

REQUIREMENTS FOR IDLE WELL TESTING AND MANAGEMENT

PUBLIC COMMENT SUMMARY AND RESPONSE

**First 15-day Public Comment Period:
October 29, 2018 – November 14, 2018**

The following comments, objections, and recommendations were made regarding the proposed Requirements for Idle Well Testing and Management rulemaking action during a public comment period beginning October 29, 2018 and ending November 14, 2018.

Over the course of the public comment period, the Division received a number of public comments via email. These comments ranged from detailed comments on the proposed requirements to general concerns about groundwater protection.

To facilitate the process of reviewing and responding to comments, the Division assigned a unique numerical signifier to each comment. This signifier consists of three components: first, a unique code number assigned to each commenter; second, a separating hyphen; third, a sequential number assigned to each comment from the identified commenter. The chart below lists the code number for each commenter. Within this document, you will find either grouped or individual numerical signifiers, followed by a summary or specific comment, followed by a response (*italicized*).

Commenters

Number	Name and/or Entity
0001	Chevron
0002	E&B Natural Resources
0003	State Building and Construction Trades Council of California
0004	California Independent Petroleum Association
0005	California Resources Corporation
0006	Dr. Tom Williams
0007	SoCalGas
0008	Wild Goose Storage, Lodi Gas Storage, Gill Ranch Storage, Central Valley Gas Storage
0009	Sentinel Peak Resources

Numeric codes at the beginning of each comment summary can be used to locate the summarized comment in the marked-up version of the written comment submission.

Acronyms

Division	Department of Conservation, Division of Oil, Gas, and Geothermal
DOGGR	Department of Conservation, Division of Oil, Gas, and Geothermal
USDW	Underground Source of Drinking Water
PRC	Public Resources Code
US EPA	United States Environmental Protection Agency

General

0004-3

The commenter requests that the Division commit to working with operators by conducting a series of workshops after the regulations are adopted to thoroughly educate operators on the requirements of the regulations.

Response to comment 0004-3: While not currently scheduled, the Division intends to hold a series of workshops to educate operators about these regulations before they go into effect.

0005-1, 0003-1

The Division's existing idle well testing requirements recognize the diversity of California's oil and gas fields. The existing testing schedules, pressure testing requirements and field interpretations have recognized the uniqueness and diversity of oil and gas production the California. The updated idle well regulations need to take this uniqueness and diversity into account as well.

Response to comments 0005-1 and 0003-1: ACCEPTED IN PART. The proposed testing parameters are based on programmatic experience, review of other Federal and State rules, surveys of various service companies, and surveys from oil and gas producers. The regulations provide operators regulatory flexibility based upon the condition of their idle wells, the potential risks posed by their wells, and whether their idle wells will be plugged and abandoned or returned to use.

The proposed regulations provide operators the option to pressure test their idle wells at different frequencies. Testing must be repeatedly periodically for as long as the well continues to be an idle well. How soon the next pressure test must be conducted is a function of how much integrity assurance the last pressure test provided, based on how thoroughly the idle well was stress tested. Similarly, the frequency at which fluid-level testing must be conducted depends upon whether the idle well penetrates a USDW.

Similarly, multiple options to satisfy the pressure testing parameters in section 1772.1.1. In addition to pressure testing, an operator may conduct an Inert Gas Depression Test, alternative testing methods that have been approved by the Division on a case-by-case basis as being at least as effective as pressure testing to demonstrate the integrity of the well, and caliper surveys for low-risk wells.

Finally, idle wells that are scheduled to be plugged and abandoned under an Idle Well Testing Plan or Idle Well Management Plan are exempt from the testing requirements of sections 17721, 1772.1.1, or 1772.1.2.

0006-1

<p>“Environmental” needs to be defined and included in the Division’s overall goals along with natural resources.</p>
<p><i>Response to Comment 0006-1: NOT ACCEPTED. As required by PRC, section 3106, the Division must prevent, as far as possible, damage to life, health, property, and natural resources; damage to underground oil and gas deposits from infiltrating water and other causes; loss of oil, gas, or reservoir energy, and damage to underground and surface waters suitable for irrigation or domestic purposes by the infiltration of, or the addition of, detrimental substances. In using “natural resources” to describe the Division’s goals, the language of these regulations remains consistent with the Division’s statutory mandates.</i></p>
<p>0006-5 The commenter suggests the consistent use of the words “Division,” “Supervisor,” “District,” “Deputy Director,” and “Director.”</p>
<p><i>Response to Comment 0006-5: NOT ACCEPTED. Where a requirement may be approved by any person authorized to approve operator requests, the Division generally references “the Division” or “Division staff.” By statute some decisions must be approved by the Supervisor and these regulations reflect these statutory requirements. If testing must be witnessed, it is the appropriate District that witnesses such testing, and these regulations reflect that requirement. The text of the regulations does not include “Deputy Director” or “Director.”</i></p>
<p>0006-16 The commenter requests the consistent use of “will,” “shall,” and “must.”</p>
<p><i>Response to Comment 0006-16: NOT ACCEPTED. These terms are used consistent with their ordinary meanings and do not require additional definition to be understood in context.</i></p>
<p>0006-10 The commenter suggests that idle wells within an Area of Review should be included in an Underground Injection Project permit, and that local stakeholder groups and the Division must coordinate, and the Division must provide updates for each Area of Review.</p>
<p><i>Response to Comment 0006-10: NOT ACCEPTED. The comment is outside the scope of these regulations.</i></p>
<p>0006-22 The commenter suggests that well status codes should be updated. The commenter suggests adding “assigned idle,” “partially plugged but not abandoned nor assigned,” “assigned standing idle,” and “unassigned and unknown.”</p>
<p><i>Response to Comment 0006-22: NOT ACCEPTED. If adopted, these changes would create a substantial burden on operators and the Division without providing any regulatory benefit.</i></p>
<p>0006-23 The commenter requests clarification on where the history of chronic leaks for determining if a production facility is environmentally sensitive will be recorded.</p>

Response to Comment 0006-23: NOT ACCEPTED. The business processes for documenting incidents and making the information available to the public are outside of the scope of this rulemaking.

Gas Storage

0007-1

Idle or active wells penetrating a gas storage reservoir are subject to the mechanical integrity testing requirements of section 1726.6 and must be tested at a specified frequency per subsection 1726.3(d)(3). Underground gas storage wells that become idle will be subject to overlapping and potentially conflicting regulatory requirements under section 1772.1.4 and section 1726.3.

Wells subject to section 1726.3 should not be required to meet the requirement of section 1772.1.4. Alternatively, the commenter recommends the Division clarify primacy provisions for wells subject to both sections 1772.1.4 and 1726.3.

Response to Comment 0007-1: ACCEPTED IN PART. The Division has adopted comprehensive regulations addressing safe operation of underground gas storage facilities, including section 1726.6, which requires mechanical integrity testing for all wells that penetrate a gas storage reservoir. Proposed Section 1772.7 exempts idle wells that are subject to the mechanical integrity testing requirements under section 1726.6 from the testing requirements in proposed section 1772.1, the pressure testing parameters in proposed section 1772.1.1, the engineering analysis in proposed section 1772.1.2, and the requirements for active observation wells in proposed section 1772.5. This is necessary to avoid duplication or conflict with the more stringent requirements that these wells are already subject to.

Under the proposed regulations, within six months of a well becoming an active observation well, the operator must conduct a casing pressure test on the active observation well unless a casing pressure test has been conducted on the well in the past five years. The operator must repeat the testing every 60 months.

If an observation well penetrates a gas storage reservoir and has undergone a pressure test under the Underground Gas Storage Regulations within the past five years, the observation well will not need to undergo an additional pressure test under the idle well regulations. Under these regulations, the observation well will be due for testing 60 months after the pressure test was completed.

Similarly, the Underground Gas Storage Regulations require operators to submit a Risk Management Plan that includes a schedule for pressure testing each well that penetrates the gas storage reservoir of the operator's underground gas storage project. Pressure testing can be conducted at a minimum frequency determined on a well-by-well basis approved by the Division. When submitting the schedule for active observation wells that penetrate a gas storage reservoir, operators may propose to test their observation wells at a 60-month frequency. If the Division is satisfied that this testing frequency will protect life, health, safety, and natural resources, including potential contamination of groundwater, dilution of hydrocarbon resources, and emission of methane and other gases into the atmosphere, the frequency may be approved.

0008-1

The title to section 1772.7 and subsection 1772.7(a) should be amended to remove the reference to “idle.” As currently drafted, subsection 1772.7(a) could unintentionally exclude an active observation well. As a result, active observation wells will be subject to duplicative regulation. Removing the reference to “idle” is necessary to ensure that the Division’s regulations are clear that active observation wells that are subject to the mechanical integrity testing requirements in section 1726.6 can be excluded from the requirements of sections 1772.1, 1772.1.1, 1772.1.2, or 1772.5 for that specific well. Absent this change gas storage operators could be required to adhere to both the proposed regulations and the recently finalized Underground Gas Storage regulations.

Response to Comment 0008-1: NOT ACCEPTED. Idle well is defined by statute at PRC, Section 3008, subdivision (d). An active observation well is not an idle well. An active observation well is defined at PRC, Section 3008, subdivision (c), as a well used for the sole purpose of gathering reservoir data.

Under the proposed regulations, within six months of a well becoming an active observation well, the operator must conduct a casing pressure test on the active observation well unless a casing pressure test has been conducted on the well in the past five years. The operator must repeat the testing every 60 months. If an observation well has undergone a pressure test under the Underground Gas Storage Regulations within the past five years, the observation well will not need to undergo an additional pressure test under the idle well regulations. Under the proposed regulations, the active observation well will be due for testing 60 months after the pressure test was completed.

The Underground Gas Storage Regulations require operators to submit a Risk Management Plan that includes a schedule for pressure testing each well that penetrates the gas storage reservoir of the operator’s underground gas storage project. Pressure testing can be conducted at a minimum frequency determined on a well-by-well basis approved by the Division. When submitting the schedule for active observation wells, operators may propose to test their observation wells at a 60-month frequency. If the Division is satisfied that this testing frequency will protect life, health, safety, and natural resources, including potential contamination of groundwater, dilution of hydrocarbon resources, and emission of methane and other gases into the atmosphere, the frequency may be approved.

0007-2

The Underground Gas Storage Risk Management Plan requires operators to prioritize well work for underground gas storage projects. The Risk Management Plan requires operators complete a risk assessment on a well-by-well basis using a quantitative risk approach. Under these proposed regulations, underground gas storage wells that become idle will be subject to compliance under sections 1772.4 and 1726. To the extent the considerations enumerated in subsection 1772.4(a) are considered to determine prioritization of idle wells for testing and plugging and abandonment for wells that are also subjected to a Risk Management Plan, the commenter recommends the inclusion of a provision to synthesize what is informed by the Risk Management Plan.

Response to Comment 0007-2: NOT ACCEPTED. Where possible, the Division has removed any potential overlap or conflicts between these regulations and the Underground Gas Storage regulations. If an idle well is subject to the mechanical integrity testing requirements of the underground gas storage regulations, section 1726.6, then the operator is not required to meet the testing requirements in section 1772.1, the pressure testing parameters in section 1772.1.1, the engineering analysis in section 1772.1.2, and the requirements for active observation wells in section 1772.5. Because idle

penetrating a gas storage reservoir are exempt from testing, the wells do not need to be prioritized for testing.

Compliance Period

0003-2, 0005-2

The compliance period should be changed from 6 years to 8 years. A rig availability study suggests a 7.2 to 11.5 year implementation period is necessary to comply with these regulations. The current compliance period does not afford operators with deeper and more complex wells adequate time to come into compliance. The compliance period ignores the diversity of California's oil and gas formations and wells, the importance of idle wells to future enhanced oil recovery, and resource constraints. The commenters also suggest consolidation of positions from small operators has benefited the Division since many of those wells would have otherwise ended up as orphan wells for which the Division would be responsible.

0004-1

Operators will face challenges complying with the regulations because of the availability of rigs and personnel to accomplish the testing requirements in an effective and safe manner.

***Response to comments 0003-3, 0004-1, 0005-2: NOT ACCEPTED.** The Division weighed multiple options to address issues with rig availability, staffing issues, and other barriers to complying with these regulations. The proposed regulations offer flexibility and options for complying with these regulations within the compliance period.*

While many operators initially suggested a compliance period of 48 months, after further review the operators requested the compliance period be extended. In response, the compliance period has been extended from four years to six years. Operators are now afforded an additional two years to complete testing on wells that are idle at the effective date of the regulations.

Multiple changes have been made to the regulations to address rig availability issues. To satisfy the pressure testing requirement, an operator may conduct an Inert Gas Depression Test, alternative testing methods that have been approved by the Division on a case-by-case basis as being at least as effective as pressure testing to demonstrate the integrity of the well, and caliper surveys for low-risk wells. These testing options will not always require a rig, and can be done more quickly and cheaply than a casing pressure test, and this should alleviate some difficulties related to rig availability. Additionally, wells scheduled for plugging and abandonment under an Idle Well Management Plan or Testing Waiver Plan are exempt from testing requirements. The Testing Waiver Plan has also been extended to a rolling eight-years. The extended compliance period and the rolling eight-year period provided by the Testing Waiver Plan should afford service contractors additional time to staff qualified personnel.

Given that few idle wells ever return to service, the Testing Waiver Plan can substantially reduce the number of wells that an operator must test. If an operator plans to utilize the idle well for enhanced oil recovery, the operator must still demonstrate that the well is viable to return to use based upon the condition of the well and the ability of the well to access a formation.

The Division appreciates that deeper and more complex wells may be more difficult to bring into compliance. However, idle wells that are not properly tested and maintained for integrity pose a range of threats to life, health, property, and natural resources, including potential contamination of groundwater, dilution of hydrocarbon resources, and emission of methane and other gases to the atmosphere. Existing requirements provide operators with little incentive to properly plug and abandon idle wells or return the wells to use. The proposed regulations provide aggressive, but feasible regulations that encourage proper management of idle wells.

0004-2

The addition of low-priority idle wells is an acknowledgment that these wells pose different risks than other wells. Low-priority idle wells should have a separate and longer implementation timeline to account for resource constraints and allow operators to better prioritize testing.

***Response to comment 0004-2: ACCEPTED IN PART.** The timeframe for compliance with the Idle Well Inventory and Evaluation requirements has been extended to January 31, 2021, allowing operators more than eighteen months to comply. Section 1772.4, prioritization of idle wells for testing and plugging and abandonment, has been added to the proposed regulations. An operator must consider these factors when prioritizing idle wells for testing or plugging and abandonment under a Testing Compliance Work Plan, Testing Waiver Plan, and Idle Well Management Plan. These factors will allow the Division to evaluate the comparative risk of the operator's idle wells. The information received from operators will be used to facilitate a risk-based approach testing and plugging and abandonment under an operator's Testing Compliance Work Plan, Testing Waiver Plan, and Idle Well Management Plan. Based upon these factors low-risk idle wells may be prioritized for testing later in the compliance period. There may, however, be instances in which a low-risk idle wells may be prioritized. For example, if a well has surface obstacles or other impediments that would otherwise prevent access to the well and the well becomes available.*

1760. Definitions

0006-2, 0006-6, 0006-8

The commenter recommends amending the definitions of "sumps," "designated waterways," "fluid," "gas," and "secondary containment."

***Response to Comments 0006-2, 0006-6, and 0006-8: NOT ACCEPTED.** The proposed regulations change the regulations for idle well testing and management. The definition section is modified by the inclusion of new definitions, related only to idle well testing and management. this package does not consider the other definitions in this section that are not related to idle wells and the provisions of this package. Sumps, designated waterways, and secondary containment are not related to idle well testing and management and changes to these definitions are outside the scope of this rulemaking.*

0006-6

The commenter suggests defining "determination process," "reasonably," "satisfaction," "known," and "history."

***Response to Comment 0006-6: NOT ACCEPTED.** These definitions are not needed within the proposed regulations because the terms are used consistent with their ordinary meaning.*

0006-7

The commenter suggests an amendment to the definition of “idle well,” and suggests providing a definition for “buried well” or “unplugged abandoned well.”

Response to Comment 0006-7: NOT ACCEPTED. Idle well is defined by statute under AB 2729 and can be found at PRC, section 3008, subdivision (d). The statutory definition of idle well cannot be changed by regulation.

“Buried well” is not used in the text of the proposed regulations. A definition of unplugged “abandoned well” is not necessary. A well cannot be abandoned without being plugged.

0006-14

The commenter suggests providing a definition for “effective” and adding process and data requirements for quantitative demonstrations of effective or effectiveness.

Response to Comment 0006-14: NOT ACCEPTED. The definition of “effective” is not necessary within the proposed regulation because the term is used consistent with its ordinary meaning.

0006-15

The commenter suggests providing definitions for “diligent,” “feasible,” “infeasible,” “viable,” “economic efficiencies,” and “particular manner” and suggests adding process and data requirements for quantitative demonstrations of the terms.

Response to Comment 0006-15: NOT ACCEPTED. These definitions are not needed within the proposed regulations because the terms are used consistent with their ordinary meaning.

1772. Idle Well Inventory and Evaluation

0009-1

The Idle Well Inventory requires operators to submit information that is already in the Division’s records. Records related to mechanical integrity testing and indications of downhole issues are already in the well file and do not need to be resubmitted under this section.

Response to Comment 0009-1: NOT ACCEPTED. Subsection 1772(b) provides, that unless requested by the Division, information that has previously been submitted to the Division does not need to be resubmitted.

0004-9

Operators with significantly high idle well inventories should not have to submit their Testing Compliance Work Plan until December 31, 2019.

Response to Comment 0004-9: NOT ACCEPTED. Public Resources Code section 3206.1, subdivision (a), requires the Division to review, evaluate, and update its regulations pertaining to idle wells. Section 1772 meets this mandate by ensuring that data about risk indicators is readily available to facilitate a risk-based approach for the management of idle wells, particularly when prioritizing plugging and abandonment or testing under an Idle Well Testing Compliance Plan, Idle Well Testing Waiver Plan, or Idle Well Management Plan. Operators must submit their Idle Well Inventory and Evaluation to the

Division in a digital format by January 31, 2021, or within one year after becoming the operator of an idle well, whichever comes later, and requires updates to the Idle Well Inventory and Evaluation each year after by January 31. Unless requested by the Division, an operator would not have to resubmit any information that may have already been submitted in compliance with other requirements of these proposed regulations. The Division believes that the two years provided for initial compliance with section 1772 is sufficient, but may allow additional time for the initial submission based on an operator's total number of idle wells and challenges the operator faces in compiling the information.

While the Testing Compliance schedules the completion of testing over a six-year period, the first year covers testing for only five percent of the wells on the Testing Compliance Work Plan. After the effective date, operators should focus on prioritizing the five percent of wells that will be tested the first year. After the first year, the Testing Compliance Work Plan may be revised with Division approval to adjust for any changes an operator may want to make.

1772.1. Testing of Idle Wells

0001-1

The commenter questions the need for both a fluid level test and pressure test. From a technical standpoint, the absence of fluid above the base of fresh water would suggest that a pressure test is not warranted. Section 1723.9, which has been removed from the proposed regulations, recognized this fact by requiring additional tests based on the recorded level of fluid. The commenter recommends incorporating language in section 1772.1 that makes the casing pressure test contingent upon the result of the fluid level test.

Response to Comment 0001-1: NOT ACCEPTED. *Public Resources Code section 3206.1 requires that the proposed regulations include appropriate testing, as determined by the supervisor, to determine whether the fluid level is above the base of a USDW. The Division is further required to include appropriate testing, as determined by the supervisor, to verify the mechanical integrity of the well. Accordingly, the Division's regulations include a fluid level test to determine if the fluid level is above the base of a USDW and a pressure test to verify the mechanical integrity of the well.*

A fluid-level test is a passive test in which the height of fluid in the wellbore is measured using acoustic methods. The height of the fluid column can be used to calculate the pressure of the reservoir in the completed zone(s) and may be a proxy for changing reservoir conditions. An increase in the fluid column over time may indicate an increase in reservoir pressure due to changing subsurface conditions or a hole in the casing which is allowing fluid to migrate into the wellbore. If a fluid level measurement is above the base of a USDW, then there is risk for migration of fluid from the wellbore into the USDW, or, if the well lacks mechanical integrity, vice versa. If the location of the base of USDW is unknown, then it is necessary to presume that the fluid level is above the base of USDW in order to ensure protection of groundwater. But if it has been demonstrated that the well does not penetrate a USDW, then fluid level testing under subdivision (a)(1) is not required at all. These regulations provide for a gradual phase in of pressure testing requirements for idle wells through 2025, but after April 1, 2025, if the fluid level in an idle well is above a USDW, then the well must be pressure tested on an expedited, 90-day timeframe. This is necessary because the idle well poses a potential threat to higher-quality groundwater

It is necessary to repeat the fluid-level test periodically because the fluid level in a well is not necessarily constant and may vary due to several factors, including, but not limited to, production and injection in different oil zones and annual precipitation.

Pressure testing is necessary because it is the most effective method of ensuring the mechanical integrity of a well, and a well that lacks mechanical integrity poses a range of threats to life, health, safety, and natural resources, including potential contamination of groundwater, dilution of hydrocarbon resources, and emission of methane and other gases into the atmosphere. Testing the well from the surface to a depth 100 feet measured depth above the uppermost perforation, immediately above the casing shoe of the deepest cement casing, or immediately above the top of the landed liner, whichever is highest ensures that the well is being tested in such a way to prevent contamination of not only groundwater but the hydrocarbon resources, and ensure that emission of methane and other gases to the atmosphere is not occurring. Testing under subdivision (a)(2) must be conducted in accordance with the parameters specified in section 1772.1.1, discussed below. An idle well that does not penetrate a USDW may pose less of a threat to USDWs, but the well can still provide a conduit for fluid migration and contaminate hydrocarbon zones. Testing is necessary to detect such migration even in the absence of a known USDW.

0002-1

There may be times that a company does not achieve the annual targets in their Idle Well Management Plan and are therefore prohibited from submitting another Idle Well Management Plan for a number of years. The company is then required to pay idle well fees and, under subsection 1772.1(b), must bring the well into compliance within 12 months. This could create severe financial hardships and pressure on producers. If a company is not able to meet their Idle Well Management Plan as the year progresses, the company should be able to have a dialog with the Division to determine a path forward to remain in compliance and the operator should be allowed to continue submitting an Idle Well Management Plan.

***Response to Comment 0002-1: NOT ACCEPTED.** This section has been revised. If an operator fails to successfully comply with the testing requirements, the operator may now schedule the well for plugging and abandonment under an approved Idle Well Management Plan or an approved Testing Waiver Plan.*

PRC, subsection 3206(a)(2)(B)(v) provides that if an operator fails to comply with the terms of their Idle Well Management Plan, as determined by the supervisor after the annual performance review, the operator may not propose a new idle well plan for the next five years. These regulations cannot change the statutory requirement prohibiting an operator from submitting an operator from proposing a new Idle Well Management Plan for the next five years.

0004-4

Subsection 1772.1 (a)(2) does not provide for any mechanical integrity testing alternatives to casing pressure tests. Additional industry accepted practices can demonstrate mechanical integrity, including a Nitrogen Fluid-Level Depression Test (ADA test), static temperature and spinner surveys, and casing caliper logs.

***Response to Comment 0004-4: ACCEPTED IN PART.** Subsection 1772.1(a)(2) does provide alternatives to satisfy the casing pressure test requirements. Section 1772.1.1 provides the testing parameters to satisfy the casing pressure test requirements. Under subsection 1772.1.1(b), an operator may conduct*

an Inert Gas Depression Test to satisfy the pressure testing requirements of Section 1772.1. Similarly, under section 1772.1.1(c) an operator may use an alternate mechanical integrity testing method if the alternative method has been approved by the Division on a case-by-case basis as being at least as effective as pressure testing to demonstrate the integrity of the well. Finally, if a well is a low-priority idle well, the operator may satisfy the pressure testing requirements of section 1772.1 by conducting a caliper survey, provided the Division has approved the testing protocols as effective for evaluating well integrity.

0005-3

To ensure safety the pressure used in testing should be the lowest necessary to establish the integrity of the equipment being tested for the service to which it is put, and no more than the pressure used to test other components connected to the equipment being tested. The Division's acceptance criteria should recognize that depth and temperature changes in a well connected to an oil and gas formation directly affect pressure testing and introduce fluctuations, without indicating any loss of integrity. While the Division has cited numerous US EPA and state sources regarding pressure testing in the draft idle well regulations, the draft regulations propose the highest testing pressure among all of those resources cited and set criteria with the narrowest tolerances. This introduces safety and operational concerns without providing meaningful further assurance of well integrity for idle wells.

***Response to Comment 0005-3: NOT ACCEPTED.** The proposed testing parameters are based on programmatic experience, review of other Federal and State rules, surveys of various service companies, and surveys from oil and gas producers. The testing should not diminish the integrity of the well, unless the well is experiencing integrity deficiencies that should be remediated.*

How soon the next pressure test must be conducted is a function of how much integrity assurance the last pressure test provided, based on how thoroughly the idle well was stress tested:

- Repeat testing is required within 48 months for wells that are pressure tested to 200 psi or that are tested with inert gas depression testing, passive testing, or other alternatives to pressure testing.*
- Repeat testing is required within 72 months for wells that are pressure tested to 500 psi.*
- Repeat testing is required within 96 months for wells that are pressure tested to 1,000 psi.*

These varying testing periods are proportional to the risk exhibited by the well. If an idle well can be successfully tested to 1,000 psi, there is significantly less concern about the near-term possibility of integrity failure than if the idle well was only pressure tested to 200 psi.

0009-2

The proposed regulations do not provide a testing interval for low-priority idle wells. The commenter suggests amending subsection 1772.1 (a)(2)(c) to specify that if an operator conducts passive testing the test shall be repeated within 96 months.

***Response to Comment 0009-2: NOT ACCEPTED.** Section 1772.1(a)(2) allows for longer testing periods for testing at greater pressures. As passive testing does not stress wells in a manner that provides assurance of future integrity, section 1772.1 (a)(2)(D) provides that if an operator conducts passive testing, the testing must be repeated within 48 months.*

0006-11

The commenter suggests that ground surface monitoring must clearly identify and mark locations within five feet, the hydrocarbon gas levels within five ppm, provide notice of the responsible party and responsible gas monitor, and must include both uplift and subsidence over the well.

Response to Comment 0006-11: NOT ACCEPTED. Under subsection 1772.1(d)(1)(A), periodic gas monitoring at the surface is only one method of ongoing monitoring for inaccessible wells. Operators must submit a monitoring plan for the Division's review and approval to ensure that any hazards posed by the well are identified and addressed so as to prevent damage to life, health, property, and natural resources. If appropriate, the Division may consider requiring the suggestions provided by commenter be included in an operator's monitoring plan.

0006-12

The commenter suggests that subsection 1772.1(c) be revised to: "(c) Before conducting any test required under this section, the operator shall give the appropriate district office 24 hours' notice, or a shorter notice acceptable to the district office, so that a Division inspector may witness the testing. All testing shall be documented and copies of test results shall be submitted to the Division in a digital format within in real time ~~60 days of the date the test~~ is conducted, except that when fluid-level testing indicates that fluid is, or is presumed to be, above the base of a USDW test results shall be submitted within five ~~30~~ days."

Similarly, under subsection 1772.1.1(a)(4), test results should be submitted to the Division in a digital tabular format within 10 days rather than 60 days.

Response to Comment 0006-12: NOT ACCEPTED. The infrastructure necessary for the operator and the Division to transmit and receive real-time data would be costly and burdensome without a clear regulatory benefit. Often pressure and fluid level tests are completed by service companies. The timeframes prescribed by the proposed regulations, 60-days for pressure test results and 30-days for a fluid level test indicating fluid above the base of a USDW, provide the appropriate amount of time for service companies to send the testing results to the operator, for the operator to submit those results to the Division, and provide the operator adequate time to pressure test the well within 90 days if the fluid-level test indicates that the fluid level is above the base of a USDW.

1772.1.1. Pressure Testing Parameters

0001-2

The three percent deviation mandated in the draft regulations will be difficult to comply with for deeper wells. The commenter recommends adding language that sets the exception at five percent for wells deeper than 1000 feet.

Response to Comment 0001-2. NOT ACCEPTED. The pressure testing parameters are designed to ensure that the well has integrity and that small leaks that would indicate a lack of well integrity are identified. The pressure testing parameters require a stabilized pressure for 30 minutes with no more than a three percent change, consistent with EPA Region 5 guidance. A ten percent increase is permitted for steam injection wells subject to thermal stresses. Operators will be responsible for ensuring the well has stabilized before beginning the test. The documentation reviewed by the Division did not contemplate pressure deviations based upon the depth of a well, and as such, no such exception for deeper wells has been provided. These parameters were developed by Division engineers in

consultation with experts from the Sandia, Lawrence Livermore, and Lawrence Berkeley National Laboratories in an effort to develop consistent and effective pressure testing parameters to be employed whenever pressure testing is required for oil and gas wells. They are based on industry standards and practices, and the Division's extensive experience and expertise in supervising the pressure testing of wells.

0001-3

The proposed 500 psi threshold for determining if inert gas depression testing is allowable is unnecessarily arbitrary and should be revised to accommodate actual reservoir pressure. The determination of a successful test is guided by whether the fluid is static and a change in pressure is documented. Many reservoirs achieve an equalization pressure below 500 psi. The commenter recommends revising the language to delete the 500-psi threshold in favor of a performance-based standard that allows site specific recognition of varying reservoir pressures.

***Response to Comment 0001-3. NOT ACCEPTED.** The addition of the option to use inert gas depression testing to satisfy the pressure testing requirements is in response to concerns voiced by operators about the availability and costs of rigs to complete the required testing. For the types of wells that will be subject to testing under the parameters of section 1772.1.1, inert gas depression testing is generally an acceptable alternative to conventional pressure testing. Because inert gas depression testing can often be done without putting a rig on the well, it is a less burdensome option for complying with the testing requirements of these regulations. An inert gas depression test may not be used to satisfy the pressure testing requirements of Sections 1752, 1772.1, or 1772.5 if the computed necessary pressure for testing the well is less than 500 psi. Given the difference of compressibility in gas and liquid and corresponding differences in pressure gradient, an inert gas depression test at 500 psi is roughly equivalent to a standard pressure test at 200 psi. This minimal pressure is necessary to identify the presence of any existing leaks and to demonstrate the near-future integrity of the casing. The inert gas depression testing parameters are designed to ensure the well has integrity and that small leaks that would indicate a lack of well integrity are identified. If the Inert Gas Depression test used a lower surface pressure, the casing would experience less pressure and the test would not be equivalent.*

0004-5

The duration of testing and the allowed pressure decline are excessively restrictive. Historically, the Division's casing pressure tests parameters for idle wells require the pressure test to be continuous for 15 minutes and with no more than a ten percent decline in pressure. The regulations would require the test to be continuous for 30 minutes, with no more than a five percent decline in pressure in the first 15 minutes, and no more than one percent additional decline thereafter during the second 15 minutes.

The proposed testing parameters are not technically appropriate for two reasons. First, the presence of expanding air or changing temperature. Air can be directly introduced from the fill-up line after a dry installation. Also, some annuli are not full, and added fluid can aerate the fluid, requiring long wait times for the air bubbles to coalesce and rise to the top to be bled off. Second, thermal flux. Idle wells have attained a static condition after years of being idle. To conduct the pressure test additional fluid will have to be introduced to most idle wells. These fluids will typically be cooler than fluids already in the wellbore. Since the well is a closed system to the transfer of matter but is not closed to energy transfer there needs to be allowance in the testing requirements for associated pressure changes. Using the proposed minimum allowable test pressure of 200 psi, the required parameters would be no

more than ten psi decline for the first 15 minutes and no more than two psi decline for the final 15 minutes.

Response to Comment 0004-5: NOT ACCEPTED. The pressure testing parameters have been modified to require a stabilized pressure for 30 minutes with no more than a three percent change from the initial pressure. The pressure testing parameters further require a stable column of fluid that is free of excess gasses in the wellbore before commencing pressure testing, but the regulation does not specify benchmarks to determine when this has been achieved. Achieving stability before commencing pressure increases the likelihood of a passing test, and the Division will defer to the operator's knowledge of its own operating conditions in determining how long a well should sit before beginning testing. The minimal pressure of 200 psi is necessary to identify the presence of any existing leaks and to demonstrate the near-future integrity of the casing. The operator may elect to pressure test at a high initial pressure, as the greater demonstration of mechanical allows the operator more time until repeat testing is required. A pressure test is successful if there is no more than a three percent change in pressure over a continuous 30-minute period, unless the well is within the area of review of a steam injection well. For wells within the area of review for a cyclic steam injection well or a steamflood injection well, an increase in pressure of as much as 10 percent is allowable as the increase may be attributed to the temperature in the area of the wellbore. However, these testing parameters may be modified on a case-by-case basis as needed to ensure an effective test of the integrity of the casing. This is necessary as effective parameters for pressure testing may vary based on the specific characteristics of a well, such as the age of the well, casing thickness, and corrosion factors.

0004-6

The proposed regulations require the casing pressure test be conducted from surface to 100 feet above perforations, cemented casing shoe or top of liner. The test should be conducted to a depth that ensures protection of USDW or some minimum depth for wells without USDW. Testing wells to the proposed depth adds no additional protection for USDW while adding enormous strain to already limited resources.

These same comments apply to Section 1722.1.1(b) for Inert Gas Depression Testing.

0005-4

The proposed idle well testing regulations require the casing pressure test to be conducted from the surface to the highest of 100 feet above perforations, cemented casing shoe or top of liner, with a similar requirement for the inert gas depression test. These depth requirements present both safety and resource issues without providing additional protection for USDW or the surface.

Testing should be conducted to the following depths: (a) if the well penetrates a USDW, to a depth 100 feet below the estimated base of fresh water to protect the USDW; or (b) for wells that do not penetrate a USDW, to a depth of ten percent of the true vertical depth of the well to protect the surface.

0009-3

Subsection 1772.1.1(b) should be amended to align with the theme of USDW protection. The fluid displacement depth requirement should be changed to include "...or to displace the fluid level to at least 200 feet below the base of freshwater, whichever is less."

Response to Comments 0004-6, 0005-4 and 0009-3: NOT ACCEPTED. The Division has the statutory duty to protect life, health, property, and natural resources. Although USDWs are among the resources that the Division must protect, they are not the only resources requiring protection. PRC section 3106, subdivision (a), provides that the Supervisor must prevent “damage to underground oil and gas deposits from infiltrating water and other causes; loss of oil, gas, or reservoir energy, and damage to underground and surface waters suitable for irrigation or domestic purposes by the infiltration of, or the addition of, detrimental substances.” An idle well that does not penetrate a USDW may pose less of a threat to USDWs, but the well can still provide a conduit for fluid migration and contaminate hydrocarbon zones. Testing is necessary to detect such migration even in the absence of a known USDW.

0009-4

Subsection 1772.1.1 (b) should be amended to allow a three percent change rather than a one percent change. The inert gas testing will either hold or not. Achieving a one percent demonstration over a full hour merely prolongs the testing time but does not provide greater indication of well integrity.

The calibrated gauge that must be used to record the pressure should require an accuracy within three percent of the testing pressure, rather than one percent.

Response to Comment 0009-4: NOT ACCEPTED. The proposed testing parameters are informed by technical guidance published by the Railroad Commission of Texas, as well as the Division staff’s own experience and expertise with this type of testing. Small leaks may take time to manifest and holding pressure for a full 60 minutes provides greater assurance that no such leaks exist.

Gauges with this level of accuracy are commonly available.

0004-7, 0005-5

Temperature surveys should be included as a passive testing option for low-priority idle wells. The proposed regulations only allow for a casing caliper survey. Casing caliper logs only work on wells that have the tubing removed, requiring additional resources. Temperature surveys can be accomplished with tubing in the well.

Response to Comments 0004-7 and 0005-5: NOT ACCEPTED. If an idle well has been inactive for many years, the wellbore fluid and the associated reservoir are often the same temperature, making it impossible to detect a temperature change associated with a mechanical integrity issue.

While a temperature or noise log may show a static environment, the tests would be inconclusive with respect to competency of the well bore. Temperature surveys can also fail to detect small leaks, where the temperature differential would be very small. The temperature can dissipate before changes in temperature could be recorded, making it impossible to detect any temperature differential, rendering the temperature survey inadequate.

1772.1.2. Engineering Analysis for 15-Year Idle Wells

0002-2

The engineering analysis for 15-year idle wells requires the well demonstrate mechanical integrity. Improvements to integrity should take place as part of returning the well to injection or production.

“The requirement to improve integrity should be aligned with the Idle Well Management Plan and not ahead of the restart of the well.”

Response to Comment 0002-2: NOT ACCEPTED. Public Resources Code section 3206.1, subdivision (a)(4), requires the Division to review, evaluate, and update its regulations pertaining to idle wells, including requirements for operators to submit an engineering analysis for idle wells that have been idle for 15 or more years. The engineering analysis must demonstrate to the Division’s satisfaction that the idle well is viable to return to operation in the future. Section 1772.1.2 satisfies this statutory mandate by requiring operators to submit information that demonstrates the viability of wells that have been idle for 15 years.

An approved Idle Well Management Plan requires an operator eliminate a percentage of their long-term idle wells each year by either plugging and abandoning the wells or returning the wells to use. If a well is scheduled for plugging and abandonment, the well is exempt from the engineering analysis requirement. If, on the other hand, the well is being returned to use the well must demonstrate mechanical integrity to ensure the well is not posing a threat because the casing is damaged or there is an obstruction in the casing. The casing pressure test indicates whether there is a hole or other damage to the casing that allows the migration of wellbore fluids into the surrounding subsurface or vice versa. The clean out tag verifies the total effective depth of the well, identifies any possible obstruction, and cleans out the obstruction to ensure the well is not degrading to the point that it poses a threat, and to ensure that it does not become infeasible to plug and abandon the well. The well must demonstrate mechanical integrity before being returned to use because a well that lacks mechanical integrity poses a range of threats to life, health, safety, and natural resources, including potential contamination of groundwater, dilution of hydrocarbon resources, and emission of methane and other gases into the atmosphere.

1772.1.3. Casing Diagrams

0001-4

Subsection 1772.1.3(d) should be removed. Subsection 1772.1.3(b)(3) will provide the Division the information necessary to calculate the true vertical depth (TVD), if necessary, for wells that are not vertical. Including the TVD in the casing diagram is redundant and is highly subject to interpretation.

Response to Comment 0001-4: NOT ACCEPTED. Operators should have this information readily available to provide to the Division. There are several opportunities to measure the TVD during drilling, completion, and well survey. The TVD is needed to calculate the pressure to verify and evaluate the amount of cement present to protect against fluid migration.

0004-8

Subsections 1772.1.3 (a) and 1772.1.3 (b) should be amended to “reflect the availability of well casing diagrams to the extent that they are actually available.”

Response to Comment 0004-8: NOT ACCEPTED. A casing diagram is a valuable tool for effective oversight. The information required for the casing diagram is necessary for the Division’s evaluation of whether the well is viable for future use considering the well’s construction and condition.

0006-17

In subsection 1772.1.3 (b)(3), the commenter suggests operators should be required to include a graphical depiction of the wellbore path, along with other wells within 1,000 feet of the well path.

Response to Comment 0006-17: NOT ACCEPTED. The suggested revisions do not align with the intent of this section. The intent of the section is for the operator to provide a casing diagram, not a cross section like the commenter appears to suggest. The data collected in subsection 1772.1.3(b)(3) is sufficient for the Division to generate a graphical depiction, if necessary. There is not always a need for a graphical depiction and to require operators to submit one would be unduly burdensome without providing any regulatory benefit. Similarly, requiring operators to provide information regarding all wells within 1,000 feet of the well path would be overly burdensome to operators without providing any regulatory benefit.

0006-18

The commenter suggests amending subsection 1772.1.3(e) by requiring that operators submit both the graphical casing diagram and flat file data set.

Response to Comment 0006-18: NOT ACCEPTED. There is no need for both a flat file data set and a graphical casing diagram, as they would contain the same information. The flat file data set is encouraged because it provides raw data that can be manipulated by the Division and can also be analyzed as submitted. The flat file data will also provide the most flexibility for future data systems.

1772.2. Idle Well Testing Waiver Plan

0001-5

It is unclear whether a well placed on a Testing Compliance Plan prior to June 1, 2019 can later be moved to a Testing Waiver Plan at the discretion of the operator.

Response to Comment 0001-5: ACCEPTED IN PART. Under subsection 1772.2(c), subject to Division review and approval, the operator may request to modify the idle wells listed on an approved Testing Waiver Plan. The information required under subsection 1772.2(b)(1) must be provided for any idle wells added to the list. Similarly, after each year of adherence to a Testing Waiver Plan, the operator may add additional wells to an additional year of the plan, provided the addition complies with the requirements of subsection 1772.2(b).

Under subsection 1772.2.1.4, for wells that were idle as of April 1, 2019, if after submitting the Testing Compliance Plan the operator wishes to move a well to a Testing Waiver Plan, the operator must submit a revised Testing Compliance Work Plan to the Division.

1772.4 Prioritization of Idle Wells for Testing and Plugging and Abandonment

0006-3

The commenter suggests that an “abandonment/plugging/idling procedure/process” for assigned idle well and unassigned idle wells must be provided for by either the assigned operator, within a reasonable period, or the assigned subsurface owner, within two years. The commenter clarifies that in the absence of any functioning subsurface owner, operator, lessee, or owner the well must be

properly verified for design and condition and abandoned by a responsible party within two years of assignment. If a field or well does not have a functioning operator, lessee, or owner or the wells has been abandoned without a permit then the subsurface property owner must be assigned responsibility by the Division.

Response to Comment 0006-3: NOT ACCEPTED. As described more fully in the Notice of Proposed Rulemaking Action, the purpose of this rulemaking action is to update the Division's specific regulatory requirements for idle well testing and management. Broad strokes revision of the existing statewide requirements for plugging and abandonment of wells, and for management of idle wells, are outside the scope of this rulemaking.

0006-13

The commenter suggests that idle wells must be restricted to those wells with designated, current, and functioning operators. All idle, buried, and improperly abandoned wells must have Division assigned well operators, field operators, subsurface property owners, or other functioning responsible parties, who have benefited from the well. In the case of orphan wells without current, functioning operator-lessees, the Division must clearly assign responsibilities for such wells to the subsurface property owner.

The commenter further suggests adding the following provision to section 1772.4: "In the event, that no existing operator is assigned to an idle well, the Division shall assign responsibility for such well to the current operator of the unit or field in which the well is located or passes through and such operator shall be responsible for all requirements and activities included in the IWT. In the event that the unit or field has been abandoned without disposition of idle, buried, or inadequately abandoned wells therein, the District shall assign responsibilities for such wells to the current functioning subsurface property lessee or to the current subsurface property owner who shall be designated as responsible for all requirements and activities included in the IWT."

Response to Comment 0006-13: NOT ACCEPTED. Idle well is defined by statute at PRC section 3008, subdivision (d). The statutory definition of idle well cannot be changed by these regulations. Wells are designated as low-priority based upon the risk factors posed by the well and are thus subject to less rigorous testing requirements. It is incumbent upon the operator to demonstrate to the Division's satisfaction that the well should be classified as a low-priority idle well. As provided above, if there is no current operator for the well, liability for the well is governed by statute and is outside the scope of this rulemaking.

0006-19

The commenter suggests amending subsection 1772.4(a) to require operators to provide documentation and quantitative modeling when prioritizing idle well for plugging and abandonment.

Response to Comment 0006-19: NOT ACCEPTED. Section 1772.4(a)(1) through (10) provides operators with a list of factors that must be considered when prioritizing wells on a Testing and Compliance Work Plan, a Testing Waiver Plan, or an Idle Well Management Plan. The purpose of this section is to ensure that specific risk factors are considered, so that an operator and the Division can make informed decisions about which wells should be prioritized for testing or plugging and abandonment. The factors provide sufficient information to inform prioritization of this work. Requiring operators to provide

quantitative modeling, in addition to the information already being provided, would be costly and burdensome without a clear regulatory benefit.

1772.6 Verification of Production or Injection

0006-20

The commenter suggests amending section 1772.6 to require that operators provide verified documentation that the well is capable of producing or injecting.

0006-21

The commenter suggests amending the list of verifying documentation in section 1772.6 to include data related to injection.

***Response to Comment 0006-20 and 0006-21: NOT ACCEPTED.** Section 1772.4 would require that an operator who reports injection or production from a well must demonstrate, at the Division's request, that the well can, and did, produce or inject as reported. Section 1772.4 would allow the Division to require an equipment check, well test, or verifying documentation including, but not limited to:*

- Operability of the production or injection equipment*
- Filling of production tanks*
- Field production reports*
- Lease oil inventory at the beginning or end of the month*
- Run tickets or automated shipping data, which includes the shipping and/or purchasing company and the volume received*
- Lab data, such as gravity, water cut, and/or temperature*
- Details of the methods used to allocate production to wells*
- Any other documentation or means by which the Division may reasonably*

Other

0006-9

The commenter suggests that all inspections and documentation be conducted with body-video camera and transmitted in real-time to the Division. Real-time video/audio is currently available for most well sites in the State and can be substituted for in-person inspections, witnessing, and monitoring.

***Response to Comment 0006-9: NOT ACCEPTED.** The purchase of body-video cameras, and the infrastructure necessary for the operator and the Division to transmit and receive real-time data would be costly and burdensome without a clear regulatory benefit.*