

State of New Mexico
Class II UIC Program
Peer Review



January 8, 2020

Introduction

In 1974, Congress passed the Safe Drinking Water Act (SDWA), which required the U.S. Environmental Protection Agency (USEPA) to develop minimum federal requirements for underground injection practices. The purpose of the UIC Program is to protect public health by preventing contamination of underground sources of drinking water (USDWs).

The USEPA has defined six classes of injection wells that are permitted and regulated under the SDWA. Class II wells are those that are used to dispose of fluids associated with the production of oil and natural gas.

Under Sections 1422 and 1425, the SDWA provides for delegation of primary enforcement authority (primacy) for the UIC program to states, territories and tribes. As of 2019 the USEPA had delegated primacy for portions of the UIC program to 43 states, territories and tribes.

In September, 2019 the New Mexico Oil Conservation Division (OCD) requested that the Ground Water Protection Council (GWPC) conduct a focused Peer Review of their Class II UIC program. These reviews were reinitiated nearly 4 years ago as part of the State Oil and Gas Regulatory Exchange (a joint project of the GWPC and the Interstate Oil and Gas Compact Commission (IOGCC)). Reviews have been conducted in 5 states since 2015. They involve an evaluation of the effectiveness of a state's Class II UIC program, which demonstrates the ability of the UIC program to protect USDWs and public health. Equal effectiveness with Section 1422 SDWA programs is the standard required of Section 1425 delegated programs. This report details the findings of the peer review team, provides feedback on positive aspects of the program and offers suggestions for enhancing the effectiveness of the Class II UIC program managed by the OCD.

It is important to note that this review is not intended to measure the OCD's UIC program against programs in other states. Implementation of UIC programs vary from state to state due to differences in regional geology and geography, statutory authority, population density and distribution, economics and other factors. These make state to state comparisons of most processes somewhat meaningless from an overall program evaluation standpoint.

During the New Mexico review a team consisting of a former state oil and gas deputy director, former federal UIC regulator and former state oil and gas director studied the current oil and gas and UIC rules of New Mexico and the answers to a standardized questionnaire provided by OCD staff. Following this, the review team conducted an in-state interview of the OCD staff to obtain answers to follow-up questions resulting from the rule and questionnaire review.

Executive Summary

The OCD received SDWA Section 1425 primary enforcement authority (primacy) for the Class II Underground Injection Control (UIC) program from USEPA on March 7, 1982. Their main office is in Santa Fe, with four district offices located in Hobbs, Artesia, Santa Fe and Aztec, which manage all field activities. As of December 4, 2019, the OCD regulated a total of 983 active Class II-Disposal wells and 3249 active Class II- Enhanced Recovery wells. The number of wells regulated is expected to increase significantly in the near future owing to significant increases in exploration and production activity in the Permian Basin. This includes a number of atypical injection well types not routinely seen in other states. These types such as carbon dioxide injection wells, water-gas injection wells, and acid-gas injection wells require additional attention by the OCD.

The recent development of oil and gas production in the Permian Basin has resulted in dramatic increases in UIC related permitting and inspection activities. Applications for permits have increased substantially from an average of 110 per year from 2015 through 2018, to 538 in 2019 (a fivefold increase) (Figure 1).

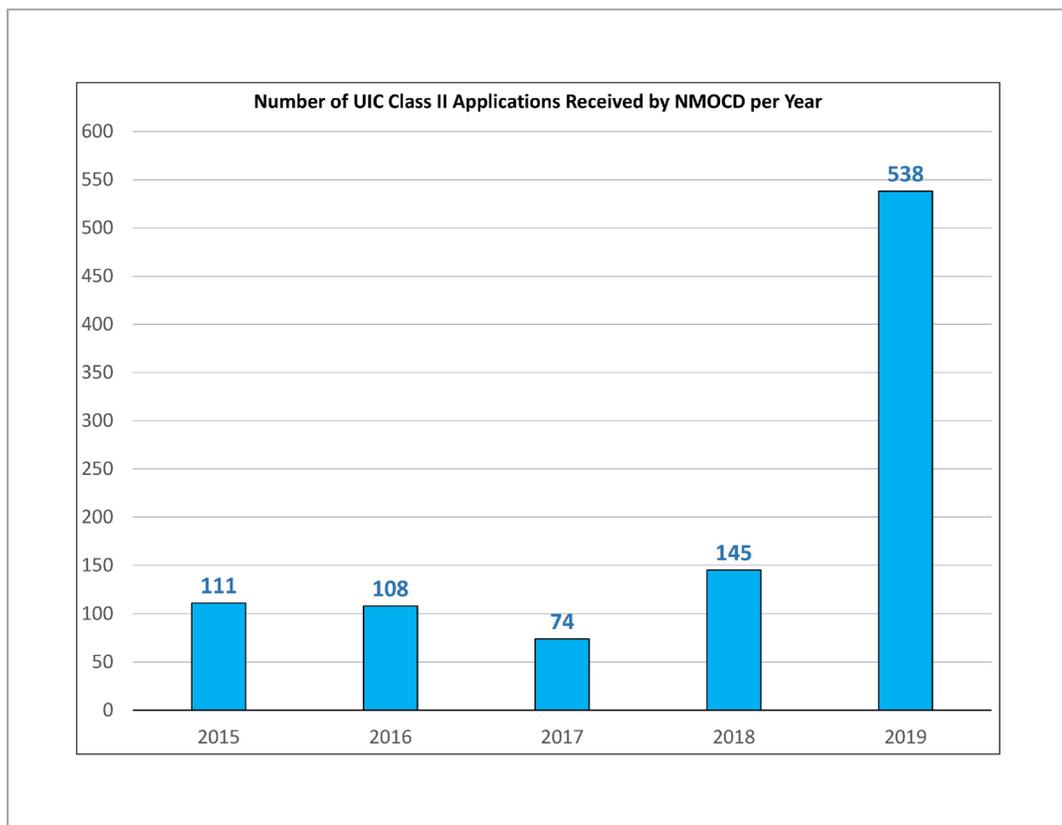


Figure 1: Permit applications by year 2015-2019 Source: New Mexico OCD

As a result, the OCD faces a backlog of over 400 Class II well permit applications pending review. At present workload and staffing levels permit review requires six to nine months. This is much longer than most Class II programs which generally require between 60-90 days to process an application.¹ The OCD projects that its workload will continue to increase in the foreseeable future as a result of Permian production. The large number of proposed new wells in close proximity to each other within the Permian Basin also raise serious potential induced seismicity concerns. Proper assessment of this risk, with its impacts on public health, safety and the environment would require substantial resources, which are not currently available to OCD.

Despite this vastly increased workload, staffing within OCD has not increased as a result of an inability to expand staffing levels, recruit new staff to replace departing staff due to salary constraints, and retain existing staff because of budget limitations. These three conditions have resulted in staffing shortages of between 40-60 percent in some sections and have placed the OCD in a near crisis situation from a programmatic standpoint. At present, the OCD has insufficient staff available to manage critical aspects of a Class II UIC program such as witnessing of Mechanical Integrity Tests (MITs) and casing installation and cementing, conducting periodic file reviews and implementing inspection frequencies at levels that would guarantee protection of Underground Sources of Drinking Water (USDWs). Even if staffing were filled at the current fully authorized levels the program would still be unable to meet all of the needs for USDW protection contemplated in the states' primacy agreement with the U.S. Environmental Protection Agency.

To date the OCD has been unable to increase its budget to provide for elevated staffing levels and has also been unable to reclassify positions to make state service more attractive to those with the qualifications needed to implement a Class II UIC regulatory program. While the OCD is planning a reorganization, which will alleviate some of the current problems faced by the division, this is only a stopgap measure that will not ultimately resolve the issues they face.

Without significant staffing increases, as detailed below, and enactment of staff retention efforts for both field and office positions, the State of New Mexico is likely to face an increasing threat of harm to USDWs and an elevated risk to public health and safety.

The following is a list of the identified strengths of the OCD UIC program and the review teams' critical suggestions for program improvement:

¹ Phone survey of Class II UIC primacy agencies conducted in 2018 by the GWPC

Identified Strengths:

- The Class II program staff is dedicated, knowledgeable, experienced, and demonstrates a high degree of technical competency.
- To the extent resources allow, the permitting and field witnessing programs have focused on the most critical elements such as casing installation and cementing and mechanical integrity testing of wells.

Critical Review Suggestions:

- To assure effective environmental protection and improve overall protection of public health and safety the team strongly suggests that in addition to the 6 new positions the OCD has requested, the state provide the OCD with the authority and budget to add an estimated additional 22 positions as follows:
 - 5 technical specialists of various disciplines to assist in permitting, including such issues as induced seismicity, fault mapping and groundwater protection;
 - 11 district office compliance and environmental specialists to provide a field presence that ensures the integrity of injection wells and the avoidance of spills and contamination of groundwater;
 - 4 administrative and legal staff such as lawyers and hearing examiners to handle enforcement, legal and administrative requirements in the central office; and
 - 2 managers to coordinate and direct the UIC program including the large permitting workload.
- The team strongly suggests reclassification of positions and other incentives to improve recruiting and retention of staff. Unless OCD is allowed to be competitive with private industry and other state agencies, it will be extremely difficult to fill needed positions with qualified staff.
- To further develop seismic monitoring and investigation capabilities, the OCD should continue its efforts to finalize an MOU or other formal agreement to define agency processes and responsibilities and coordinate activities between the OCD and the New Mexico Bureau of Geology & Mineral Resources (NMBGMR). In view of the potential for induced seismicity in the Permian Basin, additional technical staff specialized in seismic data analysis should be assigned to this function. OCD legal staff should also evaluate the agency's authority to address induced seismicity. Further, OCD should consider consulting with agencies in other states that have dealt with induced seismicity issues.

New Mexico Class II UIC Peer Review

Review Team:

The following persons conducted the New Mexico Peer Review:

Team members:

Scott Kell, Deputy Chief, Ohio Division of Oil and Gas Resources Management (Retired)

Mike Nickolaus, Special Projects Director, Ground Water Protection Council and former Director of Oil and Gas, Indiana Division of Oil and Gas (Retired)

John Taylor, USEPA UIC Program Manager (Retired)

Observers:

Mike Paque, Executive Director, Ground Water Protection Council

Tara Gross, Geologist, Ground Water Protection Council

Program Overview

The OCD oversees a highly diverse Class II Program, and faces new challenges associated with substantial increases in permitting activity and regulatory responsibilities associated with increasing injection volumes. Regulated Class II activities are distributed statewide volumes necessitating staff in their district offices. In addition to typical Class II wells for disposal of produced water, the OCD also permits and regulates the following injection well types:

- Class II enhanced oil recovery wells;
- Carbon dioxide injection wells;
- Water-Gas injection wells; and
- Acid-Gas injection wells:

The latter three types of injection wells present challenges associated with corrosion and degradation of traditional well construction materials including steel tubulars and cement.

The recent development of oil and gas production in the Permian Basin has resulted in dramatic increases in permitting and inspection activities. Applications for Class II UIC permits have increased substantially from an average of 26 per quarter from 2014 through 2018 to 288 in the 3rd quarter of 2019. As a result, the OCD faces a backlog of over 400 Class II well permit applications pending review due to various factors such as operator leasing and business

practices and increased Permian activity. At present workload and staffing levels permit review requires six to nine months. The OCD projects that its workload will continue to increase in the foreseeable future as a result of production increases, particularly in the Permian (Figures 2 and 3)

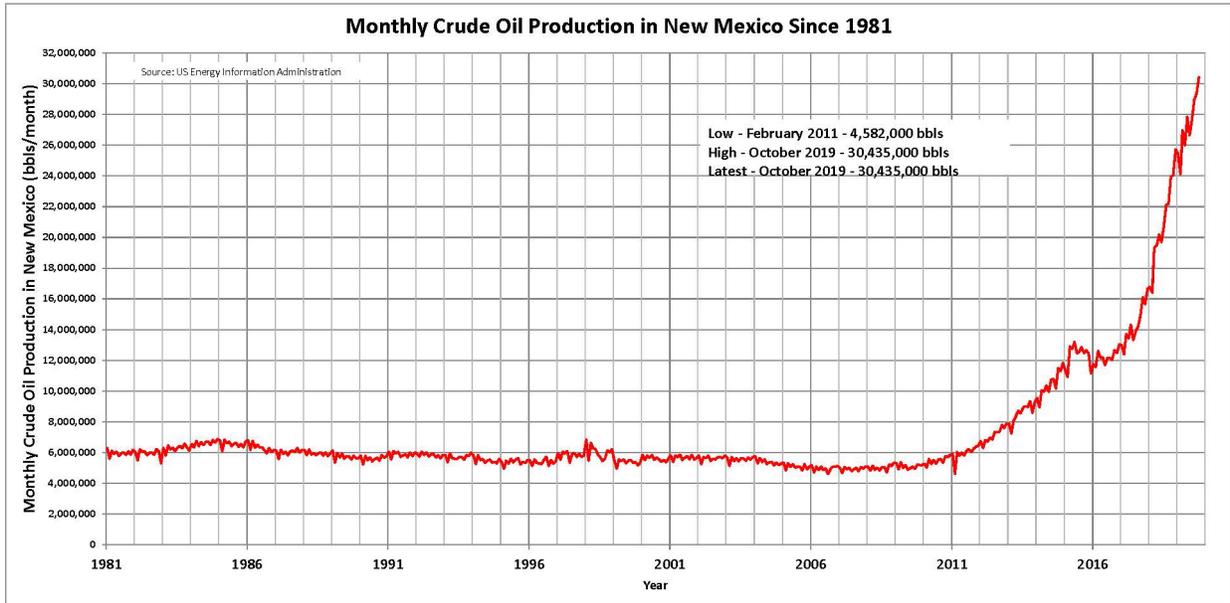


Figure 2: Crude Oil Production in New Mexico Since 1981 Source: New Mexico OCD

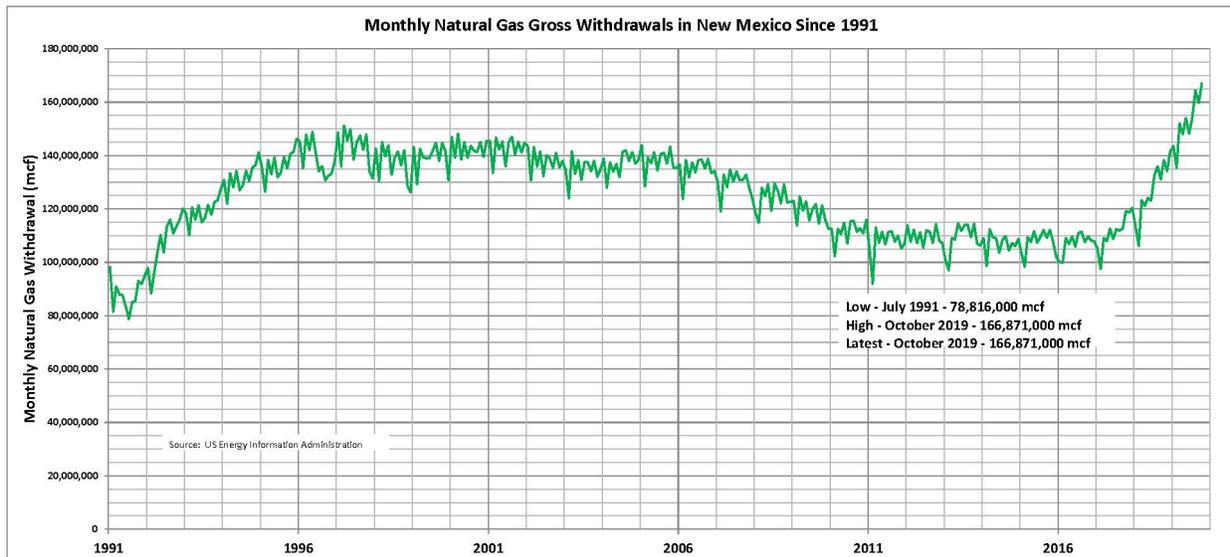


Figure 3: Natural Gas Gross Withdrawals in New Mexico Since 1991 Source: New Mexico OCD

In addition to rising activity trends, OCD faces a number of complex challenges including:

- Induced seismicity monitoring, investigation and regulatory response;
- A trend toward deeper injection zones leading to increased induced seismicity risks, especially in the Permian Basin;
- Aging state-wide inventory of CO2 injection wells, especially in the Hobbs area;
- Coordination of regulatory responsibilities for wells on federal and tribal lands;
- Substantial increases in public and industry objections to applications and workload associated with hearings and the adjudication process;
- The need to institute proactive well maintenance and monitoring measures required to ensure protection of USDWs in acid gas injection and water alternating-gas injection fields including annual MITs and installation of redundant wells; and
- Retention of qualified staff due to the disparity in pay scales between OCD and industry and even other New Mexico state agencies.

Administration, Staffing and Funding

OCD funds the UIC program using both USEPA and state funds. The Class II portion of the Fiscal Year (FY) 2020 USEPA UIC grant is \$204,220, for which OCD is providing a state match of \$108,333. The overall OCD budget for FY 2020 is \$11.661 million and includes authorization for 71 employees. However, out of the FY 2020 budget, \$4,923,700 was designated for the reclamation fund, which cannot be used for salaries. The level of state funding and authorized positions has fluctuated over the past several years (Table 2). State funding is provided through

	FY14	FY15	FY16	FY17	FY18	FY19	FY20
FTE's	61	61	70	70	66	66	70
Budget							
UIC	\$323,200	\$266,200	\$328,133	\$285,400	\$275,400	\$285,400	\$295,600
General	\$3,618,800	\$3,670,000	\$2,632,700	\$2,138,700	\$1,853,800	\$5,070,900	\$5,945,500
Recl.	\$5,264,300	\$6,395,200	\$8,571,300	\$8,262,100	\$6,697,800	\$2,194,700	\$4,939,700
Water	\$137,000	\$204,128	\$457,267	\$500,000	\$510,000	\$500,000	\$500,000

Table 2 OCD Full Time Equivalents (FTEs) and Budget from FY14 through FY20 Source: New Mexico OCD



Figure 4: General Fund Revenues Dependent on Oil & Gas Industry (\$ billions) Source: New Mexico Legislative Committee Hearing Brief, December 10, 2018

general revenue funds authorized by the state legislature, however, these funds are only a fraction of the revenue generated by oil and gas activities in New Mexico, as the third largest producing state in the United States. Oil and gas activities provide approximately 47% of the state’s revenue as shown in Figure 4.

New Mexico stated that oil and gas production added about \$1.1 billion in budget surplus for FY20. Similar amounts are projected for FY 21. USEPA grant funding has remained stagnant for many years and now covers only about 28% of the current OCD resources devoted to UIC activities.

The geology in the Permian raises questions as to the potential for induced seismicity with many wells in close proximity to each other. Proper assessment of this risk, with its impacts on public health and the environment would require substantial resources, which are not currently available to OCD.

To deal with this greatly increased workload, current resources available to OCD for UIC purposes only provide for the allocation of two full time equivalents (FTEs) toward permitting activities, and one FTE for field activities, with a minimal amount for management oversight and occasional help from other employees, especially in the field. This is far less than adequate to cover the range of essential duties that should be performed. In an attempt to begin to address these shortfalls, OCD has now proposed a reorganization to more effectively utilize available resources and has requested an additional 6 positions from the legislature. However, this is only a start toward

addressing the overall need, as far more permitting, legal, administrative inspection and management staff beyond this, perhaps as many as 20 to 25 in addition to the 6 proposed, would be needed to fully and effectively meet the challenges of the current UIC workload.

An additional staffing problem OCD faces is an inability to recruit and retain qualified personnel. At present, approximately a quarter of the authorized positions in OCD remain unfilled. Current state hiring classifications and pay bands make it extremely hard for OCD to compete for

qualified individuals with private industry, and even other New Mexico state agencies with greater budgets and flexibility to pay higher wages. For individuals with the type of training and experience that OCD needs, private oil and gas industry companies currently offer twice or more salary and benefits than what the OCD can offer.

Data Management

Another issue which is impacted by OCD's resource limitations is a lack of updated and modern technological solutions in data collection, data management, and data use. There are issues with the quality of data collected and OCD does not have an effective way to manage and use its data. An improved data management system would provide greater efficiency for the permitting and field inspection programs. In addition, industry and the public cannot easily access and use OCD data. Although the state legislature recently passed Senate Bill 553, which gave OCD the authority to collect application fees to be used for IT upgrades beginning on July 1st of 2019, additional funding would likely be necessary to fully address these needs.

Changes in Program Activities since Primacy

Since primacy was approved, OCD has run the program with only minor regulation and programmatic changes. However, as noted above, the UIC program has experienced a dramatic and unprecedented increase in the number of UIC applications as a result of the rapid expansion of drilling in the Permian Basin. This has led to a more than ten-fold increase in permit applications without additional resources to review them and address the issues they raise. Significant additional work will be needed to address such issues as induced seismicity and hydrological concerns. This will include rule development, which must currently be done by existing staff who are not specifically trained in rule drafting.

Permit Application Flow and Review Process

The OCD permitting process is well structured and designed to provide a thorough administrative and technical review of applications for proposed Class II wells. The OCD Engineering Bureau receives applications for permits and performs an administrative completeness review. OCD staff evaluates completeness and documents the submittal of all required elements using a checklist. In order to assist the OCD staff and help operators comply with UIC program requirements, OCD has developed a 157-page UIC Program Manual which outlines in detail the various regulations and OCD procedures applicable to all aspects of the UIC program. After the completeness review, the application is assigned an application number

and an administrative order. The application is then categorized for placement in processing order and prepared for the technical review by the OCD engineering staff in Santa Fe.

If an application for permit is found to be incomplete the OCD provides a written request to address the specific deficiencies. The applicant is given ten business days to submit the additional information. If the applicant does not provide necessary information within the ten-day period, the OCD denies the application.

In addition to information about the applicant and the proposed location, each application must include information pertaining to the proposed well design, anticipated geology and operational parameters. The application must include a map displaying the location of wells and active leases within the area and proof of notice to all affected parties. The OCD also requires applicants to submit a groundwater quality analysis that is representative of the uppermost aquifer within a one-mile Area of Review (AOR) of the proposed Class II well.

The OCD evaluates the depth to the base of deepest USDW by compiling information from a variety of sources including basin-wide water studies and input and recommendations from other agencies including the United States Geological Survey, the New Mexico Office of the State Engineer, and New Mexico Bureau of Geology and Mineral Resources. The geological cross-sections provided by the OCD demonstrate that the engineering staff and district geologists have appropriately identified all aquifers that require protection as USDWs.

Administrative Aspects of Permit Application Review

Prior to a permit determination the applicant must provide direct notice to “affected persons” as defined in the New Mexico Administrative Code, the surface owner of the tract where the proposed well is located, and general notice through publication in a newspaper in general circulation within the county. The comment period lasts fifteen days. If an application is protested, a hearing is conducted before a division examiner of the OCD office in Santa Fe. Public hearings are transcribed.

Witnesses are subject to cross examination. State and local government entities can object to approval of an application or offer conditions of approval. After consideration of evidence presented at the hearing, the OCD issues an order that is subject to appeal before the Oil Conservation Commission. The notification, objection and determination process ensure that all parties with “standing” have an opportunity to provide input.

Bonding requirements are in accordance with state rules. Even with a modest recent increase in bonding amounts, blanket bonding requirements are inadequate to cover the cost of properly plugging a well. This is especially true for Devonian wells; which typically cost more to plug because of their depth. While the bonding amounts for one well are substantial at \$25,000 and \$2 per foot, blanket bonding amounts can range as low as \$1,250 per well for multiple wells. Further, even current individual well bonding amounts are unlikely to cover the cost of plugging a Devonian well.

Technical Aspects of Permit Review

The OCD acknowledges that there are areas of the state where groundwater quality information is limited. In these areas, the OCD appropriately requires sampling of proposed injection intervals to ensure that such intervals are not USDWs. The OCD requires installation of surface casing through the deepest USDW with the shoe landed 20 to 50 feet into the underlying confining stratum. The OCD requires circulation of cement to surface not only for the surface casing, but also for intermediate and injection casing strings. In some cases, injection wells will have as many as four strings of casing cemented to surface. The OCD allows commingling of produced waters from different zones. However, the Naturally Occurring Radioactive Material (NORM) rule establishes standards for chemical compatibility of injected waters.

The maximum allowable surface injection pressure (MASIP) is based on a 0.2 pounds per square inch (psi)/ft. gradient multiplied by the depth of the top perforation or top of the open-hole completion. The OCD may approve an alternate MASIP if the operator submits an application and the results of a successful step rate test. The alternative pressure is calculated as the break over pressure minus 50 psi. Both approaches should ensure that injected fluids are contained within the permitted injection zone.

The OCD typically uses a 0.5-mile radius AOR but has instituted a one-mile AOR for large-capacity wells injecting in the Silurian-Devonian sequence as a result of the potential for induced seismicity. The OCD has established 1.5-mile minimum spacing requirements for wells injecting more than 20,000 barrels of water per day.

The OCD has concluded that seismic events in two basins (Dagger Draw field of the Delaware Basin and the Raton Basin) are associated with produced water injection. Although there are no reports of personal injuries or property damage associated with these induced seismic events, the OCD has taken the following steps to reduce future seismic events:

- Prohibition of injection into zones below the Silurian sequence (hence, eliminating injection into or at the contact of the Pre-Cambrian basement);

- Requiring additional reservoir information as part of applications for permit including static bottom-hole pressure data, injection surveys and step-rate tests;
- Coordination with the NMBGMR that maps faults and monitors seismic activity, although there is no formal Memorandum of Agreement (MOA) or similar arrangement with them; and
- The use of permit conditions to improve monitoring and documentation of injection pressures and rates.

File Reviews

Prior to the increased activity in the Permian Basin, a well would be reviewed based on the proximity to a new application for injection. If the existing well was in the area of review or adjacent to the location of the proposed new well, then the existing wells would be reviewed especially if the existing well shared the same injection interval. Elements considered included review of records; confirmation of approved injection interval and well construction; review of well construction and repairs; injection activity over time (pressures and volumes reported) including accuracy of reporting; and completeness of well file. At present, due to the increased workload, file reviews are only conducted when there are complaints or other triggering events such as a compliance issue, a change of operator or at the request of district personnel.

MIT Procedures and Exceptions

New Mexico uses the standard annulus pressure test (SAPT) as a demonstration of Part I well component integrity. To demonstrate Part II cement integrity, OCD requires a cement ticket and where necessary a Cement Bond log (CBL), sometimes coupled with a Variable Density Log (VDL). Although not commonly utilized, geophysical methods beyond CBL's can also be considered.

At present, OCD policy provides for an initial pressure of 300 psi with up to a ten percent (10%) pressure loss during the Part I pressure test. However, if the pressure does not stabilize and gradually decreases throughout the test period the well may be considered to have failed. Failed MIT's are required to be resolved within ninety (90) days, although operators may request an extension.

The OCD requires operators to notify an inspector whenever an MIT is to be conducted. MIT due dates are not tracked centrally, but rather, by each inspector. Typically, the inspector contacts the operator by phone to inform them of an MIT that needs to be conducted. The

OCD goal for witnessing MIT's is 100%. However, this is dependent upon inspector availability and under the current staffing levels is not possible.

Cementing and Formation Packer Intervals

OCD rules require that surface casing be set through USDWs and be cemented to surface. Injection casing is also cemented from top to bottom for new Class II wells. The cement used for casing setting is typically required to be a hard setting cement and is based on the depth of the well. However, it is not specified as an API approved or recommended cement. Cement is required to meet a wait on cement compressive strength of 500 psi and the operator must assure that it is in accordance with the American Petroleum Institute (API) current Recommended Practice for Testing Well Cement, RP 10B-2.

When inspectors witness casing and cementing operations, they check for cement circulation, although they do not carry any equipment that can measure cement quality such as mud scales. Operators are required to report improperly cemented or corroded casing that may create underground waste or contamination of fresh waters and must proceed with "diligence" to eliminate the hazard. The OCD goal for witnessing of surface casing setting is one hundred percent (100%). However, this is dependent upon inspector availability and under current staffing levels this percentage of MIT witnessing is not possible

Packers are routinely required for most newly completed and converted wells. However, this requirement is not specified by rule. Regardless, operators are required to submit as-built completion reports within 45 days of well completion and a report within 10 days after the setting of each casing string.

Conduct and Management of Field Operations by OCD

Approximately twenty-five to forty percent (25%-40%) of inspector time is devoted to UIC activities. As in a large percentage of states, routine inspections of UIC Class II wells are conducted in conjunction with general inspections and regulatory activities associated with producing wells and lease facilities. While inspectors do not currently utilize an inspection checklist, the OCD is planning to begin using a standardized set of inspection criteria soon. Inspectors do not carry a pressure gauge as operators are expected to have gauges on injection line and casing/ tubing annulus. However, this is not a rule requirement.

Inspections are conducted based on an individual inspector's time availability and inspection need. While the goal of OCD is to inspect UIC wells at least once annually, the determination of

inspection frequency is generally at the discretion of the inspector and the district supervisor. Given the current staffing levels and the number of wells for which each inspector is responsible, annual inspections of all UIC wells in the state is not possible.

Inspections are recorded in an electronic database and are held indefinitely. Inspectors use tablets in the field to enter inspection or testing data and access previous information such as well records and previous inspections, testing and injection limits. If the inspectors can't record the information on the tablet or sync to the database, they can use an online portal. Inspections may be tracked using an electronic compliance module in the database. Due to current staffing levels inspection reports are only reviewed by the District Supervisor if a specific issue is found during an inspection.

Compliance and Enforcement

The OCD enforcement procedures typically begin with a notification to operators by the inspector unless the compliance issue is considered major. When major violations occur, the inspector notifies the district supervisor and the Santa Fe office. In such cases Santa Fe management and legal staff make the final decision regarding enforcement action. Generally, the first formal action taken is a Notice of Violation (NOV). All formal actions are subject to a hearing before an OCD hearing examiner and further appeal to the Oil Conservation Commission. All hearings regarding enforcement are held in Santa Fe.

Beginning January 1, 2020, the OCD will have the authority to levy civil penalties for violations of the Oil and Gas Act. The process for issuing NOV's and conducting hearings will be proposed by the OCD in a rulemaking hearing before the OCC on January 2, 2020. It is proposed that for the OCD to assess a financial penalty, a hearing will be required unless the parties agree to the penalty. As the statutory authority has just been granted to assess civil penalties, the OCD does not currently use a penalty matrix or have a penalty schedule but will seek to create a penalty calculation method in the future.

Emergency and Citizen Complaint Response Procedures and Processes

It is the policy of OCD to respond to complaints the same day they are received. Citizen complaints and emergency situations are logged into the OCD's inspection database. Once the complaint is received, the District Supervisor mobilizes an Inspector to the location to verify the validity of the complaint. If the complaint is valid, OCD then contacts the operator to resolve the issue. If the complaint is urgent in nature, OCD may notify the operator while the inspector is traveling to the site so it can be quickly addressed. After the issue is resolved, OCD contacts

the complainant to let them know how the issue was resolved. The following is an overall list of the identified strengths of the UIC program and the review teams' suggestions for program improvement:

Identified Strengths

- The Class II program staff is knowledgeable and experienced and demonstrates a high degree of technical competency.
- The UIC Program Manual is an effective tool to assure that OCD staff and well operators are aware of all UIC program requirements, leading to increased program efficiency.
- The OCD is commended for requiring and documenting local groundwater quality and using multiple sources of information to identify USDW's before Class II wells are constructed or operated. These standards serve as a model for consideration by other state or tribal Class II programs.
- The use of a ½ mile Area of Review as a standard AOR enhances USDW protection.
- The use of multiple casing strings cemented from top to bottom for USDW protection is a positive aspect of the program.
- The OCD practice of placing a higher inspection priority on wells based on compliance history, well age, and proximity to urban areas is proactive and results in better environmental and human health protection.
- The team finds that OCD's policy of placing priority on witnessing of MIT's, as well as setting a 90-day resolution period for failed MIT's are proactive ways of assuring well integrity for operating Class II wells.
- The team believes the OCD policy of responding to complaints on the same day they are received is a positive aspect of the program.

Review Suggestions

- The team strongly suggests that the state consider providing the OCD with the authority and budget to acquire significantly increased staff in order to assure effective environmental protection and improve overall protection of public health and safety. This would allow timely processing of permit applications and witnessing of surface casing well construction and MITs at levels approaching 100%, as well as other critical activities. To meet these needs, the team suggests approving the 6 new positions requested by OCD for FY 21 and adding an estimated 22 additional positions, as follows:
 - 1) 5 technical specialists of various disciplines to assist in permitting, including such issues as induced seismicity, fault mapping and groundwater protection;

- 2) 11 district office compliance and environmental specialists to provide a field presence that ensures the integrity of injection wells and the avoidance of spills and contamination of groundwater;
 - 3) 4 administrative and legal staff, such as attorneys and hearing examiners, to handle enforcement, legal and administrative requirements in the central office; and
 - 4) 2 managers to coordinate and direct the UIC program including the large permitting workload.
- The team strongly suggests that the state consider reclassification of positions and other incentives to improve recruiting and retention of OCD staff.
 - The proposed OCD reorganization should be implemented as soon as practicable.
 - The team suggests OCD should consider assuring that their database system is easily accessible to agency staff, the regulated industry and the general public and meets program needs. The team suggests the OCD work with the data system developer to enhance the data system by creating the capability for the system to streamline the permit application process, manage MIT tracking and notifications, as well as inspections and inspection priorities.
 - To further develop seismic monitoring and investigation capabilities, the OCD should continue its efforts to finalize an MOU or other formal agreement to define agency processes and responsibilities and coordinate activities between the OCD and NMBGMR. In view of the potential for induced seismicity in the Permian Basin, additional technical staff specialized in seismic data analysis should be assigned to this function. OCD legal staff should also evaluate the agencies authority to address induced seismicity. Further, OCD should consider consulting with agencies in other states that have dealt with induced seismicity issues.
 - The OCD should consider amending rules to authorize the Director to require operators to install seismometers, continually monitor seismic activity, and report seismic events above specified thresholds, under specifically defined geologic settings or other defensible criteria.
 - The OCD should consider expanding the current 15-day response period following public notice of a permit application to 30 days.
 - The team suggests that OCD consider updating blanket bonding rules for multiple wells to make them more reflective of the actual costs of plugging wells.
 - The team suggests the OCD develop a penalty schedule or matrix by which standardized penalties can be assessed.
 - The team suggests the OCD consider reducing the MIT pressure drop allowance from ten percent (10%) to five percent (5%)

- The OCD should consider equipping Inspectors with multiple gauges for the purpose of witnessing MIT's and determining injection pressures. This would also require operators to equip wells with a standardized gauge fitting and shutoff valves.



January 8, 2020