Final National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from New and Existing Sources in the Offshore Subcategory of the Oil and Gas Extraction Point Source Category for the Eastern Portion of the Outer Continental Shelf of the Gulf of Mexico (GEG460000)

Agency: United States Environmental Protection Agency (EPA)

Action: Final permit decision and response to comments received on the draft reissued NPDES permit publicly noticed in the Federal Register on June 9, 2023.

SUBSTANTIAL CHANGES FROM PROPOSED PERMIT:

1. Addition of Acute Whole Effluent Toxicity (WET) limitation for Well Treatment, Completion and Workover Fluids

RESPONSES TO COMMENTS:

The EPA received comments from two entities: 1) the Joint Trades and 2) Shell Exploration & Production Company

The Joint Trades: The Offshore Operators Committee (OOC), the American Petroleum Institute (API), the National Ocean Industries Association (NOIA) and Louisiana Mid-Continent Oil and Gas Association (LMOGA) (referred to as "the Joint Trades") submitted joint comments. The following 33 comments were provided by the Joint Trades.

Comment 1: [Summary page 8]

The Joint Trades request EPA consider having the permit become effective at midnight at the beginning of a calendar quarter to reduce complication and provide clarity for operators related to sampling, recordkeeping, and quarterly discharge monitoring reporting.

Response: Due to public noticing time constraints found at 124.15, the permit will be issued after January 1, 2024. The final general permit must be public noticed in the Federal Register and shall become effective 30 days after the issuance date. Region 4 will work with operators to provide clarity on sampling, record keeping and quarterly discharge monitoring reports.

Comment 2: [Part I. Requirements for NPDES Permits, A. Permit Applicability and Coverage Conditions, 4. Notification Requirements (Existing Sources and New Sources) (pg. 16-17)]

The Joint Trades are requesting the changes to reference the full section identifier of the permit (i.e., adding "A" to the citation after "Part I").

u. Information on the specific chemical composition of any additives currently being used or proposed for use in well treatment, completion, or workover operations or as biocides for sump/drain systems. If the information on the additive is not known at the time of the submittal of this NOI, operators shall include the information in a report that shall be submitted on to the EPA Region 4 on September 30th of each year. Aside from submitting this information with the NOI, this information is also required to

be recorded and retained on site for no less than five years from the issuance date of the permit. See Part I.A.6.a.iii.

Response: A change has been made to the final permit.

Comment 3: [Part I. Requirements for NPDES Permits, A. Permit Applicability and Coverage Conditions, 4. Notification Requirements (Existing Sources and New Sources) (pg. 17)]
The joint trades support deleting the following passage:

~~w. Statement indicating intent, or not, to participate in the alternative Industry-wide Study regarding Whole Effluent Toxicity Testing of Well Treatment, Completion and Workover Fluids (Part I.B.6.b, page 50).~~

Response: A change has been made to the final permit.

Comment 4: [Part I. Requirements for NPDES Permits, B. Effluent Limitations and Monitoring Requirements for New and Existing Sources (pg. 21)]

The Joint Trades recommend moving the proposed note regarding discharge of radioactive materials from "Part 1. Section B. Effluent Limitations and Monitoring Requirements for New and Existing Sources" to "Part I. Section C., Other Discharge Limitations". Part I. Section C. is the portion of the permit where general discharge limitations and prohibitions are described. The limitations described in this proposed note are better aligned for inclusion in Part I. Section C.

Additionally, the Joint Trades recommend revising the title of the suggested destination for this note (Part 1. Section C, as referenced above) as follows: Other Discharge Limitations Prohibitions and Discharges Not Authorized by this Permit

Regardless of the implementation of either change suggested above, the Joint Trades recommend harmonizing the title for Part I. Section C. as listed the Table of Contents with the title found in the body of the permit by making both references contain the exact same language (i.e. currently, the title in the body of the permit reads "Other Discharge Limitations" while the Table of Contents refers to this section as "Other Discharge Conditions").

These changes would reflect the full scope and intent of the section contents and increase consistency within the permit itself.

Response: A change has been made to the final permit.

Comment 5: [Part I. Requirements for NPDES Permits, B. Effluent Limitations and Monitoring Requirements for New and Existing Sources, 1. Drilling Fluids, c. Monitoring Only Requirements (pg. 26)]

The Joint Trades are requesting the word "requirements" be added to the text after the word "reporting". In addition to the above limitations, the following monitoring and reporting requirements apply.

Response: A change has been made to the final permit.

Comment 6: [Part I. Requirements for NPDES Permits, B. Effluent Limitations and Monitoring Requirements for New and Existing Sources, 3. Produced Water, b. Limitations (pg. 41)]

The Joint Trades are requesting that the term "seawater" be retained in the description of this requirement rather than changing the word to "saltwater".

When seawater ~~saltwater~~ is added to produced water prior to discharge, the total produced water flow, including the added seawater ~~saltwater~~, shall be used in determining the critical dilution…

Rationale:
Given that there is no accompanying definition for "saltwater," using that term instead of the existing term "seawater" could lead to confusion in implementing this requirement due to several factors: Without an accompanying definition, the regulated community could potentially equate "saltwater" with "brine", which may be utilized in day-to-day operations that are unrelated to this requirement.

Response: A change has been made to the final permit.

Comment 7: [Part I. Requirements for NPDES Permits, B. Effluent Limitations and Monitoring Requirements for New and Existing Sources, 6. Well Treatment Fluids, Completion Fluids, or Workover Fluids, d. (pg. 46)]

The Joint Trades recommend removing this prohibition: (the permit's prohibition of the discharge of a combination of compounds that form a gel-like or solid phase substance when added to or mixed with wastewater).

Rationale:
The industry-wide Treatment Completion Workover (TCW) fluid toxicity study forms the basis for this recommendation. The study concluded that several factors limit the potential for aquatic toxicity risks and including:

- TCW fluid discharges are small volumes. TCW fluid discharges are estimated to be 0.01% of produced water discharge volumes.
- Of the substances evaluated during the study, no concentration was greater than conservative acute saltwater ecological thresholds.

During the study, results were limited to 5 samples containing gel-like substances out of the 28 samples tested. This small sample size illustrates the limited experience throughout industry segments to test specifically for these substances prior to discharge. Following the study's conclusion, industry has successfully performed toxicity testing for discharges with these components without modifications to the existing test methods referenced in existing and proposed permit language. Some of this work has been conducted in anticipation of, and to comply with, the new toxicity requirements under the Region 6 NPDES OCS GOM permit, which allows discharge of these components tested under standard methods during the two-year monitoring-only period while data is being gathered.

During the industry-wide TCW fluids study, one gel-like fluid required additional stirring in order

for the WET testing procedure to be executed. Industry acknowledges that the Clean Water Act (CWA) regulations require approval of such modified methods before discharge would be allowed. Until these methods were approved, no discharges would be allowed.

To facilitate this approach to implementation, Region 4 could include a note stating that:

All monitoring under this permit is required to comply with the approved test method procedure as described in 40 CFR Part 136, 40 CFR Part 435, and any protocol specified in this permit. This includes sample collection, preparation, preservation, and analysis protocol and use of sufficiently stringent test methods. Any changes to methods or protocol must be approved through the alternate test method procedures in accordance with 40 CFR Part 136.

This approach is also found in "Section B. Effluent Limitations and Monitoring Requirements, Note 2" of the EPA Region 6 OCS GOM NDPES permit. Should EPA intend to prohibit discharge combinations of compounds that form a gel-like or solid phase substance when added to or mixed with seawater, the Joint Trades request that: EPA demonstrate a cost/benefit analysis for requiring a prohibition of the discharge of combinations of compounds that form a gel-like or solid phase substance when added to or mixed with seawater. EPA's current proposal to prohibit the discharge presents no information to support the benefits of prohibition given the cost to implement.

This analysis would be important to consider when weighed against the results of the industry-wide TCW study, which found that these fluids do not pose an unreasonable risk to the aquatic environment, and that additional WET testing does not provide any added environmental benefit. Offshore facilities subject to these new requirements may require capital upgrades (e.g., fabrication / installation of piping, tanks, and storage to collect and dispose of these fluids) making immediate compliance with the new requirements impossible.

The Joint Trades recommend EPA Region 4 include the following language to the permit to allow for a compliance implementation period rather than prohibiting these discharges on the effective date of the permit: "**Compliance with this limitation must be achieved within two years after the effective date of this permit."** Including this language would provide certainty to industry that while attempts were being made to ensure compliance with the new requirement there would be no violations for discharging these fluids.

Response: No change has been made to the final permit. EPA disagrees that the *Final Report on the Joint Industry Project Study of Well Treatment, Completion, and Workover Effluents* (Industry Study Report) dated 9/23/2021 showed "that these fluids do not pose an unreasonable risk to the aquatic environment, and that additional WET testing does not provide any added environmental benefit." Data for this study and report were collected by operators in Region 4 and Region 6 during the last permit cycle. While the data are limited, gels were found to be highly toxic at low concentrations in the Industry Study Report. Two samples identified as gels have No Observed Effect Concentration (NOEC) of less than or equal to .1%. The Final Report on the Joint Industry Project Study of Well Treatment, Completion, and Workover Fluids states on page 93 that a "subset of TCW Category III effluents that formed gels and a TCW Category I effluent with multiple chemical additives were the most toxic effluents collected." These discharges are intermittent and small in volume as stated in the comment, so we do not find transporting them onshore for management to pose a significant cost burden. Further, the prohibition is necessary to support the Region's determination that the discharges, as conditioned, would not cause

unreasonable degradation of the marine environment, and the criteria for making this determination do not require a cost benefit analysis (see 40 CFR Section 125.122). In this connection, it is significant that the receiving waters for Region 4's permit contain sensitive areas of biological concern and habitat for the newly listed endangered Rice's whale, and this prohibition provides extra assurance that the sensitive areas of biological concern and habitat of the Rice's whale will not be unreasonably degraded due to this permitted activity.

Furthermore, a compliance schedule is not appropriate based on the need for the protection provided by the prohibition. The prohibition is necessary and should not be delayed. The transport of these wastes to the shore for management should not require significant facility renovation. The industry has stated that these discharges are low in volume and infrequent.

As noted in the comment, more data on gel toxicity is needed. Until these data are available, Region 4 will retain the protective prohibition. In addition, Region 6 is currently collecting additional monitoring data and Region 4 will use that data to reevaluate the gel prohibition during the next permit cycle.

Comment 8: [Part I. Requirements for NPDES Permits, B. Effluent Limitations and Monitoring Requirements for New and Existing Sources, 6. Well Treatment Fluids, Completion Fluids, or Workover Fluids, e. Whole Effluent Toxicity Requirements for Well Treatment, Completion or Workover Fluids that are Not Commingled with Produced Water, i. Chronic Whole Effluent Toxicity Testing (pg. 46-47)]

The Joint Trades are recommending that EPA consider removing the monitoring requirements for 7-day chronic WET Limitations for TCW fluids as currently proposed.

The Joint Trades are recommending 2 options for EPA to consider regarding implementation of 7-day chronic WET monitoring for TCW fluids. These options are as follows (and discussed further in the "Rationale" section below):

1. Removal of the monitoring requirements from the permit, or
2. Adding a compliance implementation period for the monitoring-only chronic discharge testing.

Rationale:
1. Removal of the monitoring requirements from the permit: Most TCW fluid discharges are short duration, intermittent, and low volume. The nature of these discharges brings into question the appropriateness and necessity of 7-day chronic testing as it would not be representative of how these discharges interact with the marine environment given that the aquatic environment would not typically be exposed to such discharges for the 7-day chronic testing period. Chronic testing is simply not appropriate for most of these types of discharges. In addition, chronic testing was not part of the Industry-wide TCW fluids study. There is no evidence to support inclusion of chronic testing as a permit requirement. By including chronic testing in the permit EPA would be adding additional burden to the regulated community that is not based on scientific evidence. It is also an unnecessary use of vertebrate test organisms. Wherever possible the EPA should reduce, refine, and replace all vertebrate testing for ethical reasons especially considering the Industry-wide TCW fluids study found the invertebrate test (M. bahia) on average more sensitive than the vertebrate test (Menidia beryllina).

2. Adding a compliance implementation period for the monitoring-only chronic discharge testing.
The Joint Trades strongly recommend that EPA provide justification of this monitoring requirement

and establish a schedule of compliance for implementation of the new requirements as outlined in 40 CFR 122.47. If monitoring (meaning no "pass / fail" for compliance and Discharge Monitoring Report (DMR) reporting) for 7-day chronic WET testing for TCW fluid discharges lasting more than four days is included in the final permit, it is imperative that a 60-day compliance implementation period be included to allow operators time to establish procedures, processes and resources to implement the sampling and testing for chronic toxicity monitoring. The Joint Trades propose the following language be added to this section of the permit: Compliance with 7-day chronic WET monitoring requirements must begin within 60 days of the effective date of the permit.

If both acute and chronic testing were required concurrently, to avoid the dual sample requirements, reduce complexity, and ensure the same fluid is used for both acute and chronic data, we ask that EPA acknowledge that results for the acute 48-hour test may be derived from the 7-day chronic test.

Response: A partial change has been made to the final permit pertaining to the 48-hour result being derived from the chronic test. The chronic WET test requirement is a monitoring and reporting requirement, not a limitation. The TCW waste discharges vary in duration, and chronic effects were not addressed as part of the Industry Study. Therefore, it is appropriate to consider chronic effects through a monitoring requirement in the permit, based on the extreme acute toxicity exhibited and the current lack of data on sublethal endpoints such as growth and reproduction. The lack of data on chronic effects should be remedied as soon as possible so that if there are chronic affects demonstrated then action can be taken to address them. The addition of the chronic test is not a substantial additional burden and therefore a delay is not warranted.

EPA notes that a chronic test can be conducted on discharges of short duration. Duration of discharge does not necessarily determine the duration of the exposure as there are other variables that can affect exposure. Therefore, the requirement to monitor for chronic effects will remain in the permit.

In response to the Joint Trades request, the final permit allows the 48-hour result to be derived from the chronic test. This should reduce complexity and prevent the need for additional sampling. Language in the TCW section of the permit has been updated to clarify that the acute WET testing is a limitation, and the chronic WET testing is a monitoring requirement only.

Comment 9: [Part I. Requirements for NPDES Permits, B. Effluent Limitations and Monitoring Requirements for New and Existing Sources, 6. Well Treatment Fluids, Completion Fluids, or Workover Fluids, e. Whole Effluent Toxicity Requirements for Well Treatment, Completion or Workover Fluids that are Not Commingled with Produced Water, i. Chronic Whole Effluent Toxicity Testing (pg. 47)]

If the requirements are finalized as proposed, the Joint Trades request that EPA clarify whether this permit language would require testing to return to a monthly or once per discharge schedule for a given lease block / NOI after the specified number of consecutive passing tests for reduced sampling have been met in certain scenarios. For example, if well operations conducted for a lease block / NOI were undertaken for a period of less than six months and the required number of discharges passed the required number of consecutive toxicity tests, a six-month sampling schedule would begin. If those operations (and discharges) ceased before that six- month period ended but were restarted within the newly established sampling frequency timeframe, would the same type of discharge require testing according to a monthly or once per discharge schedule when they began again?

Rationale:
The language as it is written is vague and may result in confusion when these discharges are short duration, intermittent, and low volume. Operators may not interpret the language as requiring additional monthly or once per discharge testing in the above example.

Response: No change has been made to the final permit. EPA Region 4 does not permit by the lease block; each well receives a unique NPDES identifier. Page 47 of the permit currently states:

"Testing to determine the NOEC shall be done every month (or once per discharge, whichever is more frequent). Permittees that pass four consecutive toxicity tests will be allowed to reduce sampling to a frequency of once every six months. If at any time, a test result indicates a failed test, the permittee must resume testing at a greater frequency, as set forth in Part V.A.15, until such time that the facility demonstrates compliance through four consecutive tests."

Once four passing tests are achieved, a less frequent testing regime is initiated until there is a failing test. Interruption or resumption of operation is not what triggers reduced or increased sampling regimes, a failed test does. Therefore, in the above example, the facility would not require testing according to a monthly or once per discharge schedule unless they failed a WET test.

Comment 10: [Part I. Requirements for NPDES Permits, B. Effluent Limitations and Monitoring Requirements for New and Existing Sources, 6. Well Treatment Fluids, Completion Fluids, or Workover Fluids, e. Whole Effluent Toxicity Requirements for Well Treatment, Completion or Workover Fluids that are Not Commingled with Produced Water, i. Chronic Whole Effluent Toxicity Testing (pg. 47)]

The Joint Trades request that a clarification be made to this requirement to state that the test shall be resumed only if the discharge is still occurring.

Additionally, the Joint Trades request that the requirement for the number of consecutive passing tests before resuming the typical test frequency following a failed test be changed from four to three.

If at any time, a test result indicates the NOEC is greater than the critical dilution ~~a failed test~~, the permittee must resume testing at a greater frequency while the discharge is occurring, as set forth in Part V.A.15, until such time that the facility demonstrates compliance through ~~four~~ three consecutive tests.

Rationale:
Industry acknowledges that monitoring means no "pass / fail" for compliance and DMR reporting for 7-day chronic WET testing for TCW fluid discharges lasting more than four days. Revising the language so that "failed test" is more clearly stated as "the NOEC is greater than the critical dilution" would be more appropriate for a monitoring-only requirement.

In the event that a sample becomes compromised in any way during transportation or if toxicity tests are inconclusive or invalid, having the opportunity of collecting another sample may not be possible if the discharge is no longer occurring. This is because these discharges are short in duration. Making the change from four to three consecutive tests would ensure consistency with the permit requirements for Produced Water (Part 1., Section 3. b. ii.).

Response: A partial change has been made to the final permit. Passing of the test occurs when both the sublethal and lethal NOEC of a WET test is **greater** than or equal to the critical dilution.

Consecutive passing test number requirements will remain the same at four. Four tests provide more protection and data for future permit decisions for a waste stream lacking historical data. The language "while the discharge is occuring" is not needed. The current permit clearly states the chronic test is a monitor and report only requirement and elimination of the failed test terminology is unnecessary. The consequences of a failed test under the permit are clear.

Regarding the sample contamination, EPA will use its enforcement discretion to make a determination regarding permit compliance. So, in the event there is a contaminated sample, the permittee must provide documentation regarding the contamination and a statement submitted with the DMR. As with all data submitted to EPA, the statement/documentation must be signed by the a "responsible corporate officer" or a "duly authorized representative" and include the certification statement at 122.22 (d).

Comment 11: [Part I. Requirements for NPDES Permits, B. Effluent Limitations and Monitoring Requirements for New and Existing Sources, 6. Well Treatment Fluids, Completion Fluids, or Workover Fluids, e. Whole Effluent Toxicity Requirements for Well Treatment, Completion or Workover Fluids that are Not Commingled with Produced Water. ii. Acute Whole Effluent Toxicity Testing (pg. 50-52)]

The Joint Trades are recommending 3 options for EPA to consider regarding 48-Hour Acute WET Limitations for TCW fluids. Those options, in order of priority, are as follows (and discussed further in the "Rationale" section below):

1. Removal of the limitations from the permit, or
2. Modify the limitation to a monitoring requirement, and / or
3. Adding a compliance implementation period for the limitation.

Rationale:
1. Removal of the limitation from the permit
A 48-hour Acute WET limitation for TCW fluids is not appropriate and the Joint Trades strongly recommend that this requirement be removed from the permit.

The industry wide TCW fluid toxicity study forms the basis for this recommendation. The study concluded that several factors limit the potential for aquatic toxicity risks, including:

- TCW fluid discharges are typically of short duration. 75% of the discharges sampled during the study were less than 2 hours in duration (median discharge time was 1-hour). A 48- hour test exposure is extremely conservative is not representative of the behavior of these discharges in the marine environment.
- TCW fluid discharges are small volumes. TCW fluid discharges are estimated to be 0.01% of produced water discharge volumes.
- Of the substances evaluated during the study, no concentration was greater than conservative acute saltwater ecological thresholds. TCW fluids do not pose an unreasonable risk to the aquatic environment, and additional WET testing does not provide any added environmental benefit.

Implementation of WET testing requirements increases operational complexity and risk. Some of the operational considerations include:

- Increases in onshore waste volumes from fluids that may no longer be discharged.
- Safety risks increase due to increased material handling and transfer of fluids.
- Potential for increased risk for human exposure pathways due to waste being disposed of onshore.
- Increases in GHG emissions due to increased vessel and ground transportation.
- Burden on lab operations, impacting lab capacities and availability for testing, increase in testing materials/equipment, and increase in consumption of animals/organisms during testing. Currently, there are only 2-3 laboratories on the Gulf Coast that are capable of performing this type of WET testing.
- Offshore operations have unique challenges in meeting WET test hold times. Experience from the industry-wide study shows that holding times required by the WET test method are extremely difficult and sometimes impossible to meet. Implementation of 48-hour WET testing for TCW fluids will result in added cost and burden to the regulated community in the form of "special order" flights and ground transportation.
- Implementation of 48-hour testing significantly increases compliance uncertainty. Most TCW fluid discharges will have concluded before the sample reaches the laboratory. In the event of a sample not meeting the toxicity limits there will be nothing for an operator to do to take corrective action (the discharge will be over). This uncertainty will likely result in many operators choosing not to discharge the fluids. In essence, EPA is establishing a "de facto" zero discharge limitation on these fluids.

In addition, as noted the industry-wide study report, the critical dilutions listed in the Appendix D Table are overly- conservative for assessing TCW fluid discharges. The industry- wide TCW fluid toxicity study concluded the following:

"Recognizing that the median duration of the sampled TCW discharges was 1-h, a series of toxicity tests using a 2-h exposure was performed. These tests showed that toxicity for 2-h exposures was generally, less than toxicity in 48-h exposure tests. This suggests that, since TCW discharges are of short duration, a comparison of a 48-h NOEC with a critical effluent dilution (CD) as an indicator of potential acute toxicity has a high degree of conservatism."

The conservative nature of existing Critical Dilution tables to TCW fluid discharges provides additional rationale for removing the WET testing requirements from the permit. TCW fluid discharges are not steady-state, continuous discharges. These discharges are intermittent, short duration, and low volume discharges.

In 2017, EPA Region 6 acknowledged in the proposed GMG290000 permit's fact sheet that the number of available, experienced, and qualified laboratories for WET testing is limited. We agree with this statement. Given the number of TCW discharges that will require testing, the available laboratories cannot manage the volume of toxicity analyses that EPA is proposing for TCW fluids. This in turn could cause quality control issues. Laboratories only culture a limited number of test age organisms. Increasing the number of required tests in a short time frame is not possible. There are only 2-3 laboratories that can perform testing on offshore oil and gas discharges. Inability to predict extended platform downtime periods (i.e., intermittent production), logistics issues for these specific monitoring and testing requirements, and weather (i.e., hurricanes and other

tropical storms) can also be problematic with an increase in testing. Increasing required toxicity testing would not only increase the burden on the operator and the testing laboratories, but it will increase the operator's risk for additional missed samples resulting in administrative non-compliances.

2. Modify the limitation to a monitoring requirement
If EPA disagrees that the 48-hour acute WET limitations for TCW fluids should be removed, then the Joint Trades recommend that EPA provide the rationale and change the 48-hour acute limitation to a 48-hour acute monitoring requirement. As discussed above, the industry-wide study concluded that several factors limit the potential for aquatic toxicity risks, including:

- TCW fluid discharges are typically of short duration. 75% of the discharges sampled during the study were less than 2 hours in duration (median discharge time was 1-hour). A 48- hour test exposure is extremely conservative is not representative of the behavior of these discharges in the marine environment.
- TCW fluid discharges are small volumes. TCW fluid discharges are estimated to be 0.01% of produced water discharge volumes.
- Of the substances evaluated during the study, no concentration was greater than conservative acute saltwater ecological thresholds. TCW fluids do not pose an unreasonable risk to the aquatic environment. However, data collection through additional monitoring could provide a mechanism to further validate these conclusions.

In addition, a monitoring requirement may also present an opportunity for EPA and industry to collaborate on developing a more appropriate test procedure that better represents how these fluids are introduced into the marine environment. A test of less than 48 hours in duration would be more representative and less conservative.

3. Adding a compliance implementation period for the limitation.
Finally, if 48-hour acute WET testing for TCW fluids is included in the final permit, it is imperative that a compliance implementation period be included to allow operators time to establish procedures, processes, and resources to achieve compliance. Industry acknowledges that acute discharge testing limitation as proposed in the permit is a "pass / fail" requirement for compliance and DMR reporting for TCW fluid discharges. The Joint Trades strongly recommend that EPA establish a schedule of compliance for implementation of the new requirements as outlined in 40 CFR 122.47. Offshore facilities subject to these new requirements may require capital upgrades (e.g., fabrication / installation of diffusers or seawater dilution systems) making immediate compliance with the new requirements impossible. Accordingly, should EPA require 48-hour WET testing, the Joint Trades request EPA include a compliance schedule of two years for permittees to determine how to implement the new requirement. The Joint Trades propose the following language be added to this section of the permit:

Compliance with 48-hour Acute WET testing must be achieved within two years of the effective date of the permit.

This type of compliance implementation period would allow the regulated community to:

- Train operational personnel on the new requirements,

- Establish logistical plans and schedules to meet required holding times,
- Identify the impacts to industry laboratories to determine what additional resources are needed to accommodate the new testing,
- Allow for fabrication and installation of diffuser and/or seawater dilution systems if needed,
- Allow for constructing, contracting, and/or acquisition of additional vessels capable of compliantly managing materials for disposal, and
- Identify and plan for onshore disposal facility capacities and limitations and expansions as needed.

If both acute and chronic testing were required concurrently, to avoid the dual sample requirements, reduce complexity, and ensure the same fluid is used for both acute and chronic data, we ask that EPA acknowledge that results for the acute 48-hour test may be derived from the 7-day chronic test.

Response: A partial change has been made to the final permit. The final permit has been updated to allow the 48-hour result to be derived from the chronic test and a 6-month compliance schedule has been added.

A limitation on well treatment, completion and workover fluids is appropriate and consistent with the regulations at 40 CFR Part 125, Subpart M (Ocean Discharge Criteria). EPA disagrees that the Industry Study Report showed "that TCW fluids do not pose an unreasonable risk to the aquatic environment, and that additional WET testing does not provide any added environmental benefit." Although the TCW fluid discharges are typically of short duration and volume, results from the Industry Wide Study indicate there is reasonable potential for these discharges to exhibit extreme toxicity even in limited exposures and low concentrations. Duration of discharge does not necessarily determine the duration of the exposure, as there are other variables that can affect exposure. The acute tests for NPDES permitting range from 24-96 hours for the species selected. The test requirement for well completion and workover fluids will continue to be an acute 48-hour WET test with a limit. Removal of limitations from the permit or a monitoring only requirement is not sufficiently protective of the marine environment given the demonstrated toxicity reflected in the Industry Study Report. Additionally, as EPA's Region 4 National Environmental Policy Act (NEPA) Categorical Exclusion noted, the Rice's whale's habitat is primarily located in the Eastern Portion of the Gulf. Acute WET limitations are needed to provide appropriate protection for this endangered species.

As noted in Industry comment 11, "TCW fluid discharges are small volumes. TCW fluid discharges are estimated to be 0.01% of produced water discharge volumes." Given this statement, there should not be a significant or burdensome increase in onshore waste volumes from fluids that may no longer be discharged. In addition, EPA notes that the safety risks due to increased material handling and transfer of fluids, potential for increased risk for human exposure pathway due to waster being disposed of onshore, increases in GHG emissions due to increased vessel and ground transportation, burden on lab operations impacting lab capacities and availability for testing, increase in testing materials, or increase in consumption of organisms during testing will be minimal since these discharges contribute a small portion of the overall produced water discharges.

EPA is not establishing a de facto zero discharge elimination limits on these fluids. Implementation of 48-hour testing will not significantly increase compliance uncertainty. As the Permitting Authority, and in accordance with 40 CFR 122.41(h) and 122.41(l)(8), we reserve the right to make decisions regarding enforcement based on the data and facts presented. In event of a missed sample, EPA may use

enforcement discretion to make a determination regarding whether to pursue enforcement for permit non-compliance. In the event there is a contaminated or missed sample, the permittee must provide documentation regarding the sampling incident and a statement submitted with the DMR. As with all data submitted to EPA, the statement/documentation must be signed by the a "responsible corporate officer" or a "duly authorized representative" and include the certification statement at 122.22 (d). EPA does not agree that operators will cease to discharge due to these requirements.

While EPA is sensitive to implementation complexity, administrative burdens and costs are not considerations when applying ocean discharge criteria to avoid unreasonable degradation of the environment. Furthermore, this limit requires one additional laboratory test as compared with the prior permit. This should not significantly increase demand on lab operations, materials, organisms, and capacity. Region 4's 2018 permit included acute WET monitoring for this waste stream, therefore, there should not be significant additional fluid volume burden or human exposure associated with this limit. Facilities should already have identified and be using available laboratories in their area given this past requirement. Transportation should already be established for other required WET tests (i.e., produced water), established WET monitoring requirements, and daily operations so there would be no significant increase in GHG emissions.

Typical costs for a single acute or chronic WET for invertebrates or invertebrates test range from $450-$1300. EPA does not have evidence showing the WET testing cost of this waste stream to be significant.

The EPA and the OOC worked together on the Industry Wide Study for the entirety of the past permit cycle or approximately 5 years. The industry was aware that these discharges were likely to have a WET limit in the current permit cycle based on data from that study and subsequent meetings with the EPA. WET tests are common tests required for municipal and industrial facilities in Region 4.

EPA used the best available data and information to set this limit. We will consider all new submitted data concerning the application of critical dilutions during the next permit cycle. The Industry states "TCW fluid discharges are not steady-state, continuous discharges" but have recently requested on January 24, 2024 that Region 6 consider some of the TCW discharges to be classified as continuous after the issuance of their permit.

EPA welcomes collaboration with the Industry to better understand and characterize how these fluids are introduced into and impact the marine environment, but a monitoring only requirement is not necessary for that collaboration to occur. Due to the location of designated areas of biological concern unique to Region 4 and the presence of the endangered Rice's whale, Region 4 is issuing this permit to protect the marine environment from unreasonable degradation.

Region 6's issued its permit for the Western and Central portion of the Gulf of Mexico on May 11, 2023, and included WET acute testing requirements for this waste stream. EPA Region 4's permit will be issued approximately 8 months after Region 6's permit. This time lag provides the Industry additional time to address implementation complexities described above as well as laboratory challenges. In summary, based on the data from the Industry Study Report that showed reasonable potential for the TCW fluids to cause toxicity we disagree that there is a need for a two-year compliance schedule to comply with this limit. A compliance schedule will be added to the permit of 6 months from the effective date of the permit. Six months is a more appropriate time to come into compliance with these new requirements. Due to the location of designated areas of biological concern unique to Region 4 and the presence of the

endangered Rice's whale, Region 4 finds that a 2-year compliance schedule would not be appropriate. Labs have been identified during the study that are capable of performing these tests.

Comment 12: [Part I. Requirements for NPDES Permits, B. Effluent Limitations and Monitoring Requirements for New and Existing Sources, 7. Sanitary Waste (Facilities Continuously Manned for 30 or more consecutive days by 10 or More Persons), b. Limitations (pg. 52-53)]

The Joint trades recommend the following revisions to the permit language.

b. Limitations
Total Residual Chlorine. Discharges of sanitary waste must contain a minimum of 1.0 mg residual chlorine per liter and shall be maintained as close to this concentration as possible at all times.
A grab sample must be taken once per month and the minimum and average concentrations for the monitoring period shall be reported on the DMR. The approved analytical methods are Hach CN-66-DPD or the EPA method specified in 40 CFR Part 136 for Total Residual Chlorine. Samples must be taken at the nearest accessible location prior to discharge and after final treatment.

Equivalent Disinfection – Other Technologies. The use of other disinfection technologies, including, but not limited to, bio-membrane filtration and ultra-violet light, are allowed as substitutes for total residual chlorine provided that those technologies result in equivalent or improved disinfection of the sanitary waste stream.

Exception - Any facility which properly maintains a marine sanitation device (MSD) that complies with pollution control standards and regulations under Section 312 of the Act shall be deemed in compliance with permit prohibitions and limitations for sanitary waste. The MSD shall be tested annually for proper operation and the test results maintained at the facility or at an alternative site if not practicable. The operator shall indicate use of an MSD on the DMR.

Rationale:
The Joint Trades recommend that the EPA consider updating this standard to include additional types of disinfection technologies. Modern sanitary treatment equipment may also utilize other means by which to disinfect sanitary waste, such as bio-membrane technology and ultra-violet light. The single standard for total residual chlorine may limit the use of such technologies. Such technologies are proven and have been utilized in the treatment of sanitary waste for many years. In addition, USCG-approved MSDs are already in use that do not utilize chlorine for disinfection. These types of units are approved by the USCG and the International Maritime Organization (IMO).

Response: A change has been made to the final permit. The statement "Discharge of TRC must meet a minimum of 1 mg/l and shall be maintained as close to this concentration as possible" is consistent with Effluent Limitation Guidelines (40 CFR 435.14). EPA recognizes that other disinfection technologies are available and used in MSDs that are approved by the U.S. Coast Guard for use. As a result, the language in the final permit has been modified to include "Equivalent Disinfection – Other Technologies. The use of other disinfection technologies, including, but not limited to, bio-membrane filtration and ultra-violet light are allowed as substitutes for systems that use chlorine, provided that the MSD is approved by the U.S. Coast Guard and results in equivalent or improved disinfection of the sanitary waste stream to that considered in the ELG. For alternative MSDs that do not use chlorine, monitoring for TRC limitations is

not required when system is not properly operating or not operating unless a chlorine-based product is used as a backup disinfectant."

Comment 13: [Part I. Requirements for NPDES Permits, B. Effluent Limitations and Monitoring Requirements, 10. Miscellaneous Discharges (pg. 54-55)]

The Joint Trades recommend adding "Subsea Cleaning Fluids" to this section of the permit. Additionally, we are recommending that a definition of "subsea cleaning fluids" be included in the permit. See our comments under Part V, Section B – Other Definitions

10. Miscellaneous Discharges
The following miscellaneous discharges are authorized for discharge: Desalination Unit Discharge; Blowout Preventer Control Fluid; Uncontaminated Ballast Water; Uncontaminated Bilge Water; Mud, Cuttings, and Cement (including tracers) at the Seafloor; Uncontaminated Seawater; Uncontaminated Freshwater; Boiler Blowdown; Source Water and Sand; Diatomaceous Earth Filter Media; Subsea Wellhead Preservation Fluids; Subsea Cleaning Fluids; Subsea Production Control Fluids; Umbilical Steel Tube Storage Fluid; Leak Tracer Fluid, Riser Tensioner Fluid, Well Test Fluids, Bulk Transfer Operations Powder (Note: Authorized discharge is limited to dust emitted from vents that falls into water directly. No discharge of collected dust powder is authorized); Excess Cement Slurry, (Note: Discharges of cement slurry used for testing cement handling equipment are not authorized), Cement Equipment Washdown, Hydrate Control Fluid or Brine used as piping equipment preservation fluid (i.e., pipeline brines), and Aqueous Film Forming Foam (AFFF).

Rationale:
As subsea structures rest on the seafloor at depths greater than 2,000 feet for long periods from a few years to decades, structure components accumulate marine deposits/scale on and between component and connection sealing surfaces, e.g., wellhead, tubing head spools, hot stabs. These deposits include, but are not limited to, calcium carbonate and magnesium carbonate. During subsea maintenance and intervention activities of subsea equipment, equipment deployed from surface facilities, e.g., MODUs and MSVs, must connect to these surfaces and achieve a passing sealing test, as required by BSEE, to assure proper seating of equipment operating and to avoid ingress of extremely high subsea pressures and egress (losses of containment) of fluids to the environment. The accumulation of marine deposits frequently interferes with and prevents proper seating and sealing and must be removed. In most cases, mechanical removal via abrasive brushes (similar to a Scotch-Brite® pad) deployed via a ROV accomplished a sufficient, but not complete, removal in an hour or two of effort. In some cases, which are becoming more frequent as marine deposit accumulation intensifies on older subsea structures, multiple sets of brushes have been expended over more than twelve (12) hours of ROV removal effort with little effect on the thickening marine deposits.

In an effort to remove the marine deposits in a more effective manner, provide a cleaner connection surface for optimal seal performance, the open water, subsea application of an acidic cleaning agent to dissolve the deposits, usually in combination with mechanical removal by abrasive brushes, can effectively accomplish this task. The cleaning agent can be carried as a solid contained in equipment or in a fluid reservoir mounted on and dispensed through chemical ports or mechanical brush head attached to the ROV. Small volumes, approximately 50 gallons, are expected to be discharged, per large

connection surface cleaned. This method has been effectively deployed in the United Kingdom and Australia.

(Example equipment and products:
https://www.a60n.com/single-post/2018/01/08/solidcitric- subsea-cleaning-solution;
https://www.oceaneering.com/brochures/wellhead- cleaning tool
https://macdermidoffshore.com/our-solutions/drilling- solutions/service-solutions/oceanic-cw-subsea-de-calcification-fluid).

Considering the small volumes utilized and discharged and the currently permitted subsea fluid types and applications, one potential fluid has been tested utilizing the toxicity testing method, 7-day No Observable Effect Concentration (NOEC) of no less than 50 mg/l; the same method required for Miscellaneous Subsea Discharges of subsea wellhead preservation fluids, subsea production control fluids, umbilical steel tube storage fluids, leak tracer fluids, and riser tensioning fluids. For example, one potential fluid passes both Mysid shrimp (Mysidopsis bahia) chronic static renewal 7-day survival and growth test (Method 1007.0) and Inland Silverside minnow (Menidia beryllina) chronic static renewal 7-day larval survival and growth test (Method 1006.0) at the highest testing concentrations 200 mg/L (see Attachment B) Sub Sea Fluids Biomonitoring Report, EE USA Project No.: Q-2021-21, March 18, 2021)

Response: A change has been made to the final permit. The revised definition has been incorporated into final permit.

Comment 14: [Part I. Requirements for NPDES Permits, B. Effluent Limitations and Monitoring Requirements, 11. Miscellaneous Discharges of Freshwater and Seawater in Which Chemicals Have Been Added (pg. 57)]

The Joint Trades recommend the permit language be revised as follows:

11. Miscellaneous Discharges of Freshwater and Seawater in Which Treatment Chemicals Have Been Added, including, but not limited to: 1) excess seawater which permits the continuous operation of fire control and utility lift pumps, 2) excess seawater from pressure maintenance and secondary recovery projects, 3) water released during training of personnel in fire protection, 4) seawater used to pressure test, or flush, new, and existing piping and pipelines, 5) ballast water, 6) water flooding discharges, 7) once through non-contact cooling water, 8) seawater used as piping or equipment preservation fluids, and 9) seawater used during dual gradient drilling and well operations.

Rationale:
Seawater and fresh water used for fluid displacement in well operations is drawn from chemically treated and uncontaminated sources. The chemically treated water sources are the same as, or similar to, those sources used for water released during training of personnel in fire protection, ballast water, once through non-contact cooling water, water used as piping or equipment preservation fluids, and water used during Dual Gradient Drilling. The change provides clarity and would be more inclusive of current operations in industry.

Response: A partial change has been made to the final permit. EPA agrees with the language suggestion with modifications. Language in the final permit has been modified to add "*…Dual Gradient Drilling and well operations other than those covered by the other sections of Part I.B of the permit.*

Comment 15: [Part I. Requirements for NPDES Permits, B.
Effluent Limitations and Monitoring Requirements for New and Existing Sources, 11. Miscellaneous Discharges of…, c. Toxicity (pg. 57)]

The Joint Trades are requesting the following changes to reference the correct Table numbers of the permit (i.e. maintain the language from the previously-effective permit).

The 7-day minimum and monthly average minimum NOEC, must be equal to or greater than the critical dilution concentration specified in this permit in Table 7 for seawater discharges and Table 8 for freshwater discharges. Critical dilution shall be determined using either Table 7 or 8 of this permit in conjunction with (1) the discharge rate, (2) discharge pipe diameter, and (3) the water depth between the discharge pipe and bottom.

Response: A change has been made to the final permit.

Comment 16: [Part I. Requirements for NPDES Permits, D. Special Conditions, 3. Cooling Water Intake Structure Requirements, d. Monitoring Requirements, New non-Fixed Facilities, i. (pg. 74)]

The Joint Trades are requesting that visual inspections be required at least every 6 months. This request is backed by visual and remote inspection data obtained in EPA Region 6.

The operator must conduct either visual inspections or use remote monitoring devices (e.g., remotely operated vehicles (ROV), subsea cameras, or other monitoring device) during the period the cooling water intake structure is in operation. The operator must conduct visual inspections at least ~~weekly~~ every 6 months or at a lesser frequency as approved by the Director, to ensure that the required design and construction technologies are maintained and operated so they continue to function as designed. Alternatively, the operator must inspect using remote monitoring devices to ensure that the impingement and entrainment technologies are functioning as designed.

Rationale:
The observed rate of growth of biological material does not result in significant change over a one-week period. Changes are hard to discern over a monthly period. For a deepwater facility (does not employ a sea chest) that performed entrainment monitoring under the EPA Region 6 OCS GOM NPDES permit, the 2015 average monthly rate of growth expressed as % screen coverage was 2.5% with a monthly range of 0-6% growth.

Visual or remote monitoring on dynamically positioned vessels involves shutting down thrusters in order to inspect the sea chest screens. In the high currents of the gulf stream this is a very risky operation as loss of station-keeping while attached to the well would lead to disastrous environmental impacts. A 6-month time period would allow time to plan a safer operation around obtaining the visual/remote monitoring, something Region 6 implemented in the 2017 GMG290000 permit.

Response: A partial change has been made to the final permit. EPA agrees that frequency can be reduced, but not to a 6-month time frame, which would create a risk that fouling/accumulation of biological material would progress to a degree that impairs function of impingement and entrainment technologies. Inspections can occur monthly, not weekly.

Comment 17: [Part I. Requirements for NPDES Permits, D. Special Conditions, 3. Cooling Water Intake Structure Requirements, d. Monitoring Requirements, New Fixed Facilities that do not employ sea chests as intake structures, i. (pg. 75)]

The Joint Trades are requesting that visual inspections be required at least every 6 months. This request is backed by visual and remote inspection data obtained in EPA Region 6. The operator must conduct either visual inspections or use remote monitoring devices (e.g., remotely operated vehicles (ROV), subsea cameras, or other monitoring device) during the period the cooling water intake structure is in operation. The operator must conduct visual inspections at least ~~weekly~~ every 6 months or at a lesser frequency as approved by the Director, to ensure that the required design and construction technologies are maintained and operated so they continue to function as designed. Alternatively, the operator must inspect using remote monitoring devices to ensure that the impingement and entrainment technologies are functioning as designed.

Rationale:
The observed rate of growth of biological material does not result in significant change over a one-week period. Changes are hard to discern over a monthly period. For a deepwater facility (does not employ a sea chest) that performed entrainment monitoring under the EPA Region 6 OCS GOM NPDES permit, the 2015 average monthly rate of growth expressed as % screen coverage was 2.5% with a monthly range of 0-6% growth.

Response: See Response to Comment 16. A partial change has been made to the final permit with modifications. Inspections can occur monthly, not weekly.

Comment 18: [Part I. Requirements for NPDES Permits, D. Special Conditions, 3. Cooling Water Intake Structure Requirements, d. Monitoring Requirements, New Fixed Facilities that Employ Sea Chests as Intake Structures, i.(pg. 76-77)]

The Joint Trades are requesting that visual inspections be required at least every 6 months. This request is backed by visual and remote inspection data obtained in EPA Region 6.

The operator must conduct either visual inspections or use remote monitoring devices (e.g., remotely operated vehicles (ROV), subsea cameras, or other monitoring device) during the period the cooling water intake structure is in operation. The operator must conduct visual inspections at least ~~weekly~~ every 6 months or at a lesser frequency as approved by the Director, to ensure that the required design and construction technologies are maintained and operated so they continue to function as designed. Alternatively, the operator must inspect using remote monitoring devices to ensure that the impingement and entrainment technologies are functioning as designed.

Rationale:
The observed rate of growth of biological material does not result in significant change over a one-week period. Changes are hard to discern over a monthly period. For a deepwater facility (does

not employ a sea chest) that performed entrainment monitoring under the EPA Region 6 OCS GOM NPDES permit, the 2015 average monthly rate of growth expressed as % screen coverage was 2.5% with a monthly range of 0-6% growth.

Response: See Response to Comment 16. A partial change has been made to the final permit with modifications. Inspections can occur monthly, not weekly. The region would consider new data on entrainment monitoring for the next permit cycle.

Comment 19: [Part III. Monitoring Reports and Permit Modification, B. Permit Modification, 3. (pg. 116-117)]

The Joint Trades recommend striking the final sentence in Part III. Monitoring Reports and Permit Modification, B. Permit Modification, paragraph 3:

Any such reasonable and prudent alternative measures may be added as conditions to this permit through the reopening and modification process.

Rationale:
During the drafting and development process for the NPDES permit, EPA performs a consultation with NMFS as referenced in the paragraph. This process could occur again while developing the permit that may follow. Referencing a potential reopening and modification of the permit outside of this standard process creates uncertainty for the regulated community.

Response: No change has been made to the final permit. EPA has the responsibility and authority to reopen permits at any time when new significant information is received that could negatively impact the environment under its jurisdiction in the Eastern Gulf of Mexico and would have justified the application of different permit conditions at the time of original permit issuance. See 40 CFR §122.62(a)(2). The permit language restates this existing and inherent regulatory authority.

Comment 20: [Part V. Test Procedures and Definitions, A. Test Procedures, 15. Whole Effluent Toxicity Testing, a.1.b.(pg. 158)]

If the 7-day chronic testing requirements are included for monitoring-only in the final permit, the Joint Trades recommend modifying the proposed language in this paragraph as follows:
b. For each set of tests conducted, a grab sample of final effluent shall be collected and used to initiate the test within ~~36 hours~~ 72 hours of collection.

Rationale:
The hold time for TCW samples should be adjusted to the maximum of 72 hours. A 36-hour hold-time will introduce significant logistical complexity to well workover, completion, and treatment operations by creating the need for operators to have multiple vessels and flights dedicated to sample transportation only. The increased number of vessel and helicopter trips between offshore facilities and shore will increase emissions, noise, and other environmental impacts. They will also increase safety risks associated with landing/takeoff, vessel transport and transfer of samples. These risks will be more acute given a 36-hour time constraint. The requirement for additional flights/vessel trips will also increase costs, as operators compete for scarce supply of helicopters and fast vessels. Lastly, the competition for helicopters and fast vessels will result

in project delays, which will further increase costs and result in additional environmental impacts.

Additionally, the distance from many offshore facilities in the EPA Region 4 coverage area to the laboratories where testing will be performed could be greater than those in the EPA Region 6 coverage area. Difficulty in meeting a 36-hour test initiation time when transporting samples from locations in the EPA Region 6 coverage area has already been acknowledged as an extenuating circumstance, in which utilization of the full 72-hour option to initiate testing would be appropriate.

Response: A change has been made to the final permit.

Comment 21: [Part V. Test Procedures and Definitions, A. Test Procedures, 15. Whole Effluent Toxicity Testing, a.1.c.(pg. 158-159)]

The Joint Trades propose adding the phrase "if an additional sample can be obtained" due to potential difficulties with re- sampling.

Additionally, all test results must be evaluated and reported for concentration-**response** relationship based on "Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part136),"EPA/821/B00/004(http://water.epa.gov/scitech/methods/cwa/wet/upload/2007_07_10_methods_wet_disk2_atx.pdf), or the most current edition. If the required concentration-response review fails to yield a valid relationship per EPA/821/B-00/004 (or the most current edition), that test shall be repeated if an additional sample can be obtained. Any test initiated but terminated prior to completion must be reported with a complete explanation for the termination. If the conditions of test acceptability are met as described above and in Part V.15.4, and the percent survival of the test organism is equal to or greater than 80 percent in the critical dilution concentration and all lower dilution concentrations, the survival test shall be considered to be passing and the permittee shall report a survival NOEC of not less than the critical dilution in the DMR for monitoring purposes.

Rationale:
If a sample becomes compromised in any way during transportation or if toxicity tests are inconclusive or invalid, having the opportunity of collecting another sample may not be possible if the discharge is no longer occurring. This is because these discharges are short in duration.

Response: No change has been made to the final permit. If a sample is compromised, or if a required additional sample cannot be obtained, then the operator should report that on the DMR.

Comment 22: [Part V. Test Procedures and Definitions, A. Test Procedures, 15. Whole Effluent Toxicity Testing, 2.a(pg. 159)]

The Joint Trades recommend retaining the language from the previous permit which was removed in the proposed permit language.

For well treatment, well completion or well workover fluid discharges monitoring only requirements apply. Test results shall be reported as pass or fail. A failure will not be considered a violation of the permit.

Rationale:

Retaining this language would ensure clarity regarding "monitoring-only" requirements for TCW fluids in the permit and provide certainty to the regulated community that reporting failure results will not be considered violations.

Response: No change has been made to the final permit. In the previous general permit, all well treatment, well completion or well workover fluid discharges required monitoring only. In this permit, the acute WET testing is a limit. Chronic WET testing is monitoring only.

In the industry Study Report, 12 out of 28 (43%) samples were toxic at their critical dilution for the mysid. 6 out of 28 (21%) were toxic for menidia and 13 samples out of 28 total were overall toxic (46%). There were 3 samples that had a NOEC of <0.1%. For these samples, all dilutions tested were toxic. Not taking the critical dilutions into consideration, the Study produced some very low LC_{50}s. LC50s as low as 0.05% were recorded. These results show toxicity that should be addressed without delay to ensure that unreasonable degradation of the marine environment does not occur. That is the reason for the inclusion of the acute limit in this permit.

Comment 23: [Part V. Test Procedures and Definitions, A. Test Procedures, 15. Whole Effluent Toxicity Testing, b.(pg. 162)]

The Joint Trades are requesting that EPA acknowledge that if both acute and chronic testing were required concurrently, EPA would allow the results for the acute 48-hour test to be derived from the 7-day chronic test. This would assist in avoiding the dual sample requirements, would reduce complexity, and would ensure the same fluid is used for both acute and chronic data.

Response: A change has been made to the final permit.

Comment 24: [Part V. Test Procedures and Definitions, A. Test Procedures, 15. Whole Effluent Toxicity Testing, (b)(i) (pg. 164)]

If the acute testing limitation requirements are included in the final permit, the Joint Trades recommend modifying the permit language on test initiation as follows:

For each set of tests conducted, a grab sample of final effluent shall be collected and used to initiate the test within ~~36 hours~~ 72 hours of collection.

Additionally, the Joint Trades propose maintaining the phrase from the previous permit regarding "if an additional sample can be obtained".

If control mortality exceeds 10 percent in any test, the test(s) with that species (including the control) shall be repeated if an additional sample can be obtained. Any WET test initiated but terminated prior to completion must be reported with a complete explanation for the termination. If the requirements of EPA's WET test method's TAC are met as described above and in Part V.15(b).4…

Rationale:
In the event that a sample becomes compromised in any way during transportation or if toxicity tests are inconclusive or invalid, having the opportunity of collecting another sample may not be possible if the discharge is no longer occurring. This is because these discharges are short in

duration.

In regards to the recommendation to revise the test initiation time from 36 to 72 hours, see prior comments on “extenuating circumstances” for chronic testing in comment #20.

Response: A partial change has been made to the final permit. The allowance for up to 72 hours of collection hold time language has been added to the final permit. If an additional sample cannot be obtained for retests, that should be reported on the submitted DMR for that quarter.

Comment 25: [Part V. Test Procedures and Definitions, A. Test Procedures, 15. Whole Effluent Toxicity Testing, (b)(ii)(pg. 165)]

Similar to the above comment, the Joint Trades proposes maintaining the phrase regarding "if an additional sample can be obtained" due to potential difficulties with re-testing.

ii. The permittee may reduce monitoring frequency to once per discharge for the duration of the permit for Well Treatment, Completion or Workover fluid discharges after two consecutive valid tests, if an additional sample can be obtained. These tests are referred to as “routine” tests.

Rationale:
In the event that a sample becomes compromised in any way during transportation or if toxicity tests are inconclusive or invalid, having the opportunity of collecting another sample may not be possible if the discharge is no longer occurring. This is because these discharges are short in duration.

Response: See Comment 24.

Comment 26: [Part V. Test Procedures and Definitions, A. Test Procedures, 15. Whole Effluent Toxicity Testing, (b)(ii)(pg. 165-166)]

The Joint Trades recommend revising this requirement as follows:
The summary laboratory reports shall include, as a minimum, the following information:

(1) Permittee’s Name
(2) Name of WET test and EPA WET test method number
(3) Name of WET test species
(4) Outfall identification designation and type of wastewater
(5) Name of biomonitoring laboratory
(6) Date sample was collected
(7) Date and time test initiated
(8) Critical Dilution
(9) Indicate if test is “valid.” If not, state reasons why (i.e., what EPA WET test methods TAC not met).
(10) LC50 for ~~both the growth test and~~ the survival test.

Rationale:
These changes would ensure clarity for laboratories performing the testing as acute test methods are survival only and do not include growth test methods.

Response: A change has been made to the final permit with the addition of 11. NOEC/sublethal endpoints for language for any chronic tests performed.

Comment 27: [Part V. Test Procedures and Definitions, A. Test Procedures, 15. Whole Effluent Toxicity Testing, (b)(iii)(pg. 166)]

The Joint Trades recommend revising this requirement as follows:

(iii) An LC50 of ~~less~~ greater than or equal to the CD% effluent in any valid routine or additional definitive Survival ~~or Growth~~ WET test for either species will not be a violation of this permit.

Rationale:
These changes would ensure clarity for laboratories performing the testing as acute test methods are survival only and do not include growth test methods. Additionally, striking the words "less" and “or Growth” would ensure the proper interpretation of this requirement as relating to acute test results, which could result in violations, while chronic test results would be for monitoring only.

Response: A change has been made to the final permit.

Comment 28: [Part V. Test Procedures and Definitions, A. Test Procedures, 15. Whole Effluent Toxicity Testing, (b)(iii)(pg. 166)]

The Joint Trades recommend revising this requirement as follows:
If still discharging, the first additional WET test sample shall ~~begin~~ be collected within ~~one day~~ one week of receiving the ~~end of the routine~~ WET test failure results and shall be ~~conducted~~ collected every other ~~day~~ week thereafter until two consecutive additional passing WET tests are completed.

Rationale:
As written, operators would be required to sample for routine tests and then sample again before the results are known in order to meet the holding time at the laboratory to allow for starting an additional test within one day. Additionally, requiring tests to be conducted every other day thereafter would require sampling for each subsequent re-test before knowing results of the prior re-tests. For most discharges lasting less than four days, the TCW discharge would have ceased before receiving test results.

Response: A change has not been made to the final permit. If samples are submitted for testing a week after results are received, it is likely that the discharge will be completed, and a sample will not be able to be obtained. The industry has emphasized in these current comments and in other venues that these types of discharges are short in duration. Holding times have been extended to 72 hours.

Comment 29: [Part V. Test Procedures and Definitions, B. Other Definitions (pg. 167)]

The Joint Trades recommend revising this statement to clarify the references to the regulatory citation and implementing statute.

All definitions contained in Section~~s~~ 502 of the Act and 40 CFR 122.2 shall apply to this permit and are incorporated herein by references. Unless otherwise specified in this permit, additional definitions of words or phrases used in this permit are as follows:

Rationale:
These changes would reflect the full scope and intent of the statement.

Response: A change has been made to the final permit.

Comment 30: [Part V. Test Procedures and Definitions, B. Other Definitions (pg. 179)]

The Joint Trades are requesting the following change to address a typographical error whereby the word "slurried" was replaced with "slurred".

71. Produced Sand means the ~~slurred~~ slurried particles used in hydraulic fracturing, the accumulated formation sands and scales particles generated during production.

Response: A change has been made to the final permit.

Comment 31: Part V. Test Procedures and Definitions, B. Other Definitions (pg. 180)]

The Joint Trades request the following change:
72. Produced Water means the water (brine) brought up from the hydrocarbon-bearing strata during the extraction of oil and gas, and can include formation water, injection water, and any chemicals added downhole or during the oil/water/gas separation process.

Rationale:
The definition change would provide clarity, be more inclusive and would reflect a more realistic approach with current industry operations. The basic separation process at any offshore production facility is designed to separate oil, natural gas and produced water into three (3) distinct streams for processing, handling and/or treatment.

Response: A change has been made to the final permit.

Comment 32: [Part V. Test Procedures and Definitions, B. Other Definitions (pg. 181)]

The Joint Trades recommend adding a new definition to the permit:

"Subsea cleaning fluids" means acidic cleaning agents used to dissolve marine deposits on subsea equipment during subsea maintenance and intervention activities to assure proper sealing of operating equipment and to avoid ingress of extremely high subsea pressures and egress (losses of containment) of fluids to the environment.

Rationale:
The Joint Trades request including this definition to accompany the request to add "subsea cleaning fluids" to the Part I. Requirements for NPDES Permits, Section B. Effluent Limitations and Monitoring Requirements, 10. Miscellaneous Discharges" section of the permit.

Response: See comment 13, definition has been incorporated into final permit.

Comment 33: [Part V. Test Procedures and Definitions, B. Other Definitions (pg. 187)]

The Joint Trades request that once all edits and changes to the permit text language have been completed, that Table 1 requirements be updated accordingly to match. The Joint Trades would prefer that Table 1 be removed completely from the permit.

Rationale:
EPA has historically stated that the permit text holds precedent over Table 1. Additionally, including the table in the permit could potentially insert inconsistencies between the permit language and Table 1. For example, there is a table entry in the proposed permit for "Workover Fluids (includes packer fluids)" that may introduce confusion on whether both chronic and acute WET testing requirements are intended to be "monitoring only" requirements, which may not be the intent of the text in the body of the permit as currently drafted.

Response: No change has been made to the final permit. Table 1 is not an enforceable part of the permit. Table 1 is meant for quick reference only for the ease of the operators. It will be updated to reflect the permit requirements more clearly.

2. Shell Exploration & Production Company

Shell Exploration and Production Company, together with its affiliates engaged in offshore exploration and production in the United States Gulf of Mexico (collectively referred to here as Shell), is pleased to submit comments on the above-referenced proposed permit, published in the Federal Register on June 9, 2023.

Shell, one of the largest leaseholders and producers of oil and natural gas on the U.S. Outer Continental Shelf (OCS), supports and endorses the comments submitted by the Offshore Operators Committee, American Petroleum Institute, National Ocean Industries Association and Louisiana Mid-Continent Oil and Gas Association. In particular, Shell is concerned that the burden and schedule impacts of the proposed TCW (Treatment, Completion, Workover) fluid WET (Whole Effluent Toxicity) testing are not well understood. We are also concerned that the proposed additional limitations and monitoring of TCW fluids and discharge prohibition of gel-like or solid phase substances have not been fully explained, justified or the impacts to the industry clearly considered. Furthermore, we are concerned that the absence of a compliance implementation period would not allow industry (inclusive of operators and contractors) sufficient time to establish procedures, processes, equipment modifications, and/or
resources to achieve compliance.

Response: These comments are the same in substance as comments made by the Joint Trades (OOC) and are fully addressed above in the Region's other responses.