

Final NPDES General Permit Modification for Discharges from The Oil and Gas Extractions Source to Coastal Waters of Texas and Onshore Stripper Well Category East of The 98TH Meridian (Permit No. TXG330000)

Agency: United States Environmental Protection Agency

Action: Final permit decision and response to comments received on the draft NPDES permit modification publicly noticed on Federal Register of December 2, 2013.

Date: September 3, 2014

Significant Changes from Proposed Permit.

1. Add “no visible sheen” limit to produced water discharges to inland waters under permit Part I., section B-2;
2. Replace acute 48-hour toxicity freshwater testing with acute 24-hour toxicity LC-50 freshwater and remove the cease discharge requirement; and
3. Set October 1, 2017, deadline to comply with the acute Toxicity LC-50 Limit.

State Certifications.

By letter dated May 30, 2014, the Railroad Commission of Texas (RRC) provided certification of the permit under section 401 of the CWA and confirmed consistency with the Texas Coastal Management Program. RRC listed three areas in which the proposed general permit could be made less stringent and still not be in violation of state water quality standards.

RRC Comment on Toxicity Testing: RRC stated that “Texas surface water quality at §307.6(e)(2)(B) state that “... the effluent of discharges to water in the state must not be acutely toxic to sensitive species of aquatic life, as demonstrated by effluent toxicity tests. Toxicity testing for this purpose is conducted on samples of 100% effluent, and the criteria for acute toxicity is mortality of 50% or more of the test organisms after 24 hours of exposure. This provision does not apply to mortality that is a result of an excess, deficiency, or imbalance of dissolved inorganic salts (such as sodium, calcium, potassium, chloride, or carbonate) that are in the effluent and are not listed in Table 1 in subsection (c)(1) of this section or that are in source water.”... Toxicity Identification Evaluations (TIEs) performed by these operators indicate that the produced water contains both natural non-carbonate and bicarbonate ion imbalances, which eventually come into equilibrium. No other toxins were found in the produced water in TIEs, and this operators believe that the sporadic D. Pulex mortality in WET tests is a result of the natural ionic composition (high carbonate/bicarbonate) of the water from the Carrizo/Wilcox, Reklaw, and Bartosh formations.”

RRC also stated that “...As a result of review of the information submitted recently by operators of these stripper wells, the RRC plans to amend the RRC-issued discharge permits for these

stripper well discharges to replace the 48-hour acute test at the 100% of critical dilution with a 24-hour LC50 test. Review of the information indicates that WET testing performed on samples collected at points following the last treatment point indicate that the discharge is not toxic to aquatic life.” RRC further stated that “In addition, Texas Surface Water Quality Standards allow the use of alternate tests and/or alternate species subject to EPA review and approval. The inclusion of an ion adjustment protocol would be consistent with the definition of toxicity in the standards and the 100% acute toxicity provisions at §307.6(e)(2)(B).”

EPA’s Response: Because EPA considers those stripper well discharges to be minor discharges and also because the Texas Water Quality Standards (TXWQS) only require 24-hour LC50 tests, EPA has switched to the 24-hour LC50 test for the final permit, which will be consistent with RRC’s recommendation in the certification and future RRC permit modification action. In case a test failure occurs, the operator will have up to October 1, 2017, which is about three years from the effective date of the final permit modification, to identify and solve the problem on a case-by-case basis. Because all test failures need to be evaluated on a case-by-case basis and ion imbalance is one of many possible reasons to fail the test, the permittee is required to submit an ion adjustment protocol or alternate species testing protocol to EPA for approval if the permittee requests an ion imbalance exemption. Using alternate species may require approval by both TCEQ and EPA and EPA may request RRC to confirm site-specific ion imbalance. EPA is open to all regulatory-allowable alternative compliance methods for permittees to comply with the requirements, but such an alternative will be on a case-by-case basis.

A sampling point for monitoring and compliance purposes must be a point located after the last treatment unit and prior to entering the waters of the United States. This point may be at the end of an effluent channel or pipe rather directly after the last treatment unit. The operator shall document the sampling location and make it available upon request and for inspector’s review.

RRC Comment on Bacteria Limit: The most stringent bacteria criteria for primary contact in freshwater were proposed. These onshore stripper well operators do not typically discharge domestic or sanitary wastes, and such requirements should be limited to those who do.

EPA’s Response: EPA agrees with RRC. Effluent limitations and monitoring requirements for bacteria apply to sanitary waste only. Operators who do not discharge sanitary wastes are not required to monitor or report bacteria counts for compliance purposes.

RRC Comment on Compliance Schedule: RRC recommended that the permit include a reasonable compliance schedule following any failed toxicity test and a three year compliance schedule is consistent with the Texas Surface Water Quality Standards at 16 TAC §307.2(f).

EPA’s Response: EPA agrees to establish the compliance deadline of October 1, 2017, about three year from the effective date of the permit modification, but not a universal three-year compliance schedule from a failed toxicity test as recommended by RRC. Setting a specific compliance schedule provides a specific deadline for all existing discharges and will encourage operators to properly maintain their treatments systems and operation processes to ensure future compliance. The relatively low monitoring frequency is based, in part, on the assumption that the quality of the discharge is relatively uniform. If the discharge passes earlier tests, it should

also pass later tests, especially if the observed toxicity is caused by the ion characteristics of the formation waters rather than other pollutants related to operations of treatment units.

Response to Comments.

EPA received numerous comments from stripper well oil operators, land owners, public entities, local business owners, local citizens, and local ranchers.

Comment Summary 1 from General Public: Most of commenters addressed the same concerns related to the requirement to cease discharges from wells failing the acute toxicity test and the possibility that stripper well operators would need to shut in the affected wells. Instead of providing response to each comment, EPA summarized those comments into six concerns as listed below:

- (a) Potential impact on the incomes of individuals and economies of local communities should operators decide to shut in wells;
- (b) Potential reduction or elimination of downstream water currently available for livestock watering and irrigation;
- (c) Potential reduction or elimination of water currently providing habitats for wildlife, aquatic life and plants;
- (d) Failures of the 24-hour acute toxicity testing for water fleas are believed to be caused by the ionic composition of produced water;
- (e) Dischargers need more time to resolve the toxicity issue; and
- (f) EPA should have extended the public comment period.

EPA's Responses:

(a) *Potential impact on the incomes of individuals and economies of local communities should operators decide to shut in wells:* It is not EPA's interest to shut down any discharger's business or to cause any financial hardship to local communities. It is EPA's responsibility to ensure all discharges do not cause or contribute to a violation of applicable State WQS. EPA proposed the whole effluent toxicity (WET) testing requirements, instead of monitoring for all toxic pollutants, because WET is a useful parameter for assessing and protecting against impacts upon water quality and designated uses caused by the aggregate toxic effect of the discharge of pollutants. Although an acute testing may not properly demonstrate a long-term exposure effect, an acute test is less expensive than a chronic test and a failure of an acute test may indicate adverse long-term effect too.

Note that the proposed permit conditions would have only affected those particular wells that failed the proposed toxicity test and even then did not specifically require that operators shut in any wells. Operators would have been free to explore and evaluate the viability of alternatives to shutting in a well such as treatment to remove the toxicity or ways to avoid having a discharge needing an NPDES permit (e.g., underground injection, reuse as irrigation water, sending wastewater to a permitted centralized waste treatment system or publically owned treatment works, etc.). While some alternatives may not have been economically viable for particular wells, that is a decision that only the well operator could make on a well by well basis.

(b) *Potential reduction or elimination of downstream water currently available for livestock watering and irrigation:* Comments are noted and EPA understands that those discharges provide important livestock watering supply to ranchers and farmers. The purpose of this WET testing requirement is to ensure the quality of those discharges meets all designated uses. See also (a) above regarding an operator's ability to choose options other than ceasing discharge.

(c) *Potential reduction or elimination of water currently providing habitats for wildlife, aquatic life and plants:* Comments are noted and EPA understands that those discharges have provided habitats for some wildlife, aquatic life and plants which can live with it. WET testing requirements have been commonly used by either federal or state regulatory agencies to monitor the quality of a discharge. See also (a) above regarding an operator's ability to choose options other than ceasing discharge.

(d) *Failures of the 24-hour acute toxicity testing for water fleas are believed to be caused by the ionic composition of produced water:* Although failures of WET testing for water fleas might be caused by the ionic composition (or ion imbalance), other factors, such as heavy metals contained in the produced waters, chemicals added for well treatment, etc. could also be toxic to water fleas or other aquatic life. In order to determine the cause of test failures, the final permit gives the discharger three years from the effective date of the final permit modification to conduct site-specific corrective actions to address the problems. See also EPA's response to PBW's Comment 2.2 below.

(e) *Dischargers need more time to resolve the toxicity issue:* A discharger who fails the test will have up to October 1, 2017, about three years from the effective date of the final permit modification, to resolve the toxicity issues.

(f) *EPA should have extended the public comment period:* EPA received about one hundred (100) comments prior to the end of the 60 day public comment period. Even though the proposal was limited to modification of an existing permit rather than issuance of a complete permit, EPA had already doubled the 30 day comment period required under 40 CFR 124.10(b) to accommodate the holiday season. There was no basis to justify the need for a time extension of the public comment period while the public and major operators, MCA Petroleum Corporation (MCA) and Sellers Lease Service (SLS), had enough time to submit comments before the January 16, 2014 deadline. In fact, all major issues raised by commenters had already been raised by the end of December 2013.

Please note that stripper well operators are not authorized to discharge produced waters to an inland waterbody under the current TXG330000 General Permit which was issued and published on Federal Register, Vol. 77/No. 153, August 8, 2012. The 2012 issued permit only authorizes discharge of produced waters to Texas coastal waters. To extend the public comment period would have further delayed the permitting process.

With regard to timing of the final permit decision and any effect on permittees prior to issuance of the permit modification, after issues regarding the potential impacts of the proposed toxicity

test and related permit conditions had been raised during December 2013, EPA did not make a final permit decision without carefully considering all the issues and making appropriate changes to the final permit. Only the conditions of the final permit, and not those of the proposed permit, have any effect on permittees who submit Notices of Intent (NOIs) for coverage under this general permit. As noted above, inland stripper wells were not previously authorized by the permit, a primary reason for the modification, and would have had to first obtain coverage under the modified permit for the terms and conditions of the permit to apply to them

Comment Summary 2 from A Land Owner: A land owner and his relatives who own a ranch where Little Five Mile Creek flows through made statements as below:

- (a) MCA allows water and oil to spill over onto their ranch;
- (b) The commenter may obtain water from various sources, such as water wells and the Fayette County Water Supply, so it does not need water from MCA's discharges;
- (c) Require comprehensive test and monitoring of creeks on a systematic level;
- (d) Require that these produced waters be stored before discharging and/or haul off these waters to a disposal water well or an injection well community for further inspection on the operator discretion; and
- (e) The commenter stated that they support EPA's efforts and changes, along with protection of water and ecosystem in the Little Five Mile Creek, Five Mile Creek, etc. in the community and the quality of life.

EPA's Responses:

(a) *MCA allows water and oil to spill over onto their ranch:* If oil sheen is observed in the discharge, it indicates that the oil/water separating system is not operating properly. Consequently, it may result in growth of algae and/or depletion of oxygen of the water which may cause harm to aquatic life. A condition of "No Discharge of free oil, as determined by the presence of a film or sheen upon or a discoloration of the surface of the receiving water (visual sheen)" in addition to oil and grease limits is included in the final permit. This consistent with the Texas Water Quality Standard requirement (§307.4(b)(7)) that "[s]urface waters must be maintained so that oil, grease, or related residue do not produce a visible film or sheen of oil or globules of grease on the surface or coat the banks or bottoms of the watercourse; or cause toxicity to man, aquatic life, or terrestrial life in accordance with subsection (d) of this section."

(b) *May obtain water supply from other source:* Comment is noted.

(c) *Require comprehensive test and monitoring of creeks on a systematic level:* The NPDES permit program controls the quality of discharges in order to ensure such authorized discharges will not cause or contribute to a violation of State WQS. The State is responsible for conducting water quality assessment of receiving waterbodies under the CWA §305(b).

(d) *Require that these produced waters be stored before discharging and/ or hauled off to a disposal water well or an injection well community for further inspection at the operator discretion:* These alternative practices may be considered by dischargers if discharges cannot comply with permit conditions. The permit regulates the quality of the discharge and does not

mandate a particular method to achieve compliance. Since the permit only regulates discharges to waters of the United States, disposal or reuse of water that does not result in a discharge subject to NPDES permitting is outside the scope of this action. EPA also notes that other commenters indicated that they do make beneficial use of discharged waters.

(e) *Support EPA's efforts:* Comment is noted.

Comment Summary 3 from Pastor, Behling & Wheeler, LLC (PBW): The following statements and comments were provided by PBW in the letter of January 14, 2014, on behalf of MCA Petroleum Corporation (MCA) and Sellers Lease Service (SLS) which operate oil production stripper wells in Fayette, Gonzales, Bastrop and Milam Counties in Central Texas. (Comments made by Mr. Mike Shellman, President of MCA, to EPA via emails are also reflected in PBW's letter.)

(a) Statement: MCA and SLS are currently authorized to discharge produced water from wells under EPA General Permit TXG330000 (reissued in 2012).

EPA Response: MCA and SLS are not authorized to discharge produced water from stripper wells into Texas inland waterbodies under the 2012 reissued General Permit. The 2012 reissued permit states that "...this permit regulates the discharge of produced water from the Stripper Subcategory wells to coastal waters of Texas [emphasize added]" in the permit cover page and it also states that "...this permit authorizes discharges, including produced water, from Stripper Subcategory wells to coastal waters of Texas [emphasize added]" in Part I, section A.1. of the permit. When EPA proposed the reissuance of the 2012 general permit, EPA received no comment on this matter and the final permit was issued as proposed without authorization of discharge of produced water from stripper wells to Texas inland waterbodies. The primary purpose of this permit modification action is to provide permit eligibility for discharges from stripper wells to Texas inland waterbodies that were eligible under previous permits.

(b) Comment 1.1: The commenter stated that produced water discharges from stripper wells located east of the 98th Meridian have been authorized by EPA under the General Permit since 1995.

EPA Response: EPA agrees that discharges from stripper wells were authorized under previous general permits prior to the reissuance of 2012 General Permit. Such an authorization needs to be renewed every five years and conditions and restrictions of such authorization may be subject to change during the reissuance process. Prior to this modification, the proposed then finalized 2012 permit only authorized discharges from stripper wells to Texas coastal waters, not to Texas inland waters.

(c) Comment 1.2: The commenter questioned why EPA did not involve stripper well operators in the development of the proposed 2013 permit modification. MCA and SLS also requested that EPA withdraw the proposed permit modification to allow time for EPA to work collaboratively with the stripper well dischargers to develop permit conditions appropriate for the discharges.

EPA Response: Regulations do not require EPA to involve dischargers in developing draft permit conditions. EPA did not anticipate any controversial effect due to this permit modification action because EPA did not receive any comments from stripper well operators when EPA renewed the permit in 2012. However, EPA is always willing to meet with permittee(s) or other interested parties during the permit development process if requested. Dischargers, interest groups, any individual or entity have the opportunity to provide their comments during the public comment period. (Any individual or corporation may request to be listed in the EPA's mailing list to receive notice of EPA's action for all, a class of, or a specific permit.) EPA has evaluated all comments and also met with dischargers to discuss their comments prior to making the final decision on the permit. Therefore, there is no need to withdraw the proposed permit modification in order to develop appropriate permit conditions.

(d) Comment 1.3: The commenter stated that the provisions of 40 CFR 435 Subpart E allow produced water from stripper wells located west of the 98th meridian to be discharged to inland waters without EPA permit authorization, as long as the discharged water is of "good enough quality to be used for wildlife or livestock watering or other agricultural uses and that the produced water is actually put to such use during period of discharge." MCA and SLS request the TXG330000 General Permit to be modified to include a similar provision for stripper well discharges located within 100 miles east of the 98th meridian and exempt these discharges from the other requirements of General Permit TXG330000.

EPA Response: PBW has misinterpreted the provision in 40 CFR 435 Subpart E (Agricultural and Wildlife Water Use Subcategory), which establishes national technology-based standards for permits and is not an waiver of a requirement for a permit.

Since 40 CFR 435 Subpart C (Inland Subcategory) effluent limitation guideline prohibits the discharge of pollutants in produced water, oil wells located west of the 98th meridian can only be authorized for discharging if the discharge falls under Subparts E (Agricultural and Wildlife Water Use Subcategory) or F (Stripper Subcategory). For inland wells east of the 98th meridian, only stripper wells under Subpart F can be authorized to discharge. Also, effluent limitation guidelines, such as those at 40 CFR 435, only provide nationally applicable technology-based requirements and NPDES permits are also required by 40 CFR 122.44(d) to include conditions in addition to or more stringent than effluent limitation guidelines as necessary to protect water quality standards. Therefore, even west of the 98th meridian, permits must establish more stringent conditions in order to protect aquatic life uses or to comply with other applicable State WQS. At the time when this response to public comments was prepared, EPA Region 6 has only authorized a few produced water discharges from stripper wells located west of the 98th meridian, although EPA is open to considering a separate general permit to authorize such discharges should there be sufficient demand. Note that discharges of produced water would not need an NPDES permit if such discharges do not reach a water of the United States.

(e) Comment 2.1: The commenter stated that there would be no water most of the time in many of these dry creeks if the fresh produced water discharges are terminated. One sure way to guarantee 100 percent mortality of all aquatic life in these creeks would be for the EPA to cause these discharges to cease.

EPA Response: It is not EPA's intention to terminate those discharges. The final permit has eliminated the requirement to cease discharging upon a toxicity test failure until the discharge passes the toxicity test. EPA has an obligation under 40 CFR 122.4(d) to ensure those discharges authorized by the permit will not cause or contribute to a violation of State WQS for designated uses. EPA is unaware of any evidence that ALL wells would fail toxicity tests, so the number of wells that may fail a toxicity test is unknown. Should a particular discharge fail a toxicity test, the permittee would need to look into and address the cause of failure for that particular discharge. Also, as described above, the dischargers may take various alternatives to handle discharges without shutting down operations or terminating the discharges to local receiving waters.

(f) Comment 2.2: The commenter stated that during the past 18 months [prior to the submittal of the comment letter], studies of WET testing for produced water conducted by MCA and SLS have reached the following conclusions: (i) all discharges routinely pass marine WET testing; (ii) many discharges occasionally fail WET testing using *daphnia pulex*, *daphnia magna* or *ceriodaphnia dubia* (water fleas); and (iii) the mortality of water fleas is due to the natural characteristics of the native groundwater. The commenter also stated that WET testing using water fleas at various points in discharge ditches and gullies downstream of the produced water discharges typically demonstrated improved survival rates and WET tests passed for all species in ephemeral creeks located off leases. Treatment options are extremely costly to install and operate and would make continued operation of the stripper wells unsustainable. The commenter further suggested that (i) exempt the discharges from toxicity limitations if the WET test mortality is due to natural inorganic constituents in the produced water; (ii) allow 24-hour acute WET testing using marine organisms for produced water discharges; or (iii) allow WET testing using produced water samples collected in receiving ephemeral creeks.

EPA Response: EPA notes that data on test failures is from a limited number of wells operated by a few companies and may or may not be representative of other wells that could be using the modified permit. However, in reviewing the comment and developing a response, EPA assumed at least some other wells would be in the same situations. (i) The stripper well operators have up to October 1, 2017, to comply with the toxicity limit. If ion imbalance is identified to be the sole cause of testing failure under the TRE/TIE, the operator shall submit EPA an ion-adjustment protocol or alternate species testing protocol for approval on a case-by-case basis. (ii) EPA proposed to use freshwater species for the toxicity testing because those receiving streams are likely designated as freshwater waterbodies. If any receiving stream is designated as a salt water stream, marine species shall be used for the test. (iii) Samples for compliance purposes must be collected after the last treatment unit but prior to the receiving stream. Since NPDES permits regulate discharges to waters of the United States, the discharger cannot collect water from the creek for compliance purposes.

(g) Comment 3.1: The commenter stated that the Texas Water Quality Standards and related guidance indicate (i) discharges are exempt from permit toxicity limitation if the WET test mortality is due to inorganic salts and (ii) if toxicity limits are deemed appropriate, a reasonable compliance schedule should be included in the permit. Then, the commenter requested to include the following provisions: (i) exempt the discharges from toxicity limitations if the WET test mortality is due to natural inorganic constituents in the produced water; (ii)

define a confirmed “WET test failure” as one failed WET test followed by two failed confirmation tests within 60 days of the first test failure; and (iii) in the event of a confirmed WET test failure, establish a compliance schedule of three years. (A similar comment was also provided by Atkins North America.)

EPA Response: (i) If a stripper well operator, after completion of TRE/TIE, still anticipates failures of the toxicity tests due to ion imbalance, the operator shall submit to EPA an ion-adjustment protocol or alternate species testing protocol for approval on a case-by-case basis. (ii) EPA declines to adopt the concept of “confirmed WET test failure” suggested by the commenter because it requires three failed tests in a row to be considered “fail” while one pass test could be considered “pass.” The current permit requires “two confirmed pass tests” for any test failure for discharges to coastal waters. It would be appropriate to utilize the same “pass” definition for discharges to inland waters. (iii) EPA establishes a deadline of October 1, 2017, about three years from the effective date of the final permit modification, for dischargers to correct toxicity problems.

(h) Comment 4.1: The commenter stated that the discharges of produced water provide about 400 million gallons of freshwater each year and much of the produced water is discharged to the Peach Creek watershed, which is tributary to the Guadalupe River and San Antonio Bay. The wild whooping crane winters on the Aransas Pass National Wildlife Refuge. The Guadalupe River is one of the primary sources of freshwater to the refuge and to San Antonio Bay. If the proposed modifications to the General Permit TXG330000 are not revised, most or all of the affected fresh produced water discharges will eventually be terminated, eliminating hundreds of millions of gallons of fresh water each year from the Guadalupe River watershed.

EPA Response: No evidence has been presented that ALL dischargers would actually fail toxicity and will decide to stop discharging rather than resolve their toxicity issues. Since the final permit does not require cessation of discharge upon failure, but rather provides a 3 year compliance period for a 24-hr LC-50 test instead of the proposed 48-hr acute test, the likelihood a significant number of dischargers would choose to cease discharging has been reduced. EPA has no control over whether a well operator would choose to shut in a well and cease discharging for reasons unrelated to permit compliance such as profitability issues tied to fluctuations in crude oil prices or reduced production from a particular well.

(i) Comment 5.1: The commenter stated that the proposed permit modification will affect numerous small businesses, such as stripper well operators, businesses associated with stripper well operation, City of Flatonia, and local school districts.

EPA Response: Comments are noted. EPA has also received comments from citizens, small business owners, and public entities concerning the potential financial impacts. See also response to comment summary 1.(a) above.

(j) MCA and SLS request to meet with EPA so that they may submit additional information in support of our comments as well as any supplemental comments/data developed subsequent to the letter.

EPA Response: A meeting was held on February 10, 2014, among EPA, Texas Railroad Commission, and stripper well operators (including MCA and SLS), to discuss their comments related to technical issues, State WQS, and permit conditions necessary to ensure the quality of fresh produced water will comply with regulatory requirements.

Comment Summary 4 from A Citizen: A citizen who was impressed that the affected stripper well operations would be shut down because of WET testing failure for freshwater species, *Daphnia Pulex*, had requested information about (a) existing of daphnia pulex in the naturally occurring waters in and around those stripper wells; (b) drought conditions which pose a threat of imminent disaster in Colorado County, Texas; and (c) State 401 certification.

EPA Response:

(a) *Existence of daphnia pulex in the naturally occurring waters in and around those stripper wells*: Whole Effluent Toxicity (WET) is a term used to describe the aggregate toxic effect of an aqueous sample (e.g., whole effluent wastewater discharge) as measured by an organism's response upon exposure to the sample (e.g., lethality, impaired growth or reproduction). WET tests replicate the total effect and actual environmental exposure of aquatic life to toxic pollutants in an effluent without requiring the identification of the specific pollutants. WET tests are usually run using both a representative fish species and an invertebrate species since fish and invertebrates can have different sensitivity to various pollutants and both are essential to healthy aquatic ecosystems. WET testing is a vital component of the water quality standards implementation through the NPDES permitting process and supports meeting the goals of the Clean Water Act (Section 402), "... maintain the chemical, physical and biological integrity of the nation's waters." More information about WET can be found at <http://cfpub.epa.gov/npdes/wqbasedpermitting/wet.cfm>.

The proposed permit has required *Daphnia pulex* to be used for WET testing in accordance with the EPA published "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012). *Daphnia pulex* was selected for the testing because it is an EPA approved species sensitive to toxicity, not because it necessarily exists in the receiving stream. The operators may request to use a different invertebrate species for EPA's approval. If a discharge passes the WET test, we can assume that the discharge has no reasonable potential to cause toxicity to aquatic life.

(b) *Drought conditions which pose a threat of imminent disaster in Colorado County*: If the discharge fails the WET test and the operator chooses to cease to discharge into surface water, it may worsen water availability problems caused by the current drought condition. EPA has considered this factor in the final permit determination. In any event, it would be the operator's decision to cease discharging, based on any number of factors related or unrelated to permit compliance. EPA does not control the future availability of discharges to surface water.

(c) *State 401 Certification*: As required by section 401 of the Act, prior to issuance of a NPDES permit, the State must certify the permit or waive certification, In its certification, the State can place condition for certification and indicate where the permit could be made less stringent without violating water quality standards and other state requirements. The State issued

its certification on May 30, 2014. EPA is required to issue a permit which complies with appropriate State law, State water quality standards or limitations. However, EPA has the authority to issue a permit with more stringent permit conditions than State law, water quality standards or limitations. For more information on how EPA has modified the final permit in response to the State's certification letter and comments, see the State Certification section above.

Comment Summary 5 from Texas Oil & Gas Association (TXOGA): In general, TXOGA supports the use of freshwater organisms for WET testing of discharges to freshwater. However, TXOGA has specific concerns about the proposed implementation of freshwater species WET testing in the proposed permit.

(a) There may be some sensitivity of the freshwater test organisms to total dissolved solids (TDS) as the TDS concentration approaches 3000 mg/L, the stripper well produced water TDS concentration limit given in the Notice. The effects of TDS concentrations on the organisms should be ascertained, and constraints placed on the applicability of the freshwater WET test based on the organisms' tolerance for TDS. The freshwater WET test should not be applied when/if the produced water discharge TDS concentration may not be tolerated by the test organisms.

EPA Response: A discharge must comply with all applicable effluent limitations established in the permit. The TDS limit of 3000 mg/l does not provide the discharger a free ride to by-pass the freshwater WET testing requirement (According to MCA and SLS, most of the produced water TDS range from 500 to 1500 mg/l). Whether freshwater or saltwater WET applies, it depends on the designated uses of the receiving waters, not the discharges. The purpose of using WET test is to protect aquatic life in the receiving stream, not just to assess the toxicity of discharge. Only using tests that all dischargers could pass, regardless of the quality of their effluent, would not be protective of receiving waters.

(b) Similarly, constraints should be placed on the applicability of the freshwater WET test based on the TDS concentration of the receiving water for brackish or estuarine waters. The freshwater WET test should not be applied when/if the receiving water TDS concentration is not tolerated by the test organisms.

EPA Response: Saltwater or freshwater test species are selected based on whether the receiving waters are supporting or designated for uses of saltwater or freshwater organisms. The freshwater WET testing requirement applies to discharges into inland waterbodies, including ephemeral streams; and the saltwater WET testing requirement applies to discharges into coastal waterbodies. Based on information available to EPA, water samples from downstream creeks have passed freshwater WET tests. Therefore, the receiving water TDS concentration can be tolerated by the test organisms.

(c) The permit needs to provide in its definitions a clear delineation between freshwater and coastal water. The implication is that freshwater contains TDS less than 3000 mg/L, but this definition needs to be explicitly stated.

EPA Response: No permit definition is needed since the Texas Surface Water Quality Standards (TAC §307) provide the definition necessary to determine whether a waterbody is freshwater or saltwater. Note the TAC §307.3 defines saltwater “Saltwater--A coastal water that has a measurable elevation change due to normal tides. In the absence of tidal information, saltwater is generally considered to be a coastal water that typically has a salinity of two parts per thousand or greater in a significant portion of the water column.” The salinity of the waterbody, not the discharge, determines whether it is freshwater or saltwater. TAC §307.10 also states “Marine segments are those which are specifically titled as “tidal” in the segment name, plus all bays, estuaries and the Gulf of Mexico.” Those indicated to be marine, tidal, bays, estuaries, or the Gulf of Mexico would be “saltwater” receiving waters. Those above tidal would be freshwater.

(d) The WET test endpoint for the proposed freshwater WET test is a 48-hour acute while the endpoint for the existing marine WET test is a 24-hour LC50. No justification or explanation for the proposed longer-duration test is provided, and the proposed longer duration appears arbitrary.

EPA Response: During the development of the draft permit, EPA obtained a copy of Texas RRC issued permit which has a 48-hour acute freshwater WET testing using the 100% critical dilution. In order to avoid duplicating tests with different testing period, EPA chose the use of 48-hour WET testing requirement. The final permit uses 24-hour LC50 freshwater testing requirements as suggested by the Texas RRC in their Certification letter of May 30, 2014. .

(e) Similarly, the proposed freshwater WET test includes NOEC and Coefficient of Variation constraints that are not specified for the marine test. If the intent of the freshwater test is to merely provide a parallel test to the marine test, then the freshwater test should not be burdened with additional conditions.

EPA Response: The 24-hour acute marine WET testing was developed by the State of Texas. The 48-hour acute testing requirements were in accordance with EPA’s protocol. EPA has changed this to the 24-hour LC50 freshwater testing requirements in the final permit.

(f) The proposed freshwater WET test demands a composite sample while the marine test requires merely a grab sample. The basic testing requirements for the two tests should be identical, including the sample type, the default use of synthetic water for control and dilution water for the acute tests.

EPA Response: As stated above, the standard procedures for the 48-hour testing may be different from the 24-hour testing because the 48-hour testing is EPA’s standard procedure and the 24-hour testing is Texas standard procedure. Grab sample type is specified in the final permit.

(g) Mention of longer-duration tests than the specified acute exposures required for compliance is confusing to operators in the field and should be removed from the permit.

EPA Response: See EPA’s response to TXOGA’s comment (d) above.

(h) As the intent of introducing a freshwater WET test into the permit is to differentiate WET tests between low and high TDS samples and receiving waters, there should be no prohibition against the discharge to marine waters of produced water exceeding 3000 mg/L, as the TDS of marine waters is by definition greater than 3000 mg/L.

EPA Response: This permit was reopened to authorize discharges from stripper wells into inland waterbodies. The effluent limitation for TDS is necessary to protect freshwater aquatic life. For discharges into coastal waters, EPA may reconsider TDS limitation when EPA renews the permit in the future.

Acknowledgement: EPA has also received the letters from the following persons or entities concerning the impact of the shutting down of stripper well operations on the local economy: the U.S. Congressman Lamar Smith; U.S. Congressman Michael T. McCaul; State Senator Glenn Hegar; Fayette County Commissioners' Court; City of Flatonia, and Flatonia Independent School District.

