**

**Certificate of Authorized Officer**

**Signature of Officer**

JAN C. WILT  
Telephone: 882-6795

**Chairman GCCC**

Date: 3/12/93

---

Rev. 11/93 Form R101
INFORMATIVE SUMMARY

The Oil and Gas Conservation Commission proposes to repeal A.A.C. R12-7-193 which states that the Commission may adopt certain forms of notices, requests, permits, and reports, and R12-7-195 which states that certain additional information may be required. These rules are not necessary because this authority is provided by statute.
TITLE 12, CHAPTER 7, ARTICLE 1. OIL, GAS AND HELIUM

R12-7-101  Definitions
R12-7-102  General rules applied statewide
R12-7-103  Bond
R12-7-104  Application for permit to drill
R12-7-105  Change of location
R12-7-106  Identification of wells
R12-7-107  Spacing of wells
R12-7-108  Pit for drilling mud and drill cuttings
R12-7-109  Sealing off strata
R12-7-110  Surface casing requirements
R12-7-111  Casing and tubing requirements
R12-7-112  Defective casing or cementing
R12-7-113  Blowout prevention
R12-7-114  Pulling outside strings of casing
R12-7-115  Deviation of hole
R12-7-116  Multiple zone completions
R12-7-117  Artificial stimulation of wells
R12-7-118  Safety regulations
R12-7-119  Well and lease equipment
R12-7-120  Fire, leaks and blowouts
R12-7-121  Well completion
R12-7-122  Rework and recompletion - shooting and treating
R12-7-126  Intention to plug and abandon
R12-7-127  Plugging methods and procedures
R12-7-128  Stratigraphic exploratory holes
R12-7-129  Wells to be used for fresh water
R12-7-133  Gas-oil ratio and potential tests
R12-7-136  Subsurface pressure tests and reservoir surveys
R12-7-137  Commingling of production from pools
R12-7-138  Casinghead gas
R12-7-139  Use of vacuum pumps
R12-7-140  Pollution, surface damage, and noise abatement
R12-7-142  Measurement of oil
R12-7-143  Oil tanks, fire wells, and fire hazards
R12-7-150  Capacity tests of gas wells and geothermal wells
R12-7-151  Measurement of gas from gas wells and geothermal resources
R12-7-152  Utilization of gas
R12-7-153  Non-hydrocarbon gas
R12-7-160  Regulation of production
R12-7-161  Producer’s monthly report
R12-7-176  Permit for injection and disposal
R12-7-177  Casing and cementing of injection wells
R12-7-178  Notice of commencement and discontinuance of injection operations
R12-7-179  Records and reports
R12-7-180  Storage wells
R12-7-181  Storage cavity design and construction
R12-7-183  Certificate of compliance and authorization to transport
R12-7-184  Recovered liquid oil
R12-7-185  Transporter’s and storer’s monthly report
R12-7-186  Gas or geothermal purchaser’s monthly report
R12-7-188  Refinery reports
R12-7-190  Gasoline plant reports
R12-7-192  Books and records to substantiate reports
R12-7-193  Written notices, requests, permits and reports
R12-7-194  Organization reports
R12-7-195  Additional information may be required
R12-7-199. Producers’ reports
A person who is the owner, or who has the control or management of any refinery or processing plant in the state shall keep at his office or place of business in the state a daily record of:
1. All oil and gas received into the refinery or processing plant.
2. The names and addresses of the persons from whom the oil and gas was received.
3. The quantity and quality of the oil and gas received from each person.
4. Each disposition of a product obtained from refining or processing the oil and gas.

Historical Note
Former Rule 902; Amended effective September 29, 1982 (Supp. II-5).

R12-7-199. Gasoline plant reports
Each operator of a gasoline plant, cycling plant, or any other plant at which gasoline, butane, propane, condensate, kerosene, oil or other liquid products are extracted from gas within the state, shall furnish for each calendar month a “Gasoline Plant or Pressure Maintenance Plant Monthly Report” (Form 21, see Appendix) containing the information indicated by such form respecting gas and products involved in the operation of each plant during each month. Each report shall be filed with the Commission on or before the 22nd day of the next succeeding month.

Historical Note
Former Rule 905; Amended effective September 29, 1982 (Supp. II-5).

R12-7-191. Reserved

R12-7-191. Books and records to substantiate reports
Each operator, producer, transporter, storero, refiner, gasoline or extraction plant operator, and initial purchaser of oil and gas within the state shall keep and keep appropriate books and records for a period of not less than five years that cover his operations in Arizona, from which he may be able to make and substantiate the reports required by the Commission.

Historical Note
Former Rule 1001; Amended effective September 29, 1982 (Supp. II-5).

R12-7-193. Written notice, requests, permits and reports
The Commission shall adopt and promulgate rules, permits and reports as it may deem appropriate or necessary in carrying into effect the provisions of this law and its rules and regulations.

Historical Note
Former Rule 1002.

R12-7-194. Organization reports
Every person acting as principal or an agent for another or who is independently engaged in the drilling operation, production, storage, transportation (except by railroad), refining, reclaiming, marketing, processing of, or scientific exploration for oil or gas shall immediately file with the Commission on the form “Organization Report” (Form 1, see Appendix) a statement under oath giving the following information: the name under which such business is being operated or conducted, the name and post office address of each person and the business address in which he is engaged; the plan or organization, and, if a reorganization, the name and address of the previous organization; the state where incorporated, if a foreign corporation, and the name and post office address of the Arizona agent, together with the date of permit to do business in Arizona, the names and addresses of the principal officers or partners and the names and addresses of the directors thereof. Immediately after any change occurs, as to facts stated in the report filed, a supplementary report (Form 1, see Appendix 1A11A) shall be immediately filed with the Commission with respect to such change.

Historical Note
Former Rule 1003.

R12-7-195. Additional information may be required
These rules shall not be taken or construed to limit or restrict the authority of the Commission to require the furnishing of such additional reports, data or other information relative to production, transportation, storing, refining, marketing, or handling of oil, gas or their products in the state of Arizona in any manner as may appear to be necessary or desirable, either generally or specifically, for the prevention of waste and the conservation of oil and gas resources.
OIL AND GAS CONSERVATION COMMISSION
REPEAL OF A.A.C. R12-7-193 AND R12-7-195
ECONOMIC IMPACT STATEMENT
STATEMENT OF IMPACT ON SMALL BUSINESS

I. Description and Purpose of the Proposed Repeal

The repeal of R12-7-193 and R12-7-195 is proposed because these two rules restate authority provided by statute. These rules do not give the Commission authority to adopt certain forms of notices and require additional information, they simply state that the Commission has that authority, which authority is provided by statute, not by rule. They are therefore redundant with statute and serve no useful purpose.

II. Need and Predicted Accomplishments (Including Alternatives)

The repeal of these two rules will remove unnecessary language from Title 12, Chapter 7, Article 1. This will accomplish two things, it will reduce printing costs and free up two section numbers for future use. The only alternative would be to retain the rules in Chapter 7. There is no purpose served in continuing to print two unnecessary rules.

III. Estimate of Costs and Benefits of Enforcement and Implementation
  (summarized in chart, attachment A)

The repeal of these two rules will reduce printing costs to the Secretary of State by removing unnecessary language from Chapter 7. There will be no change in enforcement of remaining rules and there is nothing new to implement.

IV. Statement of Impact of Repeal on Small Business

(Pursuant to A.R.S. §41-1001(14), the definition used for a small business is one that is independently owned and operated, not dominant in its field, and which has fewer than 100 full-time employees, or which grosses less than 4 million dollars in a single year.)

Based on the above definition, most operators in Arizona are small businesses. However, the repeal of these two rules will have no impact on small businesses because no new rules are being adopted and no existing rules are being amended.

V. Less costly/intrusive methods; alternatives

All alternatives considered have been discussed earlier in Part II, Need and Predicted Accomplishments.
## ATTACHMENT A

### SUMMARY OF MAJOR COSTS AND BENEFITS
(Repeal of R12-7-193 and R12-7-195)

<table>
<thead>
<tr>
<th>Description of Group Affected</th>
<th>Description of Effect</th>
<th>Increased Costs/ Decreased Revenues</th>
<th>Decreased Costs/ Increased Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Impact costs: Minimal &lt; $1000; Moderate $1000 - $5000; Substantial &gt; $5000</td>
<td></td>
</tr>
</tbody>
</table>

### A. Agency / Political Subdivision

- **Arizona Geological Survey Oil and Gas Program**
  - Staff (1.5 FTE) time is required to prepare economic impact statement.
  - Minimal
  - None

- **Oil and Gas Conservation Commission**
  - Additional open meetings may be required to approve repealed rules.
  - Minimal
  - None

### B. Other State Agencies / Political Subdivisions

- **OSPB**
  - Review of repealed rules.
  - Some printing and administrative costs.
  - Minimal
  - None

- **GRRC**
  - Consideration of repealed rules.
  - Minimal
  - None

- **Secretary of State**
  - Printing and administrative costs.
  - Minimal
  - None

- **Attorney General**
  - Certification of repealed rules.
  - Minimal
  - None

### C. Other

- **Regulated industry**
  - No effects identified
  - None
  - None

- **The general public**
  - No effects identified
  - None
  - None
A.R.S. § 27-502. Declaration of Policy

A. It is the public policy of the state to:
1. Conserve the natural resources of oil and gas and products thereof.
2. Prevent waste of oil and gas resources.
3. Provide for protection and adjustment of correlative rights of owners of land wherein the natural resources lie and of owners and producers of oil and gas resources and products thereof, and of others interested therein.
4. Encourage development of natural resources of oil and gas and their products.
5. Encourage continuous and economic supply thereof and demand therefor.
6. Safeguard the health, property and public welfare of citizens of the state and other interested persons.
7. Promote all purposes indicated by the provisions of this article.

B. This article shall be administered by the oil and gas conservation commission.

C. The legislature finds and declares that oil and gas in commercial quantities have now been discovered and are being produced within this state.

As amended Laws 1969, Ch. 112, § 2.

A.R.S. § 27-503. Waste of oil or gas prohibited; powers of commissioner to prevent waste

A. Waste of oil or gas is unlawful and is prohibited.
B. The commissioner shall make inquiries he deems proper to determine whether waste exists or is imminent. In the exercise of such power the commissioner may:
1. Collect data.
2. Make investigations and inspections.
3. Examine property, leases, papers, books and records, including drilling records and logs.
4. Examine, check, test and gauge oil and gas wells, tanks, refineries and modes of transportation.
5. Hold hearings.
6. Require keeping of records and making of reports.
7. Take action he deems necessary to enforce and effectuate the provisions of this article.
C. The commissioner may in order to prevent waste and avoid drilling unnecessary wells, permit the cycling of gas in any pool or portion thereof or the introduction of gas or other substance into an oil or gas reservoir for the purpose of repressuring the reservoir, maintaining pressure or carrying on secondary recovery operations of any type. The commissioner shall permit the pooling or integration of separate tracts when reasonably necessary in connection with the operations.

1955
A.R.S. § 27-516. Rules and regulations

A. The commission shall make rules and amend them as deemed necessary for the proper administration and enforcement of this article, including the following rules, regulations and orders:

1. Requiring the drilling, casing and plugging of wells in a manner to prevent:
   (a) Escape of oil and gas from one stratum to another.
   (b) Infiltration of water into an oil or gas stratum from a separate stratum.
   (c) Pollution of fresh water supplies by oil, gas or salt water.
   (d) Waste.

2. Requiring reports showing the location of oil and gas wells and requiring filing of logs and drilling record within thirty days from the completion of a well drilled for oil or gas.

3. Requiring a reasonable bond with good and sufficient surety conditioned on the performance of the duties prescribed in paragraphs 1 and 2 of this subsection including the obligation to plug each dry or abandoned well.

4. Preventing drowning by water of any stratum or part capable of producing oil or gas in paying quantities and preventing the premature and irregular encroachment of water which reduces or tends to reduce the total ultimate recovery of oil or gas from any pool.

5. Requiring the operation of wells with efficient gas-oil ratio and fixing the limits of such ratios.

6. Preventing blow-outs, caving and seepage.

7. Preventing creation of unnecessary fire hazards.

8. Requiring identification of ownership of oil and gas wells, producing leases, refineries, tanks, plants, structures and storage and transportation equipment and facilities.

9. Regulating shooting, perforating and chemical treatment of wells.

10. Regulating gas cycling operations.

11. Regulating secondary recovery methods, including introduction of gas, air, water or other substance into producing formations.

12. Regulating spacing of wells and establishing drilling units.

13. Limiting, allocating and apportioning production of oil and gas from a pool or field for prevention of waste, and allocating production between tracts of land under separate ownership in a pool on a fair and equitable basis so that each tract will be permitted to produce not more than its just and equitable share from such pool.

14. Preventing, so far as practicable, reasonably avoidable drainage from each developed unit, not equalized by counterdrainage.

15. Requiring a producer of oil or gas to submit for each oil or gas well operated, on a form prescribed by the commission, a monthly report of actual production from each oil or gas well. Such report shall be submitted on or before the twenty-fifth day of the next succeeding month.

16. Requiring persons making settlement with the owner of oil or gas interests to render statements to the owner showing the quantity and gravity purchased and the price per barrel of oil or the price per one thousand cubic feet of gas.

17. Requiring, either generally or in a particular area, a certificate of clearance for transportation or delivery of oil, gas or any product.

18. Requiring the applicant for a drilling permit, if the surface of the land is owned by another not in a contractual relationship with the applicant, to post bond in a reasonable sum with good and sufficient surety conditioned on payment of just compensation to the landowner for actual damages to the surface of or improvements on the land caused by the drilling permittee’s operations.

19. Requiring all forms and reports requested by the commission to be submitted to the commission on or before the twentieth day of the next succeeding month for monthly reports or within twenty days following the completion of the action requiring the report, except as otherwise provided by
the commission.

20. Requiring the permitting of all wells and the approval of all equipment and methods:
   (a) To create or use existing storage space for the underground storage of hydrocarbon
       substances, whether liquid or gaseous.
   (b) Used for the injection of any substance into geological strata for the purpose of pressure
       maintenance or for the purpose of increasing ultimate recovery.
   (c) Used for the purpose of secondary and tertiary recovery.
   (d) Used for the disposal of any substance.

B. No rule, regulation or order, or change, renewal or extension, except as otherwise
   provided by this article, shall, in the absence of an emergency, be made by the commission under the
   provisions of this article except after a public hearing of which not less than ten days’ notice has been
   given. The public hearing shall be held at such time and place as may be prescribed by the commission,
   and any interested person shall be entitled to be heard. Notice shall be given by personal service, by
   publication or by United States mail, addressed, postage prepaid, to the last known mailing address of
   the person or persons affected. The date of service shall be the date on which service was made in the
   case of personal service, the date of first publication in the case of notice by publication and the date of
   mailing in the case of notice by mailing. The notice shall issue in the name of the state, and shall be
   signed by a member of the commission or its deputy, shall specify the style and number of the
   proceeding, the time and place of the hearing and shall briefly state the purpose of the proceeding.
   Should the commission elect to give notice by personal service, such service may be made by an officer
   authorized to serve process or by the commission in the same manner as is provided by law for the
   service of process in civil actions in the courts of this state. Proof of service by the commission shall
   be by the affidavit of the commission or its authorized representative making personal service. If service
   is made by the sheriff, the proof of service shall be as required by law for service of process in civil
   actions. If the matter to be heard concerns the adoption, amendment or repeal of a regulation of general
   applicability, notice shall be by publication.

C. If an emergency is found by the commission to exist, which in its judgment requires
   making, changing, renewing or extending a rule, regulation or order without first having a hearing, the
   emergency rule, regulation or order shall have the same validity as if a hearing had been held after due
   notice. The emergency rule, regulation or order shall remain in force not to exceed thirty days from its
   effective date but shall expire when a rule, regulation or order with respect to the subject matter of the
   emergency rule, regulation or order becomes effective after due notice and hearing.

Amended by Laws 1978, Ch. 113, § 2.
February 26, 1993

Mr. Bill Bates  
Public Works Director  
City of Avondale  
525 North Central Avenue  
Avondale, Arizona 85323

Dear Mr. Bates:

The Oil and Gas Conservation Commission has scheduled discussion of the draft legislation submitted on behalf of WESTMARC Water Resources Committee at our next meeting on March 12, 1993. We welcome your attendance at this meeting to express your views.

The meeting will begin at 10:00 a.m. in room 500, State Capitol, Executive Tower, 1700 West Washington. An agenda is enclosed.

Sincerely,

[Signature]

Mrs. Jan C. Wilt  
Chairman, Oil and Gas Conservation Commission

Enclosure

[To: Representative John Keegan  
Representative Ned King  
Representative Jerry Overton  
Senator Warren Austin Turner  
Perry Hubbard, Mayor of Litchfield Park]
Arizona House of Representatives
Phoenix, Arizona 85007

February 12, 1993

Ms. Jan C. Wilt
Chairman, Oil and Gas
Conservation Commission
Arizona Geological Survey
845 North Park Avenue, #100
Tucson, Arizona 85719

Dear Ms. Wilt:

Thank you for a copy of your letters to Representative John Keegan dated February 4, 1993. I am very close to this situation as I was involved in the protest action against the Sun-Cor well next to Litchfield Park. The Sun-Cor well did point out a problem with your well site approval process and prompted the Avondale draft legislation. I have discussed this with Mr. Larry Fellows.

I agree that the draft legislation is somewhat "like killing a fly with a cannon," but I still believe the fly needs to be killed.

The major problem, which may be a rare one in Arizona but needs to be addressed, is the approval to drill a well in or near an urban community. Possibly your commission could adopt rules regarding a public notice and hearing if a well is to be drilled within x miles of a community.

Such action on your part would preclude the need for legislation.

Very truly yours,

Jerry Overton
State Representative
District 15

JO/oz

He's never tried a cannon vs. a fly...
but I have tried using a 22...
I find a .22 caliber to work extremely well in relation to flies!
Ms. Jan C. Wilt  
Chairman, Oil and Gas  
Conservation Commission  
Arizona Geological Survey  
145 North Park Avenue, #100  
Tucson, Arizona 85719

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Such action on your part would preclude the need for legislation.

Very truly yours,

Jerry Overton  
State Representative  
District 15
The Honorable John Keegan
Arizona House of Representatives
1700 West Washington
Phoenix, Arizona 85007

Re: Draft Legislation, Oil and Gas Drilling Permits

Dear Representative Keegan:

The Arizona Oil and Gas Conservation Commission (OGCC) has reviewed the draft amendment to A.R.S. §27-513 submitted by the WESTMARC Water Resources Committee and Bill Bates of Avondale.

This proposed legislation would duplicate regulations presently in force that have been carefully designed to protect the water resources and health and safety of Arizona citizens. Requiring an additional permit from another agency is a waste of taxpayer money, especially when present OGCC regulations are very stringent and back up those rules with rigorous enforcement and experienced staff.

The suggested bond of one hundred percent of construction costs or one million dollars is hardly reasonable when compared with bonds required in other states. California requires $10,000 to $25,000 depending on depth, New Mexico $5,000 to $12,500, Utah $10,000 to $40,000, and Nevada requires $10,000 per well. During our recent review of our rules, the OGCC increased the bond requirements to $10,000 for oil and gas wells less than 10,000 feet deep and $20,000 for wells deeper than 10,000 feet. These amounts are adequate to plug and abandon a well before the drill rig leaves the site.

Requiring an excessively high bond would have the effect of eliminating oil and gas drilling in Arizona, would dry up state revenues from lease sales for exploration, and would eventually reduce taxes from producing wells as no new ones would be drilled or come into production.

No public notice or public hearing is required prior to issuance of a permit to drill oil and gas wells in California, New Mexico, Utah or Nevada. However, during the process of granting a permit to drill, the Arizona Geological Survey (AZGS) staff routinely contacts the Arizona Department of Water Resources to determine the depth of groundwater and the location of water wells in the vicinity of a proposed exploration well. This information is used to design a well-construction program that protects groundwater. The operator is advised that a general use permit is required from the Arizona Department of Environmental Quality before constructing a reserve pit.
Representative Keegan  
February 4, 1993  
Page 2

The OGCC and the staff at the AZGS regularly make every effort to cooperate with other governmental agencies in all matters of mutual concern. If there is any dissatisfaction with the OGCC in this regard, we would like to be informed so that we can communicate more effectively.

Understanding the careful way in which the OGCC protects the water resources of the state in any oil and gas drilling operation and production would put many of the concerns to rest which probably led to the request for this draft legislation. We and the AZGS staff are happy at any time to explain our rules and enforcement policies and we have several publications which spell these out in detail. The enclosed article from Arizona Geology is an example of the efforts we are pursuing to educate Arizona's citizens about the procedures followed in the permitting and drilling of an exploration well.

The expertise and experience of the AZGS staff with respect to oil and gas drilling and production are a primary reason to keep all aspects of oil and gas regulations under the regulatory authority of the OGCC. Staff whose principal job is oil and gas regulation are more knowledgeable about the technical aspects of the industry procedures and have the motivation and capability for immediate response. When a well needs to be plugged or some other procedure witnessed, the drilling operator cannot afford to wait. The AZGS staff responds immediately, day or night, weekend or holiday, because we take seriously our responsibility to regulate oil and gas well drilling in Arizona.

We hope you will carefully consider our opposition to this draft legislation. The proposed new requirements are not only unnecessary, but would also have a negative effect on the state's revenues in the long term. The current rules and regulations are quite stringent and perfectly adequate to protect groundwater. There is no justification for changing the law to add additional layers of bureaucracy.

Sincerely yours,

Jan C. Wilt  
Chairman, Oil and Gas Conservation Commission

Enclosure

cc  
Representative Ned King  
Representative Jerry Overton  
Senator Lima Pena  
Senator Peter Rios  
Senator Warren Austin Turner  
Larry D. Fellows, Director, AZGS  
Steven E. Raazi, Oil and Gas Program Administrator, AZGS  
J. Dale Nation, James E. Warne, Jr., Barbara H. Murphy, and Zed Veale, members of the OGCC
EXPLORATION WELL TESTS SALT NEAR PHOENIX

Steven L. Rand
Arizona Geological Survey

In September 1992, Arrowhead Oil and Gas, Ltd., drilled the SunCor-Melange #2-23 well about 20 miles west of Phoenix to test the oil and natural gas potential of a deeply buried deposit of salt near Luke Air Force Base. (Large deposits of subsurface salt and anhydrite are present at several localities in Arizona [Porize, 1981].) The Luke salt is at least Miocene in age; it is overlain by basalt that has been dated at about 10.5 million years (Eberly and Stanley, 1978). Near the well, the top of the salt deposit lies between 2,500 and 2,600 feet below the surface. The well was drilled to a total depth of 6,650 feet and was completed as a dry hole on September 27, 1992.

The well was drilled in an agricultural and suburban area, which is underlain by a freshwater aquifer that is a primary source of drinking water for nearby communities. Special attention was given to ensure that ground water would not be contaminated during the drilling process. The aquifer in this area is between 400 and 600 feet below the surface, and several water wells produce from it within 0.5 mile of the SunCor-Melange #2-23 well. (The Arizona Geological Survey [AZGS] routinely contacts the Arizona Department of Water Resources for information on the location of water wells and the depth of ground water within 0.5 mile of a proposed exploration well.) The lessor of the oil and gas rights, SunCor Development Corporation, through Litchfield Park Service Company, operates some of these water wells and was therefore especially interested in preventing ground-water contamination.

The procedures used to protect ground water during drilling are based on experience and technology developed over years of drilling in different environments throughout the world. They are employed in both the petroleum and the water-well drilling industries. The most basic method of preventing contamination is zonal isolation, sealing off access to all zones so that salt water, oil, and natural gas, if encountered during drilling, cannot mix with ground water. This is accomplished by circulating a viscous mixture of water and clay called drilling mud in the wellbore (the hole made by the drill bit) to prevent contamination while the well is being drilled. A special pipe called casing is then installed and cemented in the wellbore to prevent contamination after drilling has been completed.

DRILLING

The SunCor-Melange #2-23 well was drilled in two steps: (1) using a freshwater-based drilling mud to a depth just above the salt (about 2,500 feet), where casing was installed and cemented; and (2) using a saltwater-based drilling mud before penetrating the salt to prevent the salt from dissolving, as it would have done if a freshwater-based drilling mud had been used.

As the wellbore is drilled deeper, new joints of drill pipe are added to the drill string (Figure 1). The drill bit is at the bottom of the drill string, which is rotated at the surface. To improve cutting performance, weight is added to the drill string by placing heavy, thick-walled pipe called drill collar just above the bit. Drilling mud is used to cool the drill bit, lubricate the drill pipe, bring cuttings back to the surface, and prevent contamination of the formations being drilled. It accomplishes the last function by forming a thin, impermeable seal of clay particles on the walls of the wellbore. Drilling mud also prevents the hole from caving in and keeps exposed formation fluids from flowing by exerting hydrostatic pressure against its walls.

To ensure these results, an operator must constantly keep the wellbore full of drilling mud during drilling operations. The drilling mud is pumped through the drill pipe to the drill bit at the bottom of the wellbore, after which the mud returns to the surface with the cuttings through the annular space between the drill pipe and the walls of the wellbore.

Figure 1. Roughnecks (workers on a drilling rig) connecting another stand to the drill string, which is being lowered into the wellbore. A stand consists of three joints of drill pipe and is approximately 90 feet in length.

At the surface, the mud is routed across a vibrating screen to remove cuttings, sand, and silt that can interfere with the formation of the impermeable clay seal in the wellbore. The mud is then recycled through the drill pipe.

Casing

The final steps in preventing ground-water contamination in wells are installing casing in the wellbore and cementing it in place (Figure 2). Cementing the casing along its length to isolate each formation penetrated in a well protects ground water, petroleum, and other natural resources by preventing fluid movement between formations. If fluids cannot move from one zone to another, they cannot contaminate each other.

The bottom or shoe of the casing is set in a hard, impermeable formation to provide a strong anchor and seal. In addition, centralizers are installed on the casing in several places to keep it in the center of the wellbore and to allow cement to surround it completely. This casing is then cemented throughout its entire length by pumping the cement slurry down the inside of the casing until all of the slurry exits the bottom and fills the annular space between the casing and the walls of the wellbore. The cement slurry thus extends from the bottom of the wellbore to the land.
surface. Special rubber plugs are commonly added in front of and behind the cement slurry to prevent it from mixing with the mud it displaces and with the mud used to move it into place, respectively. Fresh water is also typically pumped into the wellbore before the cement slurry is added to clean the viscous drilling mud off the wellbore walls.

This cleaning helps establish a more effective cement bond between the casing and the formations along the wellbore walls. The cement prevents fluid movement between formations and supports the weight of the casing.

Once the cement sets, the well is essentially a pipeline from the bottom of the hole to the surface. The wellbore casing is similar to a pipeline that transports natural gas or drinking water into a home, except that the wellbore casing is cemented vertically in place, whereas natural gas and water lines are uncemented and horizontal. Just as a natural gas pipeline confines the gas and prevents it from leaking and contaminating surrounding soil, the wellbore casing confines the fluids traveling within it and prevents them from leaking and contaminating the formations and freshwater aquifers through which it extends.

After drilling to a depth of 2,500 feet, the operator of the SunCor-Melange #2-23 well installed casing in the wellbore. The casing shoe was set just above the salt and just below several beds of hard anhydrite, which provided a strong, impermeable seal (Figure 2). The cemented casing shoe was pressure tested to 1,500 pounds per square inch (psi) and held this pressure for 30 minutes. This proved that the casing had sufficient mechanical integrity to contain the saltwater-based drilling mud and to withstand any unexpectedly high pressures that may have been encountered as the drill bit drilled into the salt.

AZGS staff geologists Steve Rauzi and Rick Trapp were present during the cementing process to ensure that the cement was circulated back to the surface and, thus, that the process was properly completed. An AZGS representative witnessed this process on all oil, natural gas, helium, and geothermal wells drilled in Arizona.

The 1,900 feet of cemented casing beyond the top of the salt and the base of the freshwater aquifer effectively prevented the saltwater-based drilling mud from contaminating the aquifer and would have prevented oil or natural gas contamination had these resources been found and produced. If production had been feasible, the operator would have added another string of casing, called the production string, from the surface to the bottom of the oil or natural gas zone to provide additional protection for both the oil or natural gas and the ground water. No oil or natural gas was discovered, however.

**PLUGGING AND ABANDONMENT**

If no oil or natural gas is discovered in commercial amounts in an exploration well, the well is plugged and abandoned. Information gained while drilling the well is used to plan the plugging operation, which must follow specific regulations that require cement plugs to be placed across certain intervals in the well. In open (uncased) holes, cement plugs are placed across all freshwater zones, any zone containing fluid with a potential to migrate, and any zone containing potentially valuable natural resources. In cased holes, cement plugs are placed across all open perforations, as well as the casing shoe.

The cement plugs are placed by lowering drill pipe to the bottom of the lowest zone to be plugged. The calculated volume of cement is pumped to that zone. The drill pipe is then pulled up to the bottom of the next zone to be plugged. This process is repeated until all of the zones are plugged. The intervals between the cement plugs are filled with a heavy, viscous mud.

In the SunCor-Melange #2-23 well, several cement plugs were placed in the open hole below the casing shoe. Another cement plug was placed 150 feet below the casing shoe up to 100 feet within the casing. Finally, a cement plug was placed inside the casing from a depth of 90 feet up to the ground surface.

**CONCLUSION**

Even though the SunCor-Melange #2-23 well was completed as a dry hole, it provided valuable information on the subsurface geology of Arizona. Each new well, whether completed as a producer or a dry hole, enhances the understanding of Arizona's geologic history. The better geologists understand this history, the better they can explore for, develop, and manage Arizona's natural resources. These resources include not only oil and natural gas, but also ground water.

The subsurface information obtained on all wells drilled for oil, natural gas, helium, and geothermal resources is maintained at the AZGS. This information includes drilling and production data, sample descriptions, drill cuttings and cores, electric and porosity logs, and formation tops. For any oil or gas exploration well drilled in unproven territory, the subsurface data are kept confidential for 1 year after the well is completed. The well operator has exclusive use of these data during this time. After the period expires, however, these data become public information and may be reviewed at the AZGS office by any individual or group during regular working hours.

**REFERENCES**


January 30, 1993

Mrs. Jan C. Wilt, Chairman
Oil and Gas Conservation Commission

Subject: Legislation proposed by Westmarc Water Resources Committee.

Dear Mrs. Wilt,

After serious consideration of the new legislation proposed by the Public Works Director for the City of Avondale to Rep. John Keegan it is felt some comments are in order. First, Mr. Bates' reference to "the inadequacies of the current oil and gas permitting program" is concerning. If there are cases where the present program has been inadequate I am not aware of them. It is my feeling the present program has proved to be quite adequate and effective.

Second, Mr. Bates's proposed new bond requirements to "insure that potential problems could be adequately addressed" do not make much sense. The proposed new requirements not only appear to be unnecessary but might have a negative effect in the overall. For sure the increase would discourage the drilling of oil and gas wells in our state. It would make Arizona one of the most restrictive states in the west. We should encourage more drilling for potential economic benefit.

It is my recommendation that our commission discourage any new legislation. There just isn't any justification for change at this time.

Sincerely,

Zed Veale, member
January 28, 1993

House Wing  
1700 West Washington  
Phoenix, Arizona  85007

Re: Draft Legislation; Oil & Gas Drilling Permits

As a member of the Oil & Gas Conservation Commission, I have reviewed the referenced draft amendment to ARS Sec. 27-513. I am also familiar with the situation whereby the development of the draft found its beginning.

As you know, the OGCC works under the authority of ARS 27-501 through 27-577 and promulgates rules under ARS 27-516. The rules are a part of the Arizona Administrative Code. Under Title 12 (Natural Resources), Chapter 7 will be found R12-7-103, which refers to bonds to be posted for oil and gas drilling permits: $10,000.00 for wells of 10,000 feet in depth or less; and $20,000.00 for wells deeper than 10,000 feet. These bond amounts were recently increased to these levels as recommended by the OGCC only after its diligent consideration of its duties and responsibilities to Arizona, its citizens and environment.

Part of OGCC responsibility is to encourage oil and gas exploration within reasonable limits, including use and enforcement of mandated rules/regulations. As an engineer, I'm sure you would agree that the best means of regulation/control is through the use of folks who (1) understand the business, (2) understand the technical and other prevalent conditions involved in the process, and (3) have the expertise/knowledge on hand for immediate and capable response. OGCC recognizes their responsibilities in regard to the items outlined in the draft and cooperates with ADEQ in all matters of mutual concern. I am comfortable that oil and gas well permitting and drilling are best managed by regulators who are experts in the subject matter.

Records indicate only six wells have ever been drilled deeper than 10,000 feet in Arizona. Simply put, a bond that relates to 100% of "construction" costs or $1,000,000 whichever is greater, as suggested, is totally unrealistic. The condition would serve to (eventually) drive Arizona out of the oil and gas business. To my knowledge, no other state ever comes close with this kind of requirement.

It is my opinion that the referenced draft resulted from a lack of understanding by a few. Surely, the OGCC would be delighted to cooperate in providing anyone with a better understanding of the OGCC mandated duties and responsibilities.

J. E. Warne Jr.

jds

cc: OGCC/Rauzi

4455 East Camelback Road  •  Suite 290E  •  Phoenix, Arizona 85018  •  Telephone (602) 952-9312
January 7, 1993

The Honorable John Keegan
House Wing
1700 West Washington
Phoenix, Az. 85007

Dear Representative Keegan:

As discussed, I am submitting the attached draft legislation on behalf of the WESTMARC Water Resources Committee to address the inadequacies of the current oil and gas permitting program administered by the Arizona Geological Survey. By requiring an individual Aquifer Protection permit prior to the issuance of an oil and gas permit we will ensure coordination between these two state agencies. The public notice requirements of the Aquifer Protection Permit program are adequate to address our concerns in this area. Finally, we feel new bond requirements in the attached draft would go a long way to insure that potential problems with the operation could be adequately addressed.

I have provided copies of the draft legislation to ADEQ, ADWR and the Arizona Geological Survey for their review and comment. I would appreciate if your would have legislative staff review it as well.

On behalf of the City of Avondale and WESTMARC I thank you for your assistance. I can be reached at telephone no. 932-1909 or fax no. 932-3329.

Sincerely,

Bill Gates
Public Works Director

cc: Carlos Palma
Bill Beyer
Rep. Ned King
Rep. Jerry Overton
Sen. Lito Pena
Sen. Peter Rios
Sen. Warren Austin Turner
Draft Legislation

Oil and Gas Drilling Permits

Section 1. Section 27-513, Arizona Revised Statutes, is amended to read:

27-513. Permit to Drill Well

A PERSON DESIRING TO DRILL A WELL IN SEARCH OF OIL OR GAS SHALL FIRST OBTAIN AN INDIVIDUAL AQUIFER PROTECTION PERMIT FROM THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY. UPON RECEIPT OF THE AQUIFER PROTECTION PERMIT, the person desiring to drill a well in search of oil or gas shall notify the commissioner on a form prescribed by the commissioner, and shall pay a fee of twenty-five dollars for each well. UPON RECEIPT OF THE AQUIFER PROTECTION PERMIT, notification and the fee, the commissioner shall promptly issue the person a permit to drill, unless drilling the well is contrary to a rule, regulation or order of the commissioner. Drilling the well is prohibited until AN AQUIFER PROTECTION PERMIT AND a permit to drill is obtained in accordance with the provisions of this section.

Section 2. Section 27-516, rules and Regulations, is amended to read:

27-516. Rules and Regulations

A. The commission shall make rules and amend them as deemed necessary for the proper administration and enforcement of this article, including the following rules, regulations and orders:

1. Requiring the drilling, casing and plugging of wells in a manner to prevent:

   (a) Escape of oil and gas from one stratum to another.
   (b) Intrusion of water into an oil or gas stratum from a separate stratum.
   (c) Pollution of fresh water supplies by oil, gas or salt water.
   (d) Waste.

2. Requiring reports showing the location of oil and gas wells and requiring filing of logs and drilling record within thirty days from the completion of well drilled for oil or gas.

3. Requiring a reasonable bond OF ONE HUNDRED PERCENT OF CONSTRUCTION COSTS OR ONE MILLION DOLLARS, WHICHEVER IS LESS, with good and sufficient surety conditioned on the performance of the duties prescribed in paragraphs 1 and 2 of this subsection including the obligation to plug
each dry or abandoned well.

Section 3. Section 49-251, Arizona Revised Statutes, is amended to read:

49-241. Permit required to discharge

A. Unless otherwise provided by this article, any person who discharges or who owns or operates a facility that discharges shall obtain an aquifer protection permit from the director.

B. Unless exempted under section 49-250, the following are considered to be discharging facilities and shall be operated pursuant to either an individual permit or general permit, including agricultural general permits, under this article:

1. Surface impoundments including holding, storage settling, treatment or disposal pits, ponds and lagoons.
2. Solid waste disposal facilities.
3. Injection wells.
4. OIL AND GAS WELLS.
5. Land treatment facilities.
6. Facilities which add a pollutant to a salt dome formation, dry well or underground cave or mine.
7. Mine tailings piles and ponds.
8. Mine leaching operations.
9. Septic tank systems with a capacity of greater than two thousand gallons per day.
10. Groundwater recharge projects and underground storage and recovery projects.
11. Point source discharges to navigable waters.
12. Sewage or sludge ponds and wastewater treatment facilities.

wellgas.adm
3-12-93

O & B meeting

Visitor:

Beryl McWhir ACO 5-12-1410
Diane Hinkton AG 5-10-1401

Solvejg Norman

Jim Mitchell City of Avondale 932-1909