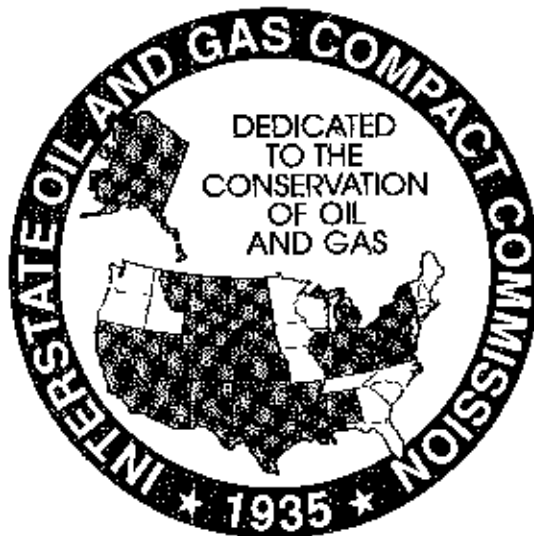


OKLAHOMA STATE REVIEW

IOGCC/EPA STATE REVIEW OF OIL & GAS EXPLORATION
AND PRODUCTION WASTE MANAGEMENT REGULATORY PROGRAMS



A PROJECT OF THE
Interstate Oil and Gas Compact Commission

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INTRODUCTION

This report contains the findings and recommendations of a six-person team appointed by the Interstate Oil and Gas Compact Commission (IOGCC) to review components of the regulatory programs of the state of Oklahoma that pertain to management of wastes derived from the exploration and production (E&P) of crude oil and natural gas. The review was coordinated by the IOGCC in cooperation with the United States Environmental Protection Agency (EPA) and other interest groups.

BASIS FOR THE REVIEW: The primary basis for the Oklahoma review is the report EPA/IOCC Study of State Regulation of Oil and Gas Exploration and Production Waste, hereinafter referred to as the "IOGCC Guidance" or "IOGCC Guidelines". The review team evaluated Oklahoma's E&P waste regulatory programs against the guidelines and criteria listed in the IOGCC Guidance. However, the review team also had some latitude to make inquiries, findings, and recommendations beyond the specific guidelines and criteria contained in the IOGCC Guidance. The Guidance deals only with E&P waste identified as exempt from the Resource Conservation and Recovery Act (RCRA) Subtitle C. Since the potential exists for non-exempt waste to be commingled with exempt waste at E&P sites, steps should be taken to prevent such. This issue is not the subject of this report.

The ultimate purpose of the review is to identify strengths and recommend improvements for the state's E&P waste regulatory programs. Because it is not intended to be a detailed review of the effectiveness of Oklahoma's E&P waste program, the review did not include an evaluation of various site-specific case studies or environmental data. The review (and the criteria upon which it is based) is more of an evaluation of whether the state has certain elements of an E&P waste regulatory program than it is a determination of the extent to which the Oklahoma program is protective of human health and the environment.

Ground rules for the Oklahoma review were established by an IOGCC steering committee comprised of state environmental and oil and gas regulatory officials, representatives of industry and environmental organizations, and officials of interested federal agencies. Members of the review team, official observers of the reviews, rules of participation, and guidelines for preparation of the draft and final reports were approved by the steering committee.

CONTENT OF THE REVIEW: A questionnaire (see Appendix B), based primarily on criteria listed in the IOGCC Guidance, was developed by the steering committee and used as a focal point for the Oklahoma review. The questionnaire touched only briefly on E&P waste management practices and issues that were not addressed in the administrative and technical criteria of the IOGCC Guidance. Those practices and issues excluded are:

- Technical requirements for injection wells regulated under the federal Safe Drinking Water Act (SDWA);
- Effluent limitations for discharges to surface waters regulated under the federal Clean Water Act's National Pollutant Discharge Elimination System (NPDES);
- Monitoring and regulation of naturally occurring radioactive materials (NORM) in oil field wastes;
- Air emission from oil field wastes or waste management facilities; and
- E&P waste management practices on Indian lands in Oklahoma.

Questions concerning injection wells and NPDES-permitted discharges were limited, both in the questionnaire and during the in-state review, to how the regulatory programs for those practices interface with other E&P waste management practices that involve the handling and disposition of liquid and solid wastes.

The review team focused its evaluation on Oklahoma's regulatory requirements for onsite disposal of drilling and production wastes and offsite treatment and disposal facilities. The review addressed management of those wastes in onsite pits, one-time land application, burial, roadspreading, commercial drilling mud pits, commercial soil farms, surface facilities at commercial disposal wells, solid waste landfills, and crude oil and tank bottom reclamation plants.

Statutory and administrative components of the Oklahoma programs, including staffing and funding levels and enforcement activities, were assessed against applicable criteria in the IOGCC Guidance. How Oklahoma's programs interface with federal programs applicable to E&P wastes was also reviewed.

REVIEW TEAM MEMBERSHIP: The review team chosen for the Oklahoma review included: Mr. James E. Erb (review team chairman), Commonwealth of Pennsylvania, Department of Environmental Resources; Mr. William R. Bryson, State of Kansas, Corporation Commission; Ms. Christine Dausman, Kerr-McGee Corporation, American Petroleum Institute; Ms. Terri Lorenzon, Wyoming Environmental Quality Council; Mr. Chris Shuey, Southwest Research and Information Center; and Ms. Lori Wrotenbery, State of Texas, Railroad Commission. Observer team members included: Mr. Terry Adamson, Amoco Production; Ms. Nancy Johnson, U.S. Department of Energy; and Ms. Lisa Muldoon, Citizen's Coalition on Oil and Gas Wastes. Others present included Mr. Jerry R. Simmons, IOGCC staff; Mr. Robert Tonetti and Mr. Steve Souders, U.S. Environmental Protection Agency, Office of Solid Waste; Washington D.C.; and Mr. M.G. "Marty" Mefferd, IOGCC contractor.

WHERE AND HOW THE REVIEW WAS CONDUCTED: The Oklahoma review was conducted in Oklahoma City, Oklahoma, at the Corporation Commission's Oil and Gas Conservation Division (OGCD) offices on February 24-28, 1992. Mr. C. D. "Jack" Davidson, Oil & Gas Conservation Division Director, was responsible for the Commission staff's responses to the questionnaire and review panel questions, and provided members of his staff as necessary during the review process.

The review was conducted by discussing the answers in the questionnaire provided to the review team by OGCD. Prior to beginning each section of the questionnaire, Mr. Davidson, or the appropriate staff member, would give an overview of the topic to be discussed (i.e., permitting, enforcement, technical requirements, etc.). Each review team member was responsible for leading the questioning and ensuing discussion for particular topics in the questionnaire. Observers were also permitted to interject questions throughout the review process. At the end of each day, the review team and observers would identify issues raised during the daily sessions.

Taking these issues into consideration, the review team then prepared a rough draft of findings and areas of concern for most of the criteria listed in the IOGCC Guidance document. On Friday, February 28, 1992, an exit interview was conducted with Mr. Davidson to inform him of the preliminary findings of the review team. The panel outlined positive aspects of the Oklahoma regulatory program and expressed some of the identified areas of concern.

Each review team member was assigned one or more sections to prepare as a draft report for the Oklahoma review. The review panel met again on March 30 - April 3, 1992, to complete the draft report. Once completed, the draft report was distributed to all participants in the review including the Oklahoma regulatory officials and review observers. The review panel met on May 17-19, 1992, to consider all comments and to prepare the final report.

The review team reached consensus on most of the findings and recommendations contained herein. In areas where consensus was not achieved, appropriate entries have been made in the report.

OIL AND GAS PRODUCTION AND WASTE MANAGEMENT IN THE STATE OF OKLAHOMA

The first oil well was drilled at Bartlesville in 1897 when Oklahoma was still a territory. In 1905, the Glenpool Field was discovered near Tulsa and was the first stratigraphic trap discovery. Discovery at the Glenpool Field was followed by several other major discoveries:

- The Hugoton-Panhandle Gas Field in 1918, which eventually became the largest gas field in the United States;
- The Burbank Field in Osage County in 1920;
- The Oklahoma City Field in 1927, which soon became the nation's largest oil field; and
- The giant West Edmond Field in 1943.

In 1990, Oklahoma produced 112,321,064 barrels of oil and condensate, which was the lowest annual production since 1931. The peak production year was 1927, prior to proration, when 277,775,000 barrels were produced. The 2.263 trillion cubic feet of gas produced in 1990 represents an all-time high. Production is from 94,527 oil wells and 28,084 gas wells. In 1990, 73,345 stripper wells produced 78,599,053 barrels of oil, and 2,008 stripper wells were plugged and abandoned. Also in 1990, 4,244 drilling permits were issued. In 1989, new well completions hit a 45-year low at 2,122 wells.

The state's total reserves of hydrocarbons are approximately 789 million barrels of oil and 15,916 billion cubic feet of gas found in 67 of 77 counties. Currently, there is production from 689 oil fields, 228 gas fields, and 1,100 oil and gas fields. Producing wells vary in depth from 320 feet in Craig County in northeastern Oklahoma to 25,670 feet in Beckham County in the southwestern portion of the state.

Major sources of groundwater are the Ogallala aquifer (in the Oklahoma Panhandle), the Cambro-Ordovician Roubidoux (in northeastern Oklahoma where oil and gas is not produced), the Garber-Wellington aquifer (Oklahoma City area), the Rush Springs sandstone (west central), and the Vamoosa formation (east central). The Garber-Wellington aquifer is protected through a federal sole source aquifer designation.

Non-commercial E&P waste management facilities such as tank batteries, reserve pits, and injection/disposal wells, as well as commercial saltwater disposal wells, are common throughout most producing counties in the state. Active commercial

disposal facilities (mud pits and soil farms) are located in 11 counties; inactive commercial disposal facilities are located in 27 counties.

Reserve pits received drilling waste from the 2,206 wells drilled in 1990. More than 22,000 injection wells, including 5,841 disposal wells, handle about 5,930,000 barrels of produced water per day, or nearly all of the water produced daily in Oklahoma. Annually, 856,000 barrels of mud and cuttings are land applied and 116,000 barrels are roadsread. About 4,200,000 barrels of mud and cuttings are hauled to offsite disposal facilities and 2,600,000 barrels of water and mud are disposed of through annular injection.

I. GENERAL

A. Regulatory Jurisdictions and Authorities

The Oklahoma Corporation Commission (OCC) regulates public utilities, oil and gas drilling, production, and waste disposal, motor fuel quality, and motor carrier transport.

The OCC is comprised of three Commissioners who are elected to six-year terms which are staggered. The Director of the OGCD is appointed by, and serves at, the pleasure of the Commission.

The Oil and Gas Conservation Division (OGCD) of the OCC has jurisdiction for the regulation of oil and gas, including all exempt exploration and production (E&P) waste management activities. This authority includes specific responsibility to monitor and regulate, by the promulgation of rules and regulations and the issuance of orders, all aspects of E&P waste regulation. The Division regulates industry practices and procedures with regard to construction, location, and operation of drilling and production pits, both onsite and offsite, and pits located at commercial oil field waste facilities. The OCC has statutory authority to regulate disposal of saltwater, drilling fluids, and other oil field waste, and prevent and abate contamination of the waters of the state. The OCC also regulates crude oil pipelines, field gathering lines, and intrastate trunklines, and is responsible for seeing that all pollution spills from those facilities are cleaned up. The OGCD generally operates under regulations and does not administer program elements through the use of policy statements.

Wastes generated from E&P operations on the Osage Indian Reservation are regulated by the Osage Indian Agency of the U.S. Bureau of Indian Affairs, the Bureau of Land Management of the U.S. Department of the Interior, and in the case of Class II injection wells, by the EPA. The OCC has no authority to regulate any waste generation or disposal activities on Osage Indian lands.

As recommended in section 3.1. of the IOGCC Guidance, the state of Oklahoma has adopted statutory authorities which detail the jurisdictional powers and duties of the OCC over E&P wastes. OCC authorities over E&P wastes are found in several sections of Title 52, Oklahoma Statutes, pertaining to oil and gas conservation:

- 52 O.S. §139 Pollution of Waters - Rules and Regulations - Emergency Action
- 52 O.S. §140 Earthen Storage Ponds - Remedial Action
- 52 O.S. §141 Powers of Commission - Issuance of Rules - Appeals
- 52 O.S. §142 Cooperation and Assistance from Other Agencies
- 52 O.S. §143 Penalties
- 52 O.S. §144 Provisions Supplemental - Exceptions
- 52 O.S. §146 Right of Condemnation by Eminent Domain to Enforce Commission Orders
- 52 O.S. §147 Institution of Condemnation Proceedings by Lessees
- 52 O.S. §148 Court Procedure
- 52 O.S. §149 Conservation Division - Creation - Personnel - Duties - Qualifications
- 52 O.S. §149.1 Oil and Gas Referees
- 52 O.S. §152 Salaries, Costs, Expenses - Payment
- 52 O.S. §153 Persons Having Authority to Make Investigations, Serve Orders, etc.

In addition, the OCC has authority to "protect the waters and lands of the state against pollution" from substandard practices relating to the drilling, completion, and abandonment of wells. This statutory authority is contained in 52 O.S. §309 et. seq., and also gives the OCC authority to remediate wells causing pollution.

The OCC's statutory responsibility is to cause the necessary corrective action on any reported release of a deleterious substance from any E&P operation within its jurisdiction. Title 29 O.S. sections 7-401 and -402 provides an avenue for the criminal prosecution of an alleged polluter by the Oklahoma State Department of Wildlife only when the OCC declines to file any enforcement action against the alleged polluter within a specified time after notice of the event.

While the OCC has the exclusive authority to regulate E&P wastes, other state agencies have peripheral roles. These agencies are:

The Oklahoma Water Resources Board (OWRB)
The Oklahoma State Department of Health (OSDH)
Department of Pollution Control (DPC)
Department of Wildlife Conservation (DWC)

Consistent with section 3.1. of the IOGCC Guidance, the OCC has developed memoranda of understanding (MOU) with OWRB, OSDH, and DWC that delineate regulatory responsibilities in areas where statutory jurisdictions overlap or are unclear, and that describe certain activities where more general state water or air protection requirements and standards apply to the activities regulated by each agency. These MOUs cover the following subjects and are included in Appendix C.

Oklahoma Water Resources Board (OWRB) - The MOU relates to the discharge of storm water and process water from petroleum refinery industries. OWRB issues permits, set discharge limits, and exercises enforcement actions. Oklahoma does not have Federal NPDES primacy. No permits are to be issued to conflict with OCC laws. The MOU with the OCC was signed in December 1990.

Oklahoma State Department of Health (OSDH) - The MOU was signed in May 1985 and established an exchange of information and recommendations for oil and gas field-related wells located within a 2.5-mile radius of any hazardous waste disposal well. A second MOU was signed in November 1989 to delineate responsibilities between OCC and the Air Quality Service (AQS) of OSDH for implementation and enforcement of state and federal air quality rules as they apply to air emissions from E&P facilities.

Wildlife Conservation (DWC) - The MOU was signed in August 1987 to describe interagency flow of information and investigation procedures for spills, releases or other occurrences, damages to the environment, and oil and gas activities posing potential endangerment to the state's wildlife resources.

FINDING I.1.

The MOU with OSDH does not address all activities where the two agencies would benefit from a more coordinated set of procedures outlining areas of cooperation, e.g., disposal of E&P wastes into landfills, and SARA Title III reporting requirements for E&P waste facilities. (See Finding and Recommendation II.10. and VI.25.)

RECOMMENDATION I.1.

The MOU between the OCC and OSDH should include all activities coordinated between the agencies; including disposal of E&P wastes into landfills and SARA Title III reporting requirements.

FINDING I.2.

The review team commends the efforts of the OCC to develop MOUs with other agencies having peripheral regulatory authority over specific oil and gas activities. The MOUs with OSDH concerning activities near hazardous waste disposal well location and for applicable air quality emissions, and with DWC concerning Title 29 enforcement, have not been updated since 1989, 1989 and 1987, respectively.

RECOMMENDATION I.2.

Due to the continued proliferation of statutes and regulations addressing controls of activities in all pollution media, the OCC should initiate a regular MOU review process with each agency.

In addition, oversight of all environmental activities is provided by the Pollution Control Coordinating Board (PCCB) and its administrative body, the Department of Pollution Control (DPC). Seven agencies, including the OCC, and four citizens comprise the 11 members of the PCCB. The PCCB is responsible for coordinating and minimizing duplication of state agency programs dealing with the environment. The PCCB can assign member agencies to investigate suspected, potential, or actual pollution problems, and can assume jurisdiction if an agency defaults.

FINDING I.3.

The PCCB is the referral point for oil field complaints received by an agency other than the OCC. This process is a provision of each MOU.

RECOMMENDATION I.3.

The OCC should maintain a strong working relationship with each of the constituent agencies of the PCCB to efficiently transfer complaints and resolve problems.

In accordance with IOGCC Guidance section 3.2.1., the OGCD has developed a well defined set of mission statements with associated goals and objectives to form the basis for short- and long-term program planning and budget development. This planning process has been used to determine whether program expectations can be

realized in light of revenue shortfalls or personnel cut-backs. Goals and objectives may be revised each year to meet new program commitments.

B. Funding

The OCC receives funding from four sources:

- (1) general appropriation;
- (2) petroleum excise tax;
- (3) fees and fines; and
- (4) federal grants, primarily the UIC program grant from EPA.

The major funding source for the E&P waste management program is the petroleum excise tax. This tax is placed on the mineral owners of the state and amounts to 0.095% of the gross volume of oil and gas sold. Of this, 0.085% is dedicated to the conservation fund and, by statute, the remaining 0.01% is dedicated to the well plugging fund. The conservation fund is designed to provide core funding for the OGCD program. The excise tax is controlled by price per unit produced and decreases when the price of oil or gas goes down and vice versa. This tax generates about \$5,000,000 per year, of which \$500,000 goes to the plugging fund. The OCC staff indicated the \$5,000,000 supported E&P waste management activities for 150 staff, which includes other administrative, finance, personnel, data management, and legal staff outside the OGCD who perform various services.

Fees and payment of penalty assessments collected by all agency divisions go into the OCC's revolving fund and are set to cover the costs of performing specific activities or services such as processing permits or publishing information. The revolving fund currently has no other income sources.

In the past six years, the OGCD central office staff has been reduced by approximately one-half as a result of funding shortfalls. At the same time, district office inspection personnel were held at existing levels. The funding shortfalls precluded, however, the addition of new technical positions, such as environmental scientists or hydrogeologists, to the district office staffs during the same period.

FINDING 1.4.

The review team found that funding available for E&P waste management regulation has decreased and may not be sufficient to allow OGCD to accomplish all of its goals in pollution prevention. IOGCC Guidance section 4.3.2. This fact was most poignantly brought forward by the acknowledgement from OGCD staff that current program funding may be exhausted at the beginning of the last quarter of Fiscal Year (FY) 1992, and supplemental funding would be needed.

RECOMMENDATION 1.4.

New sources of funding are needed to increase staff levels at both the central office and district offices in order to ensure that program goals and objectives are fulfilled. (See Recommendation 1.6.)

FINDING 1.5.

The rate of petroleum excise tax is established by statute, as is the percentage allocated to the plugging fund. In addition, the petroleum excise tax is based on price per unit production and, therefore, program income is vulnerable to decline in production or per unit price. A loss in petroleum production, coupled with a decrease in price per barrel of oil or mcf of gas, could diminish or render less effective the implementation and enforcement of E&P waste regulations through necessary staff cut-backs. (See Recommendation 1.6.)

FINDING 1.6.

All general fund allocations to the OCC are used to finance broad-based program support throughout the agency. The OGCD charges fees for most permitting, processing, and information distribution activities related to its regulatory programs, including E&P waste management. However, revenues from these activities, along with penalty payments for operator non-compliance, are reallocated to all OCC activities and only a small portion goes back to the OGCD whose regulatory activities generated the fees and penalties.

RECOMMENDATION 1.6.

The OCC should consider one or more of several alternate funding options to place the OGCD in a more stable financial position and maintain flexibility in seeking funding levels commensurate with the cost of the program. The review team suggests the following options:

- (a) Seek changes necessary to allow the OGCD to set the petroleum excise tax by regulation. Such flexibility would allow OGCD to increase or decrease the rate based on program needs. The legislature and the Governor would still have an opportunity to be involved through the regulation review process.
- (b) Seek a statutory change to restructure the excise tax to apply to a mill rate per production unit (barrel of oil or mcf of gas), thus eliminating the vulnerability to price.

- (c) Reallocate most fee income and penalty payment income back to OGCD funded activities. This approach would allow OGCD to charge fees in line with services rendered, and also have dedicated program funding to use as match for current and future federal grant money.

FINDING I.7.

The OGCD staff indicates the estimated amount of time and money spent on E&P waste activities is hard to separate from other duties, particularly for field personnel. The OGCD has, however, developed a computerized time accounting program that shows personnel and operational expenses for E&P waste management programs, and includes individual district effort. The review team was provided a printout which showed expenditure of 31 man-years and \$1,053,623 for FY 1990-1991.

RECOMMENDATION I.7.

In the past, when cut-backs in staff resources were necessary due to funding shortfalls, the OGCD reduced central office staff by one-half and maintained field staffing levels at full force. The review team views this as a reasonable management decision given the fiscal realities; however, the ability to maintain this commitment in the long-term is of great concern, particularly if program responsibilities increase. The use of time accounting techniques should be a viable tool in predicting desired shifts in program funding.

C. Personnel

The OGCD's central office in Oklahoma City and its four district offices share responsibility for carrying out all oil and gas regulatory functions, including the management of E&P wastes.

There are 67 persons assigned to district office locations. Each district office has a manager, assistant manager, and from 11 to 14 oil and gas field inspectors. There are a total of 48 field inspectors and three oil and gas safety specialists who work out of their homes and are assigned distinct geographic areas that roughly correspond to county boundaries and may include one or more counties. The field inspectors are responsible for implementing all oil and gas regulatory activities within the assigned area and do not generally specialize in specific regulatory programs. Oil and gas field inspectors come into the district office every two to three weeks; the main link between the district office and a field inspector is by radio telephone or correspondence. Although the review team makes no finding or recommendation concerning the frequency of field inspector visits to the district office, we are concerned about whether the current frequency is adequate.

Each district office has administrative and clerical support. All district activities are coordinated and supervised by a Manager of Field Operations who is located in the Oklahoma City office (Appendix D).

The Oklahoma City office has a Deputy Director who heads the Administration Department for document handling, well record processing, and document processing. There are three other departments, which include:

- Field Operations, which supervises the district offices and their field inspection staffs.
- Technical, which oversees traditional conservation activities such as oil and gas proration, but does have some E&P waste management responsibilities related to drilling and plugging.
- Pollution Abatement, which coordinates E&P waste management activities and administers the Underground Injection Control Program.

The Pollution Abatement and Technical Departments administer statewide programs and coordinate district implementation of program elements through the Manager of Field Operations and the district managers. Neither department has personnel in the district office system under its direct supervision. Organizational charts of OCC are in Appendix E.

The Oklahoma City office has 49 persons assigned to carry out program responsibilities. The responsibilities include the development of policies on technical guidance for central office or district office operations, program planning and budgeting, providing technical support to field offices, and the development of regulations.

Three other divisions within OCC interface with the OGCD:

- the Office of General Counsel;
- the Consumer Services Division; and
- the Transportation Division

The Consumer Services Division (CSD) was created to serve several public relations and response functions that had previously been handled by separate divisions. The Division consists of 17 persons and serves as a public information and consumer complaint clearing house for the OCC. Consumer complaints range from those having to do with utility rates and services to those related to fuel quality and prices. Shortly after formation of the CSD, the Pollution Response Team (PRT) was transferred to the Division from the Administrative Division. The PRT was formed to evaluate and

coordinate the quality and effectiveness of the agency responses to pollution events. Recently, five full-time equivalents (FTE's) and two unallocated positions were reassigned to the Consumer Services Division. This created an unplanned reduction in clerical and technical support within the OGCD. None of the position reassignments affected the district offices and most were in the Central Office support positions.

FINDING I.8.

The review team finds that the transfer of the PRT to the CSD was a positive step, because it promotes coordination for all pollution response activities at an interdivision level rather than from a sub-Commission to division level. The review team encourages the OGCD to maintain a close working relationship with the PRT.

All legal support for the OGCD is housed in the Office of General Counsel, from which a Deputy General Counsel and one or more subordinate attorneys are assigned to provide legal assistance to each division within the OCC.

FINDING I.9.

At the time of review, only two of six attorneys assigned to OGCD were actually available to the Division. OGCD staff and the Deputy General Counsel assigned to the Division both expressed concern about the ability of the legal staff to keep up with the current enforcement caseload and the future workload generated by a stricter penalty assessment program just being instituted through regulation.

RECOMMENDATION I.9.

The legal support available to OGCD should be increased to carry out program goals and objectives, including enforcement. (See Recommendation X.4.)

Hearings on oil and gas matters, including those associated with permitting and enforcement of E&P waste management regulations, are presided over by personnel assigned to the Office of Administrative Proceedings. These persons are called Administrative Law Judges; they may be attorneys with admission to the Oklahoma Bar Association, or they may have degrees in petroleum engineering or geology. The organizational chart furnished by OGCD indicates four attorneys, one Senior Hearing Officer, and three Administrative Law Judges are assigned to hear oil and gas matters.

FINDING I.10.

The OGCD staff appeared satisfied with the timeliness of hearings on most oil and gas matters, including those dealing with E&P waste issues. The review team believes the OCC has a well-structured hearing process for oil and gas

matters. The Administrative Law Judges hearing OGCD cases may have familiarity with oil and gas and may be petroleum geologists or engineers.

All district managers and field inspectors are employed on the basis of their knowledge of oil and gas operations. The Manager of Field Operations and district managers, by statute, must hold a degree in petroleum engineering or have equivalent experience, while assistant district managers may hold degrees in engineering, another scientific field, or business, or have equivalent experience. 52 O.S. Supp. 1988 §149.4 and §149.8. Field inspectors must have a high school diploma and have at least one year of oil field experience. 52 O.S. §149.10.

FINDING I.11.

The OGCD staff indicated that some of the field inspectors hold degrees in petroleum geology, petroleum land management, or business. In addition, the Division would like to place a hydrogeologist or environmental specialist in each district office to coordinate E&P waste management regulatory activities and investigate special environmental problems if funding becomes available. Inspectors with geology or engineering degrees, in addition to experience in oil and gas, help to strengthen the E&P waste management regulatory program.

RECOMMENDATION I.11.

The OGCD is encouraged to maintain this level of professional expertise, and is further encouraged to place hydrogeologists or environmental specialist in each district office. The review team recommends that the OGCD increase, where appropriate, the education and training of field inspectors.

II. PERMITTING

A. Regulatory Mechanisms

The OCC relies on a combination of regulatory mechanisms to control the management of wastes generated during oil and gas E&P operations. Some E&P waste management facilities and activities, such as offsite reserve pits and commercial disposal pits, are permitted individually. OAC 165:10-7-16 and 165:10-9-1. Others, like basic sediment pits and burial of trash and debris, are authorized by rule. OAC 165:10-7-16 and 165:10-3-17. Still others, like saltwater storage tanks, are subject to regulatory requirements established by rule. OAC 165:10-3-13. With few exceptions, the OCC regulates all management practices for E&P wastes either by permit, authorization by rule, or regulatory requirements established by rule.

FINDING II.1.

The OWRB has issued permits for gas plant evaporation/retention pits and discharges of gas plant effluent even though these facilities fall within OCC jurisdiction. The OCC and OWRB have recently resolved this issue.

RECOMMENDATION II.1.

The review team encourages the OCC to address these E&P waste management practices in its regulations to ensure that they are being adequately regulated and enforced. IOGCC Guidance section 4.1.1.

FINDING II.2.

OCC rules allow the following E&P wastes to be disposed of by onsite burial without clear regulatory controls: oily debris; filter media; iron sponge; molecular sieve; produced sand; and paraffin. The list of disposal options in OAC 165:10-7-24 identifies onsite burial as a disposal option for these wastes and references the rule on non-commercial pits. OAC 165:10-7-16. However, this rule does not specify what standards and procedures apply to onsite burial of these wastes. In practice, some operators notify and obtain verbal authorization from the district office before burying these wastes onsite.

RECOMMENDATION II.2.

The OCC should clarify the requirements for onsite burial of these wastes and, if necessary, develop additional requirements to ensure that these wastes are managed in an environmentally responsible manner consistent with IOGCC Guidance sections 4.1.1. and 5.5.2., and in a manner that will prevent pollution in accordance with IOGCC Guidance section 5.1.a.

OAC 165:10-7-24 identifies the recycling and disposal options for each type of E&P waste. It also references the OCC rules applicable to each disposal option.

FINDING II.3.

OAC 165:10-7-24 provides a quick and easy reference to the authorized recycling and disposal options for E&P wastes. However, it does not address all E&P wastes and may not offer enough options for management of some E&P wastes. Unless regularly updated, it may discourage operators from considering improvements in waste management and waste minimization technology.

RECOMMENDATION II.3.

The OCC should continue to review and revise this rule regularly to ensure that it covers all types of E&P wastes, recognizes a variety of environmentally sound management options, accommodates new technology, and reflects the hierarchy of preferred waste management practices identified in IOGCC Guidance section 5.1.e.

The OCC's general preference for onsite management of E&P wastes is reflected in a requirement that any offsite disposal of E&P wastes must be permitted.

Permits may be issued by the district office or in Oklahoma City, depending on the type of activity. For example, the district offices issue permits for offsite reserve pits, spill containment pits, remediation pits, recycling/reuse pits, and road applications of waste oil. OAC 165:10-7-16 and 165:10-7-22. The OGCD staff in Oklahoma City issues drilling permits and permits for one-time land applications. OAC 165:10-3-1, 165:10-7-19, 165:10-7-25, and 165:10-7-26. The Transportation Division (TD) staff in Oklahoma City issues permits for truck yard pits. OAC 165:30-3-92. Permits for commercial disposal pits, commercial soil farming, enhanced recovery injection wells, disposal wells, and annular disposal, may be issued only by Commission order. OAC 165:10-9-1, 165:10-9-2, and 165:10-5-2.

FINDING II.4.

The district offices lack hydrogeologists or other environmental specialists to perform technical reviews of permit applications, and the technical staff in Oklahoma City does not regularly review permits issued by the district offices.

RECOMMENDATION II.4.

To enhance the technical quality of permits issued by the district offices, professional environmental staff should review permit applications processed by the district offices. The review team supports OCC's current efforts to obtain funding to hire a hydrogeologist or environmental specialist for each district office. In addition, the Oklahoma City staff should oversee the permitting practices of the district offices to promote consistency statewide. IOGCC Guidance section 4.3.1. (See Recommendation I.11.)

FINDING II.5.

The OCC does not place fixed terms on all E&P waste management permits as recommended by IOGCC Guidance section 4.1.1. Many of the permitted facilities and activities are inherently short-lived. However, some that may exist indefinitely are: recycling/reuse pits, spill containment pits, truck yard pits, and

commercial disposal pits. The OCC has no established procedures for periodically reviewing the permits for these facilities.

RECOMMENDATION II.5.

The OCC should issue permits for long-term E&P waste management facilities and activities for fixed terms, or otherwise establish a procedure for periodically reviewing and, if necessary, revising these permits. IOGCC Guidance section 4.1.1.

Essentially all produced waters are disposed of by injection into enhanced recovery injection wells or disposal wells permitted by OCC under the Class II Underground Injection Control Program, approved by EPA under the federal Safe Drinking Water Act (SDWA). OAC 165:10-5-1 through 165:10-5-14. The OCC rules contain permitting requirements for the land application of produced waters, but only one such permit has been issued. OAC 165:10-7-17. Discharges of produced waters to surface waters are prohibited. OAC 165:10-7-18.

Drilling fluids may be disposed of in an onsite reserve pit, in an offsite reserve pit, by one-time land application, in a commercial disposal pit, by commercial soil farming, or by annular injection. OAC 165:10-7-24. A number of these disposal options for drilling fluids apply only to water-based drilling fluids. An application for a drilling permit must contain information regarding the disposition of the drilling fluids, although issuance of the permit to drill does not constitute approval of the method of disposal. OAC 165:10-3-1.

If the operator proposes to use an onsite or offsite reserve pit, the OCC staff performs a hydrogeologic review of the pit site in conjunction with the issuance of the drilling permit. OAC 165:10-3-1. The requirements for the construction, operation, and closure of the pit, and for the disposal of the pit contents, will vary depending on the hydrogeologic classification of the site. OAC 165:10-7-16. For example, a reserve pit must be closed within one year after drilling ceases unless the pit was required to be lined because of its location in a sensitive area, in which case the pit must be closed within six months.

A separate permit is required if drilling fluids are to be disposed of in an offsite reserve pit, by annular disposal, or by one-time land application. OAC 165:10-7-16, 165:10-5-13, 165:10-7-19, and 165:10-7-25. Under each of these three options, only the drilling fluids from a single well may be disposed of at any particular site. A separate permit is also required for non-commercial recycling/reuse pits, and these pits may receive fluids from more than one well operated by the same operator.

Pits authorized by rule must be constructed, operated, and closed as specified in the rule. The types of pits authorized by rule are: onsite reserve pits for oil-based and

water-based drilling fluids; pits for gas-based (air drilled) systems; emergency pits; flare pits; completion/fracture/workover pits; basic sediment pits; and saltwater storage pits at disposal wells. OAC 165:10-7-16, 165:10-7-20, and 165:10-9-3.

FINDING II.6.

With the exception of saltwater storage pits at enhanced recovery injection wells, all pits are reviewed through the drilling permit process, permitted individually, or authorized by rule. In Rule Making 59, the OCC has proposed a new rule for surface facilities at enhanced recovery projects. This new rule, which is similar to the existing rule for surface facilities at non-commercial disposal wells, would authorize saltwater storage pits at enhanced recovery injection wells by rule.

RECOMMENDATION II.6.

The review team supports adoption of the new rule for surface facilities at enhanced recovery projects. IOGCC Guidance sections 4.1.1. and 5.3.2.

FINDING II.7.

OCC rules do not require an operator to notify the OCC before constructing or using a pit authorized by rule. The OCC does not routinely review pits authorized by rule prior to construction or use.

RECOMMENDATION II.7.

As suggested by IOGCC Guidance section 5.3.2., OCC rules should require an operator to notify the OCC before constructing and using a pit authorized by rule so that the OCC may ensure that the pit will be properly constructed, operated, and closed. Also, the OCC needs notice of the pit in order to maintain complete records of pit locations consistent with IOGCC Guidance section 5.3.6.f.

The OCC has issued separate rules for commercial disposal facilities which must be permitted by Commission order. OAC 165:10-9-1, 165:10-9-2, and 165:10-5-2. All centralized facilities as defined in IOGCC Guidance section 5.7.1. are classified as commercial facilities under OCC rules. The OCC permits only three types of commercial disposal facilities: (1) commercial disposal pits for water-based drilling muds and cuttings and salt-contaminated soils; (2) commercial soil farming of water-based drilling muds and cuttings; and (3) commercial disposal wells. Saltwater storage pits at commercial disposal wells are authorized by rule. OAC 165:10-9-3.

