

**Final 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 Western Portion of the Outer Continental Shelf of the Gulf of Mexico (GMG290000)**

**Agency:** United States Environmental Protection Agency

**Action:** Final permit decision and response to comments received on the draft reissued NPDES permit publicly noticed in the Federal Register on May 11, 2017.

**Date:** September 18, 2017

**SUBSTANTIAL CHANGES FROM PROPOSED PERMIT:**

All changes are discussed in the “Responses to Comments” section below and only significant changes are listed here.

1. An operator is not required to file eNOI 24-hour in advance to obtain permit coverage;
2. In a case-by-case circumstance, the primary operator may require day-to-day or vessel operators to file their own eNOIs for dual coverages;
3. Drilling vessels performing jobs within the same lease block may file one NOI for coverage;
4. Bridged facilities may file one eNOI;
5. In the event the eNOI system is temporarily unavailable, a written temporary NOI filed with certification and signature is good for seven days from the day of filing, but must followed up with an eNOI;
6. Existing permittees covered under the 2012 permit will be covered by this permit until April 1, 2018, with eNOIs to continue coverage due on or before that date;
7. An operator may file Notice of Termination (NOT) up to one year after termination of lease ownership;
8. Monitoring exception for sanitary and domestic waste discharges using approved MSDs from previous permit was reinstated;
9. An oil and grease confirmation sample shall be taken within two hours after sheen is observed from produced water discharge;
10. Operators are not required to report produced water sheen to the National Response Center, but must report all sheen observation events to EPA;
11. Toxicity testing frequency for produced water discharges remains the same as in the previous permit;
12. Existing dischargers under the 2012 permit shall commence testing schedules in the 2017 permit as of the effective day of this permit;
13. Additional toxicity testing for produced water after an application of well treatment, completion or workover fluids is not required, information on these discharges will be collected as part of the well treatment, completion, and workover fluids (TCW) Studies;

14. The deadlines for operators to submit the Industry-wide Study Plan and the final report for well treatment, completion, and workover fluids are changed;
15. A condition which requires operators to flush and capture hydrate control fluids or pipeline brine contained in pipelines, umbilical, or jumpers before or at the time of abandonment is removed from the final permit;
16. Fixed monitoring frequency is replaced with tier-approach monitoring frequency for intake velocity through the cooling water intake structure; and
17. An exception to allow operators submit SEAMAP data instead of entrainment monitoring is added.

## RESPONSES TO COMMENTS:

The EPA received comments from seven entities including: 1) the Joint Trades, 2) BP Exploration and Production Inc., 3) Environmental Planning Specialists, Inc., 4) International Association of Drilling Contractors, 5) Element-Lafayette, 6) Petroleum Equipment and Services Association, and 7) Center for Biological Diversity. Summaries of those comments and the EPA's responses are discussed below. While most of comments from regulated communities focus on operation requirements, comments from environmental groups mainly focus on regulatory requirements. Therefore, the EPA's responses are addressing the permit conditions first, then other regulatory requirements.

The Joint Trades: The Offshore Operators Committee (OOC), the American Petroleum Institute (API), and the National Ocean Industries Association (NOIA) (referred to as "the Joint Trades") submitted joint comments. The following 46 comments were provided by the Joint Trades.

Comment 1: [Notice of Intent-Part I.A.2] The Joint Trades request that the requirement for a permittee to file a Notice of Intent (NOI) 24-hours in advance be removed from the permit because in certain situations, it is not always feasible for a permittee to file a Notice of Intent (NOI) 24-hours in advance to cover a discharge.

Response: The EPA understands that it is not always feasible for a permittee to file a Notice of Intent (NOI) 24-hours in advance of discharging, particularly for drilling ships or vessels. The 24-hour in advance condition is removed from the final permit. However, operators should be aware that an operator is not authorized to discharge until a complete NOI has been submitted. The EPA advises operators to file an NOI for coverage as early as possible (at least 24-hour in advance) in case the electronic Notice of Intent (eNOI) system is temporarily not available or the NOI is incomplete and must be revised.

Comment 2: [Notice of Intent-Part I.A.2] The Joint Trades requested that the following language be struck from the proposed permit condition in Part I.A.2: "Other operators or vessel operators must file an eNOI to cover discharges which are directly under their control ~~but are not directly associated with exploration, development or production activities, only if such discharges are not covered by eNOIs filed by the primary operator.~~" The Joint Trades explained that there are instances where third-party operators are in direct control of discharges which are directly associated with exploration, development or production activities. There are also instances when third-party operators may be in direct control of the same type of discharges covered by the

eNOI filed by the primary operator. This requirement puts the liability burden on the primary operator for discharges in which they have no direct control.

Response: While a third-party operator may have direct control of certain activities or discharges, the primary operator does have the ability to hire, fire, or give instructions to contactors who conduct the actual work that results in discharges regulated by the permit. The primary operator must ensure that the third-party operator will follow proper operation procedures to comply with this permit and therefore, the primary operator will bear or share a certain degree of liability under the permit. The EPA agrees to change the language in the final permit. However, the revised language does not change the requirement for the primary operator to file a NOI as stated in the permit “The primary operator must file an electronic Notice of Intent (eNOI) for discharges directly associated with oil/gas exploration, development or production activities to be covered by this permit.” The revised language will allow the third-party to file a separate NOI which may result in a dual-coverage for the same discharge. The final condition now reads “Other operators or vessel operators must file an eNOI to cover discharges which are directly under their controls but are not covered by eNOIs filed by the primary operator. In a case-by-case circumstance, the primary operator may require day-to-day or vessel operators to file their own eNOIs for dual coverages.”

Comment 3: [Notice of Intent-Part I.A.2] The Joint Trades requested clarification on why a separate NOI would now be needed for bridged facilities with duplicate discharges. BOEM and BSEE recognize bridged facilities as one complex with a single assigned ID number and operators have always reported the worst case for multiple discharges within one permitted outfall or feature (PF).

Response: The reason the EPA proposed separate NOIs for bridged facilities was that only one discharge monitoring result could be reported for one permitted feature and the EPA understood that bridged facilities have different BOEM/BSEE assigned ID numbers. If bridged facilities have the same BOEM/BSEE ID numbers, the EPA will accept one NOI for bridged facilities. The Note referring to bridged facilities is deleted from the final permit.

Comment 4: [Notice of Intent-Part I.A.2] The Joint Trades requested the EPA allow a 45-day time-period for submittal of the official eNOI via the eNOI system when the eNOI system is unavailable and to allow for the filing of a temporary paper NOI when necessary.

Response: After further consideration of the e-Reporting regulatory requirements, the EPA has concluded that a temporary NOI in the form of an email would not meet the requirement for a legal signature necessary to provide permit coverage and discharge authorization. The final permit will not accept temporary e-mail NOIs since without a valid electronic signature (such as provided in the eNOI system or a paper NOI), no legal authorization to discharge can be provided. A written and signed paper NOI mailed to the EPA will be accepted as temporary coverage based on the postmark date. According to information available to the EPA, during the current permit term the system has gone down occasionally, but rarely for more than 24 hours. Individuals seeking to register to use the eNOI system, however, have occasionally experienced longer delays in approval of their registrations. The EPA will consider disruptions in both the eNOI filing and eNOI registration systems (including waiting on EPA personnel to resolve

issues) to fall under the meaning of the system being unavailable and thus allow the use of temporary paper NOIs if necessary. The EPA will allow new dischargers to file temporary paper NOIs until April 1, 2018, following up with eNOI submittal by that date.

Dischargers are encouraged to have appropriate personnel registered to use the electronic reporting systems early and to file NOIs at least 24 hours in advance. Even if the eNOI system is temporarily down, there is an excellent chance it will be back up in less than 24 hours. Please note that the temporary NOI process is only for situations where the eNOI/Registration systems are unavailable due to issues on the EPA's end, not where the discharger's computer system or internet connection is not functioning correctly or is incompatible for some reason, such as a company's computer security settings. The eNOI system has been designed to be compatible with all major web browsers. The EPA suggests operators test system compatibility to avoid delays when an NOI needs to be filed.

In response to the request for more time to file the official electronic NOI, taking into account that the system is rarely down for more than 24 hours, the final permit has been modified to allow submittal of the official eNOI within 7 days, with the ability to request a further extension if a system is still unavailable after 7 days. Submittal of the eNOI will populate the necessary information in the NetDMR system to allow required reporting, some of which may be required in less than 45 days. In any event, it is expected that the temporary NOI process will rarely, if ever, be necessary since the eNOI system is rarely down and most operators will likely file their NOIs far enough in advance to avoid needing to file a temporary paper NOI. As stated in response to Comment 1, the EPA recommends that operators file eNOIs sooner, rather than later. The final permit states that the temporary NOI is good for 7 days.

Since the EPA is developing a new eNOI system and in case the new system is not available on the effective date of the permit, EPA determines to allow permittees under the 2012 permit be automatically covered by the 2017 permit as of the effective date provided they file their eNOI by April 1, 2018. 40 CFR 122.28(b)(2)(vi) allows Director to notify a discharger that they are covered by a general permit without submittal of an NOI.

Comment 5: [Notice of Intent-Part I.A.2] The Joint Trades suggested that the EPA change the following permit condition [Part I.A.2] by deleting the parenthesis to read: "Facilities which are located in lease blocks that are either in or adjacent to "no activity" areas or require live bottom surveys are required to submit both an eNOI that specifies they are located in such a lease block and a notice of commencement of operations (~~e.g., drills, installations, discharges, ....~~)" because this information is already required under Part I.A.2 (a through l).

Response: The EPA has no objections and the suggested change has been made to the final permit.

Comment 6: [Notice of Termination-Part I.A.3] The Joint Trades requested a one-year time frame for submittal of NOTs following termination of lease ownership. This request is to account for the many possible reasons a Permittee may be required to hold permit coverage following lease termination. Operators have up to one year from lease expiration to remove a facility. During this timeframe, there could be removal and/or abandonment operations that result in

discharges authorized by the permit. A one-year time period reduces the number of NOTs and NOIs, where an operator terminates coverage and then has to reapply for coverage of discharges within a one-year time frame.

Response: The EPA has no objection. The final permit has been modified to extend the timeframe for submittal of NOTs to one year so that operators have ample time to remove facilities or perform associated removal jobs and have authorization for any covered discharges during that time.

Comment 7: [Other Reporting Requirements-Part I.A.5] The Joint Trades raised issues about 1) the inactive website <http://www.epa.gov/region6/gen/w/offshore/home.htm> which provides instructions and additional information regarding reporting requirements; and 2) inaccurate email address [GMG29TEMPeNOI@epa.gov](mailto:GMG29TEMPeNOI@epa.gov) which handles temporary NOIs. The Joint Trades also requested that temporary paper NOI language is added to the permit that allows a 45-day timeframe to submit an official eNOI as discussed in Comment 4 above.

Response: As indicated in Response to Comment 4, the final permit will not accept temporary e-mail NOIs since without a valid electronic signature (such as provided in the eNOI system, but not via e-mail), no legal authorization to discharge can be provided. Therefore, a temporary NOI email address is not included in the final permit. The EPA made a major restructuring and consolidation of websites in early 2017. The old independent EPA regional websites are no longer available. A new website for documents related to offshore permitting in the Gulf of Mexico has been created at: <https://www.epa.gov/npdes-permits/western-and-central-gulf-mexico-offshore-oil-gas-mpdes-program>. The EPA has determined that there is no need to repeat the same language for temporary NOIs in Part I.A.5.

Comment 8: [Part I.B.2.c.2 Non-Aqueous Based Drilling Fluid - Retention of Cuttings and BMP] The Joint Trades requested a change in the permit language to reference the correct section of the permit and the agency that replaced the Mineral Management Service.

Response: The reference to Retention of Non Aqueous Based Drilling Fluid on Cuttings has been corrected and “Mineral Management Service” has been replaced with “Bureau of Safety and Environmental Enforcement (BSEE)”.

Comment 9: [Produced Water-Part I.B.4.a] The Joint Trades suggested changing the following condition in Part I.B.4.a “The addition of dispersants or emulsifiers to produced water discharge is prohibited. 40 CFR §110.4.” to read as “The addition of dispersants or emulsifiers downstream of treatment system to the overboard produced water discharge lines is prohibited.” because as proposed, the EPA would inadvertently be limiting the use of scale control agents, corrosion inhibitors, and emulsifiers from being used both upstream and in the produced water treatment system. Dispersants are added to scale control agents and corrosion inhibitors to increase performance.

Response: 40 CFR §110.4 prohibits using dispersants or emulsifiers to comply with the provision in §110.3(b) which prohibits discharges that “Cause a film or sheen upon or dis-coloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited

beneath the surface of the water or upon adjoining shorelines.” Because toxicity testing is required for produced water, which will also detect any toxic effect caused by the addition of dispersants and emulsifiers, the EPA agrees to change the permit condition to read as: “The addition of dispersants or emulsifiers downstream of the treatment system to the overboard produced water discharge lines is prohibited. The use of dispersants or emulsifiers downstream of the treatment system for the purpose of preventing detection of a sheen is prohibited.” The operator must still comply with the provision of Part I.C.3 for limited use of dispersants, surfactants, and detergents.

Comment 10: [Produced Water – Oil and Grease Sampling-Part I.B.4.b.2] The Joint Trades requested that the current permit condition requiring oil and grease confirmation samples be taken within two hours be retained in the reissued permit, instead of the proposed requirement to collect a grab sample within 30 minutes after a sheen is observed. The Commenters also asked that either grab or 24-hour composite samples be allowed for compliance purposes.

Response: To accommodate situations where the location of visual monitoring, supplies storage, and sampling points are located such that mobilizing for sampling within 30 minutes would not be possible, the EPA agrees to retain the current permit’s requirement to collect a sample to monitor oil and grease compliance within 2-hours after a sheen is observed. Additionally, the final permit allows the option of collecting either a grab sample or a composite sample. However, a composite sample must contain 4 or more grab samples if an operator chooses to collect composite samples.

Comment 11: [Produced Water – Toxicity Testing Frequency-Part I.B.4.b.3] The Joint Trades requested that the current permit’s produced water toxicity testing frequency and language remain unchanged. The majority of operators perform toxicity tests for produced water on an annual frequency. The proposed increase in frequency to twice a year will be a significant economic burden for offshore operators currently testing for toxicity on an annual basis. These additional toxicity tests for routine produced water discharges would be an increase in operating expenses with negligible value. Considering the very low number of toxicity test failures based on actual lab results, there is no environmental benefit to justify this increased expense.

Response: The EPA has reconsidered this requirement and concluded that annual toxicity testing is sufficient. This conclusion is based on the fact that the permit requires toxicity samples to be representative of produced water discharges, that retests are required following toxicity test failures, and because the property of produced water should be relatively stable. The EPA agrees to retain the current toxicity testing frequency for produced water.

Comment 12: [Produced Water – Toxicity Test-Part I.B.4.b.3] The Joint Trades requested that the operator conducts the first toxicity test for new discharges within 90 days instead of proposed 30 days after the discharge begins.

Response: The current three-month timeframe during which initial produced water toxicity tests must be performed for new discharges has been retained in the final permit.

Comment 13: [Produced Water – Toxicity Test-Part I.B.4.b.3] The Joint Trades requested that existing discharges, that are covered under the current permit issued in 2012, should be required to conduct a test within 6 months after they obtain coverage under the reissued permit.

Response: Because existing discharges will be authorized under this permit as of the effective date of the permit, existing facilities could start a new schedule for toxicity tests in 2018. Therefore, the final permit language is changed to read as “Existing dischargers under the 2012 permit shall commence testing schedules in the 2017 permit as of the effective day of this permit. If the permittee qualified to monitor produced water toxicity at the reduced frequency of once per year under the 2012 permit, the required monitoring frequency shall remain at once per year as long as the discharge is compliant with the toxicity limits. Results of testing for any overlapping monitoring period that were done during the previous permit may also be used to satisfy that monitoring period under the 2017 permit.”

Comment 14: [Produced Water – Toxicity Test-Part I.B.4.b.3] The Joint Trades requested deletion of the following proposed condition: “The operator must conduct a new toxicity test if the sample used for the previous test did not represent an application of flow back of well completion fluids, workover fluids, well treatment fluids, or hydrate control fluids.” This new requirement is overly burdensome with challenges, such as 1) well treatment, completion and workover (TCW) fluids study has not been done; 2) uncertainty of how long it will take these fluids to reach the facility and be treated before impacting the produced water discharge and when to take samples; 3) toxicity testing timing needs to be coordinated well in advance with testing laboratories; 4) discrete instances of TCW fluids commingled with produced water are short in duration and careful planning would need to be in place in order to obtain a representative sample with no guarantee that can be accomplished; and 5) operational scenarios frequently change and as the proposed language is very broad and lack clarity, it will be almost impossible for an operator to determine daily whether the previous test was representative of current conditions and an additional toxicity test would need to be conducted.

Response: After reconsidering this requirement, the EPA agrees with the commenters’ concerns and has removed the proposed new requirement. However, it is the operator’s responsibility to take representative samples to comply with the produced water toxicity testing requirement. The operator may not exclude monitoring at times flow back would be present. The results of the TCW fluids study will be considered in development of permit condition for the 2022 permit reissuance.

Comment 15: [Produced Water – Toxicity Retest-Parts I.B.4.b.3 & I.D.3.e] The Joint Trades requested that permittees only be required to pass one retest, instead of three, before returning to regular testing frequency because historically, when a facility has passed the first toxicity test, they have also passed the second and third toxicity tests as well. Performing three consecutive monthly toxicity tests adds no value and becomes redundant.

Response: The EPA does not agree that performing consecutive monthly toxicity retests adds no value and becomes redundant. Operators are required to perform toxicity retests because they fail their regularly scheduled test. To pass one retest may or may not demonstrate that the operator has regained and can maintain proper control of the system. Therefore, passing consecutive

retests is necessary to ensure the system operates properly. The EPA has applied the “three consecutive passes” policy in the Region 6 Texas Territorial Seas General Permit (TXG260000) and Region 4’s Eastern Gulf of Mexico Outer Continental Shelf General Permit (GEG460000).

Comment 16: [Produced Water – Oil Sheen-Part I.B.4.b.4] The Joint Trades requested changing the proposed permit language at Part I.B.4.b.4: “...The operator shall report “sheen” whenever a sheen is observed during the day and must conduct an inspection of treatment process and investigation of the cause of sheen. The operator must keep records of findings and make the records available for inspector’s review.” to read “...If a sheen is observed in the course of required daily monitoring, or at any other time, the Operator must record the sheen and assess the cause of sheen. The operator must keep records of sheens and findings and make the records available for inspector’s review.” Operators are required to keep adequate records to assure proper reporting of produced water sheens under the permit per Part II.C and II.D. A produced water sheen may be easily attributed to a change in operations (e.g., well management) thus making an inspection of the system unnecessary.

Response: The EPA considers that the Joint Trades suggested language serves the same purpose to ensure proper operation of the facility and prevent further “sheen” problems. EPA has revised the final permit language as suggested.

Comment 17: [Visual Sheen Reporting to NRC-Parts I.B.4.b.4 & I.C.7] The Joint Trade requested deletion of the text from Part I.B.b.4 and Part I.C.7 regarding sheen report to the National Response Center. Additionally, the Joint Trades request deletion of the term “discharges” from the text “A visual observation of a sheen is presumed to be a discharge within the meaning of 33 U.S.C. §§ 1321(a)(2) and (b)(3), and must be reported to the National Response Center (NRC) pursuant to 40 CFR § 110.6” at Part I.B.b.4 and Part I.C.7. The Joint Trades stated that the statements at Part I.B.b.4 and Part I.C.7 are contrary to law. Based on Congressional intent and prior interpretations by the EPA and USCG, it is clear that NPDES discharges are covered by section 402 of the Clean Water Act, and are not subject to reporting under section 311. Therefore, the requirement to report sheens from permitted discharge points to the NRC must be removed from the proposed permit. Reporting of sheens from permitted discharge points is managed through the Discharge Monitoring Reports, and such events will be reported to the EPA as permit excursions/violations. However, sheens from permitted discharge points need not be reported to the NRC.

Response: The final permit does not require produced water sheen to be reported to the NRC. However, because operators have only reported the maximum number of days for the month on the worst case basis under the current reporting requirement, the reporting value does not reflect the total sheen observed days during the reporting quarter. The EPA decides to require “total number of days of sheen observed during the reporting period” to be reported in the final permit.

Comment 18: [Well Treatment, Completion and Workover Fluids – Priority Pollutants-Part I.B.6.a] The Joint Trades requested rewording the proposed sentence at Part I.B.6.a to clarify that the vendor declaration is that no priority pollutants are intentionally added to the materials added downhole as well treatment, completion, or workover fluid (TCW). If priority pollutants were not intentionally added to the formulation of the product, then they are considered to be in there



only in trace quantities. A certification program would be burdensome and unsuitable for 138 priority pollutants and all products used in completion fluids systems. The documentation and the effluent limitation guidelines development document (in tables X-12, X-13, X14) clearly document that the EPA recognized trace amounts of priority pollutants in these fluids above the detection methods. Imposing MDL limits on all 138 priority pollutants will result in significant non-water quality impacts associated with transportation, discharge, disposal, and excess treatment. The method detection limits referenced in Appendix E are achievable for samples in clean water effluents but due to matrix effects may not be applicable to the analyses of products or TCW discharges.

Response: The intent was originally that the material added to the well did not contain priority pollutants and not that operators or manufacturers didn't add priority pollutants to the material. The final permit retains the 2012 permit language.

Comment 19: [TCW – Commingled with Produced Water-Part I.B.6.b] The Joint Trades requested deleting the 7-day toxicity test requirement for produced water when TCW is discharged with the produced water. Toxicity testing for these discharges should be included in the scope of the TCW study.

Response: The EPA agrees not to require additional toxicity testing targeting produced water discharges after application of TCW fluids under routine toxicity testing for produced water because the TCW Study will provide more details on TCW impacts.

Comment 20: [TCW Fluids Characterization Assessment-Part I.B.6.c] The Joint Trades commented that permittees should not be required to report common names or volumes and concentrations of all additives to the TCW fluids, but instead, should only be required to provide the identity, as listed on the applicable SDS (safety data sheet), and nominal concentration of each chemical constituent intentionally added to the well treatment, completion, or workover fluid used. The Joint Trades also suggested submitting the results with DMRs or in alternative format and operators may submit this information marked as “Confidential Business Information”

Response: Although the use of a systems-style disclosure of the chemical composition like that found in an SDS would provide some helpful information, it would not be sufficiently detailed to examine potential environmental impacts of discharges with a high degree of certainty. SDSs provide human exposure information that is helpful in ensuring worker safety; however, they do not provide sufficiently detailed information that would be useful in examining potential impacts to aquatic life. More specific chemical information is needed for that type of evaluation. No changes to the proposed permit were made in response to this comment.

Comment 21: [TCW Fluids Industry-Wide Study-Part I.B.6.b]

1. The Joint Trades requested that “active” be struck from the sentence “That study would, at a minimum, provide a characterization of well treatment, completion, and workover fluids used in a representative number of active wells.” It is unclear what is intended by “active”, and could,

for instance, unintentionally exclude well jobs associated with initial completion and with abandonment. It is enough to simply reference well jobs where TCW fluids will be discharged.

Response: The EPA agrees that the study applies for wells which discharge well treatment, completion, and/or workover fluids. The final permit replaces “active wells” with “wells discharging well treatment, completion, and/or workover fluids”.

2. The Joint Trades requested striking “of varying depths (shallow, medium depth and deep depths)” and replacing simply with “discharging well treatment, completion, and/or workover fluids”. Due to the current level of activity, all wells would probably have to be sampled as the jobs arise to ensure compliance with the study window. In other words, the study participants would not have the luxury per se of picking and choosing well TCW jobs to sample. Therefore, specifying varying depths overly constrains the study from the start. Additionally, it is unclear what EPA means by this term (is it water depth, well depth to reservoir, discharge depth?)

Response: It was the EPA’s intention that operators may do much more in-depth sampling than could be done at every well so that EPA may gather a comprehensive information of TCW fluids. The EPA presumes wells located at different depths may represent different formations. The EPA agrees to delete the “depth” wording from the final permit. However, the Joint Study report needs to analyze and discuss how TCW flow back quantity and quality are affected by formations.

3. The Joint Trades requested changes to the permit language to clarify that a financial commitment to participate in the Industry-Wide Study Alternative satisfies the chronic and acute monitoring requirements and the Well Treatment, Completion, and Workover Reporting Requirements of the permit, and ensure consistency with prior approved industry studies. Further, the Joint Trades requested language to allow the option for new permittees to benefit from the industry-wide study after initiation and completion of the study.

Response: The previous permits’ industry-wide study alternatives did not specify how companies participated. Historically, some companies allocated more resources through staff time while other companies participated strictly through funding. This has been a successful approach that has allowed new permittees to benefit from participation after the study has been initiated. The requested change does not appear needed to continue that option. Such decisions are more appropriately left to the discretion of the companies; therefore, the permit’s language is intended to give the industry flexibility in determining how participation is allocated. As with previous studies, participation in this Industry-Wide Study will satisfy with TCW fluid monitoring requirements.

4. As stated above the Joint Trades requested that TCW toxicity testing be conducted on the total TCW job constituents prepared either by the company performing the job or the toxicity testing laboratory that is representative of all fluids used in the job in lieu of sampling the discharge. The Joint Trades believe that testing the toxicity of the total TCW job constituents would provide EPA with the data needed to assess the toxicity of TCW fluids without the burden of sampling the actual discharge.

Response: The goal of the study is to get better information on the actual discharges. Data on the fluids before use will be good information to have, but it won't help the EPA do future environmental analysis. No change is made in response to this comment.

5. The Joint Trades requested to change the planning time from 6 months to 2 years. The goals and objectives of the proposed TCW characterization are not transparent. To be technically sound, effort should be first focused on a problem formulation phase where diverse set of subject matter experts (SMEs) for various affected organization (e.g., suppliers, operators, Region 6, Region 4, testing laboratories, etc.) come together to clarify the intent, the goals and the objectives of such a study. This should be followed by a data gap analysis and information gathering phase. The working group could then reconvene and consider the findings, identify and resolve how to address the difficult aspects of the study and agree upon how to address the "simpler aspects of the study". After taking time to consider how to tackle the difficult tasks another meeting could then be convened to reach general agreement on a path forward with the difficult aspects. Though three meetings have been identified, quite possibly more will be needed. Once the problem formulation phase is completed then 6 months for plan development seems reasonable.

Response: The EPA agrees that more time than 6 months is needed to adequately develop the industry-wide study plan given the number of companies and facilities that may potentially be participating in the Study. However, an allowance of 2 years to develop a study plan will not provide sufficient time to complete the study and make information available for use in developing the next permit reissuance. To accommodate concerns about additional time that may be needed, the permit has been changed to allow 18 months for development of the study plan.

6. Depending on what comes out of the problem formulation phase, a hard date of March 30, 2022, may not be realistically achievable for completion and reporting. The portion of the study that is decided by the SMEs, during the problem formulation phase, as reasonable to achieve by March 30, 2022 should be all that is due and can be written into the plan.

Response: The EPA disagrees. The primary purpose of the Study is to provide current information regarding TCW fluids that can be used to ensure that the permit's limits are sufficient and for development of any additional conditions needed in the next permit reissuance. After further consideration regarding the issues raised and the complexity of the study, the deadline for the report has been extended to be as late as possible. Submittal of the report by October 1, 2021, should allow sufficient time to utilize its results in development of the new permit which must be proposed by March 2022.

Comment 22: [Sanitary Waste – Solid Prohibition-Part I.B.7.a] The Joint Trades requested a change for clarification in the proposed permit language. The organization requested that the phrase: "Observation of floating solids must be recorded whenever floating solids are observed during the day." Be change to state: "If floating solids are observed at other times in addition to the daily monitoring, it must be recorded." for clarification purposes.

Response: The EPA agrees and has made the requested change in the final permit.

Comment 23: [Sanitary Waste Limitations for Facilities Manned by 10 or More-Part I.B.7.b] The Joint Trades requested that the monitoring exception for Marine Sanitary devices (MSDs) that meet the maintenance and operation requirements of the permit be restored. Removal of the exception creates a burden on the regulated community that isn't supported by data showing an environmental impact. The Joint Trades also requested to delete the phrase "and shall be maintained as close to this concentration as possible" from the proposed condition "Discharge of TRC must meet a minimum of 1 mg/l and shall be maintained as close to this concentration as possible..."

For MODUs, the US Coast Guard conducts annual inspections of MSDs in order to issue the MODU a Certificate of Compliance. During this inspection, the Coast Guard confirms that the MSD is properly operational and fully functional. Additionally, an overwhelming majority of MODUs are internationally flagged. As such, their Class Society on behalf of Flag State conducts MSD inspections as a requirement for the International Sewage Pollution Prevention Certificate (ISPPC) pursuant to MARPOL, Annex IV [Regulations for the prevention of pollution by sewage from ships].

The Joint Trades requests that industry be able to demonstrate proper operation and maintenance via maintenance logs/records and any other records of annual inspections by Coast Guard. The monthly TRC requirement increases administrative and financial burden to operators by requiring purchasing additional test kits, training personnel in the use of test kits, and added recordkeeping burden. Additionally, some MODUs have MSDs that do not utilize chlorine as a disinfectant, for example some use bromine biological treatment systems due to reduced usage of chlorine based treatment systems in other parts of the world. The Joint Trades request a similar approach to demonstration of meeting the requirement via US Coast Guard approval, annual inspections, Class/Flag State inspections and/or the ISPPC and maintenance logs/records.

Response: The EPA agrees to retain the MSD exception from the 2012 permit in the final permit and requires the operator to demonstrate proper operation of MSD via US Coast Guard approval, annual inspections, Class/Flag State inspections and/or the ISPPC and maintenance logs/records. However, the proposed statement of "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) and cannot be removed from the final permit.

Comment 24: [Sanitary Waste Limitations for Facilities Manned by 9 or Fewer] The Joint Trades requested that the exception for MSD monitoring be added back to the permit.

Response: See the EPA's response to Comment 23.

Comment 25: [Domestic Waste Monitoring] The Joint Trades requested a modification in the proposed conditions for floating solids to read as: "Solids. No floating solids may be discharged to the receiving waters. Observation must be made daily during daylight in the vicinity of domestic waste outfalls. If floating solids are observed at other times in addition to the daily

monitoring, it must be recorded. The number of days solids are observed must be reported.” for clarification purposes.

Response: The EPA agrees. See the EPA’s response to Comment 22.

Comment 26: [Miscellaneous Discharges-Part I.B.10(i)] The Joint Trades requested that discharges of cement used for testing be authorized by deleting the permit’s statement: [Note: Discharges of cement slurry used for testing cement handling equipment are not authorized.]

Response: The EPA believes that operators may choose to perform commissioning tests at an onshore location, instead of at offshore, and many operators have chosen this approach already, so the final permit does not authorize discharges for equipment testing purposes. No change to the final permit is made in response to this comment.

Comment 27: [Miscellaneous Discharges – Blowout Preventer Control Fluids-Part I.B.10(iv)] The Joint Trades requested that Blowout Preventer Control Fluid discharges not be confined to only the “subsea discharges” re-categorized portion of miscellaneous discharges. The Joint Trades requested that Blowout Preventer be categorized as a separate category. The organization stated that the change would provide clarity because Blowout Preventer Control Fluid which is normally discharged subsea can also be discharged at the surface when operations are conducted such as required function tests.

Response: The EPA agrees. The changes were made as requested.

Comment 28: [Miscellaneous Discharges-Part I.B.10] The Joint Trades requested that the proposed language in Part 1.B.10 “Note 2: Operators must flush and capture the chemicals (e.g., hydrate control fluids or pipeline brine) contained in pipelines, umbilical, or jumpers before or at the time of abandonment” be deleted from the text. The OOC has made toxicity data and information regarding hydrate inhibitor available for the EPA review and the EPA determined that the hydrate control fluid permit limitations in place in the current permit are appropriate for these types of operations. Discharges of hydrate control fluids (ethylene glycol and methanol) or chemically treated seawater occur during pipeline, umbilical, and jumper decommissioning and installation processes and are covered under the NPDES permit as miscellaneous discharges of hydrate control fluids or chemically treated seawater miscellaneous discharges. Such discharges must comply with the applicable permit limits. After a pipeline or umbilical has been abandoned in place, any leak or spill of hydrate control fluid from that pipeline or umbilical would not be covered under the NPDES permit as stated under Part II Section B.7 “This general permit does not authorize discharges, including spills or leaks, caused by failures of equipment, blowout, damage of facility, or any form of unexpected discharge.” The Joint Trades do not feel any changes to the current permit are necessary to address discharges of hydrate control fluids or chemically treated miscellaneous discharges that occur during pipeline, umbilical, and jumper decommissioning and installation processes.

Response: Upon reconsideration of this issue, the EPA has concluded that because operators are already required to comply with discharge limitations for hydrate control fluids and for pipeline brine for such discharges, which the EPA has determined to be protective of aquatic life,

requiring the operator to capture those fluids is not necessary. The EPA agrees to remove the requirement from the final permit.

Comment 29: [Miscellaneous Discharges-Part I.B.10] The Joint Trades requested an addition to the list of miscellaneous discharges of: “Small quantity discharges not addressed elsewhere in this permit, may be discharged after a notification to the EPA that includes the following: 1) Proposed date(s) of activity; 2) Description of activity (e.g., connection of flowline to structure); 3) Expected materials and quantities to be discharged; and 4) Description of potential impacts on the environment.” The groups added that there are activities that might result in a small quantity discharges that are hard to estimate and small, but the permit doesn’t include a method to report or address these discharges. Potential activities included but are not limited to:

- 1) Application of materials subsea that might migrate into the receiving waters (e.g., connector fluid/gel to ensure proper connections to minimize possible discharge of operational or production fluids).
- 2) Non-oil materials that migrate from a line when being connected to another part of the structure. An example is connecting a (preserved) flowline to a tree. And,
- 3) The removal of a cap may result in the inadvertent mixing of contents of the wet-parked line with the ambient water of the receiving water.

Response: The EPA must analyze any new discharge that would be authorized and ensure that the discharge would not result in unreasonable degradation of the marine environment. The Agency would also need to ensure that the permit contained appropriate limits based on Best Available Technology Economically Achievable. The Joint Trades did not provide sufficient information on the nature, volume, and quality of the requested discharges that would be needed to make informed decisions on what permit limits would be appropriate. The EPA will consider the request if more information becomes available for consideration in future permitting actions. In addition, this new class of discharges was not available for public comment when the permit was proposed, potentially requiring re-proposal of the permit to accommodate the request. No changes to the permit were made in response to this comment.

Comment 30: [Unused Cement-Part I.B.10.a] The Joint Trades support the addition of unused cement slurry as a new discharge under Miscellaneous Discharges: “Unused Cement Slurry”. The Joint Trades proposed that the definition below be added to Part II.G. The addition of these discharges is critical to mitigating well control issues if the cement system cannot be returned to service quickly. “Unused cement slurry- cement slurry used for testing of equipment or resulting from cement specification changes or equipment failure during the cementing job.” The Joint Trades also requested to remove the proposed allowable discharge frequency to once per calendar, per facility, or per well.

Response: The EPA added the definition of unused cement slurry. The final permit language accommodates the need for operators’ quick responses while doing a cement job and finding the need to complete the job properly to prevent incidents such as a well blowout outweighs the potential impacts of allowing such discharges. The final permit will retain the frequency limit to assure the discharges would truly be more in the nature of a response to an emergency and not a normal business practice for the convenience of the operator. Given the infrequency of the times excess cement would have to be sent ashore, the EPA is not convinced this requirement imposes

an undue burden nor significantly increases any safety issues compared to normal offshore day to day operations. Also see response to Comment 26 above.

Comment 31: [Chemically Treated Miscellaneous Discharges-Part I.B.11] The Joint Trades requested that a change be made to the Title and list for “Miscellaneous Discharges of Seawater and Freshwater which have been chemically treated”. This will be a word change from “Seawater” and “Freshwater” to “Water”. This change will ensure that both “Seawater” and “Freshwater” are included in the chemically treated discharge list.

Response: The EPA agrees to change the terms “seawater” and “freshwater” to “water” and add a note “Water includes both seawater and freshwater discharges”. Because chemically treated miscellaneous discharges may be subject to different critical dilutions established for seawater or freshwater, a salinity threshold of 2 g/kg was added to use in determining which critical dilution table is applicable. in Appendix D of the permit. 2 g/kg was chosen as the salinity threshold because both Texas and Louisiana use the same criteria for the marine toxicity test.

Comment 32: [Chemically Treated Miscellaneous Discharge Limitations-Part I.B.11.a] The Joint Trades requested the addition of a note to provide clarification that the chemical concentration limits are based on each constituent that make up the treatment chemical in the discharge. Additionally, the Joint Trades requested that the EPA provide clarification on chemical degradation prior to discharge. The organizations asked chemicals that completely degraded prior to discharge should be treated.

Response: The applicable chemical concentration limitation means the weight of chemical or product present in the total volume of fluid. The requirement was originally included in the permit as the technology based limit for chemically treated seawater and freshwater miscellaneous discharges. At the time the limit was developed, the industry provided data that showed treatment chemicals would not be needed in concentrations over 500 mg/l. The industry has not provided information that shows a need to increase the treatment chemical concentration; therefore, no change was made to the permit.

Comment 33: [Chemically Treated Miscellaneous Discharges-Part I.B.11.a] The Joint Trades requested that copper, iron, and aluminum ions are exempted from toxicity testing requirements to account for the fact that electric current is used to generate those ions in addition to active chlorine from seawater. Those systems use sacrificial anodes to generate other anti-biofouling ions (such as, iron, copper and aluminum). The Joint Trades do not expect the discharge will have a toxic impact on the environment as these systems operate in the part per billion concentration range. It is also noted that these systems are in use in the marine industry. Based on review of the manufacturer information, these systems operate with a copper in solution of less than 2 ppb. At less than 2 ppb in solution, a 100% effluent discharge would have a copper concentration that is lower than that of the EPA marine chronic and acute criteria. Further, it should be noted that there are no marine water quality criteria for Aluminum. However, it is expected that the concentration of aluminum in solution will be less than the copper concentration, based on manufacturer information.

Response: Based on information provided by the Joint Trades, the EPA agrees that electrically generated forms of chlorine, hypochlorite, copper ions, iron ions, and aluminum ions will only contribute very low concentrations of ions that are not likely to impact the marine environment. The waiver from toxicity testing was included as requested.

Comment 34: [Chemically Treated Miscellaneous Discharge – Total Volume Monitoring-Part I.B.11.b] The Joint Trades requested that the proposed change to the chemically treated seawater and freshwater volume reporting requirements not be incorporated into the reissued permit. The Joint Trades further requested clarification on the reason for the change of Chemically Treated seawater and freshwater volume reporting from highest “Monthly Average per monitoring period” (quarter) to “Total volume per quarter” when all other permit requirements for chemically treated volume (i.e. frequency and critical dilution) remain and are based on “highest monthly average”.

Response: The EPA agrees to retain the current “monthly average volume” for chemically treated miscellaneous discharges reporting requirement in the final permit.

Comment 35: [Cooling Water Intake Structure (CWIS) Information-Part I.B.12.a.1] The Joint Trades requested a change “New fixed facilities must (change “must” to “have”) submit source water baseline biological characterization data, source water physical data, cooling water intake structure data, and velocity information:” to provide consistency with the first sentence found under Part 1.B.12.a and Section VII.E of the proposed Fact Sheet. Part I.B.12.a states “The owner or operator of a new offshore oil and gas extraction facility must retain the following information with the facility and make it available for inspection.”.

Response: The EPA agrees to make such a change. Because the term “new facilities” is defined by the 316(b), Phase III regulations to mean those facilities for which construction was commenced after July 17, 2006. Information on the intake structures of facilities that are currently covered under the permit has previously been submitted. The final permit condition states: “...must have source water physical data, cooling water intake structure data, and velocity information available for inspection”.

Comment 36: [CWIS Velocity Monitoring-Part I.B.12.c] The Joint Trades requested a tiered approach to velocity monitoring versus the current daily monitoring requirement. Namely,

If the Most recent intake flow velocity (ft/s)	Then Monitoring Frequency Should be
<0.300	Quarterly
0.300 – 0.38	Monthly
>0.38	Daily

Velocity monitoring consists of a demonstration requirement based on the facilities’ proposed design and a compliance monitoring requirement that verifies the velocity limitation is being met. There is agreement with the purpose of inspection, but not the frequency. Also, the Joint Trades requested the additional language be included to account for times when replacement parts and equipment cannot be obtained from a manufacturer in a two-week time frame. Sometimes these items are on backorder and require additional time to receive.



Response: The EPA agrees that when a facility is operating at an intake velocity about 25% below the limit, a reduced monitoring frequency should still provide reasonable protections. The final permit includes the tiered approach. However, the EPA does not agree to provide additional time for the replacement of screens. The EPA believes that the operator can plan and schedule in advance for actions such as the replacement of screens to minimize down time.

Comment 37: [CWIS Entrainment Monitoring-Part I.B.12.c.2(ii)] The Joint Trades requested the removal of entrainment monitoring/sampling requirement and the addition of language requiring permittees to submit a SEAMAP data report annually. 40 CFR 125.137.a.3 provides the Director the flexibility to reduce the frequency of monitoring following 24 months of bimonthly monitoring provided that “seasonal variations in species and the numbers of individuals that are impinged or entrained” can be detected. The report on the 24 month industry entrainment study (1) documents that many important Gulf of Mexico species were not detected at all in the regions where new facilities are expected to be installed so that entrainment impacts on these species will be zero; (2) provided documentation on the seasonal dependence of species and number of eggs and larvae available for entrainment, and (3) concludes that anticipated entrainment will have an insignificant impact on fisheries in any season. The Joint Trades believes that the intent of 40 CFR 125.137 has effectively been met and that the requirement for ongoing entrainment monitoring can be removed.

The Joint Trades further stated that the request is based on the results of the recently completed Gulf of Mexico Cooling Water Intake Structure Entrainment Monitoring Study and reinforced by the quarterly entrainment monitoring reports by individual operators (attached as Appendix E of their comments). The industry believes that these results warrant removal of the entrainment monitoring/sampling because (a) the study showed that no meaningful impacts from entrainment are expected; (b) no meaningful impact was found, therefore, the seasonality of the impact is a moot point; (c) the SEAMAP database provides a continually-updated source of information that is functionally equivalent to permit-required monitoring for the purpose of estimating entrainment impacts.

Response: The EPA has modified the final permit to allow submittal of SEMAP reports in lieu of entrainment monitoring/sampling after the facility completes two years of entrainment monitoring/sampling. A statement: “[Exception] The permittees who completed or participated in the previous “Gulf of Mexico Cooling Water Intake Structure Entrainment Monitoring Study” or have performed entrainment monitoring for two years, may submit Southeast Area Monitoring and Assessment Program (SEAMAP) data, instead.” is included in the final permit.

Comment 38: [Other Discharge Limitations-Part I.C.1] The Joint Trades requested the deletion of “or Oil Sheen” from permit Part I, Section C.1. Floating Solids or Visible Foam or Oil Sheen. The deletion is requested for the following reasons: 1) The permit already restricts oil sheens from discharges through the various requirements for no “Free Oil”. 2) Section 311 of the Clean Water Act prohibits the discharge of oil, and 3) Listing “Oil Sheen in the title of this part leads to confusion on the intent of the part. The Joint Trades believe it was not the intent to allow the discharge of “trace amounts” of oil and/or oil sheen.

Response: Comment noted. “or Oil Sheen” is deleted from the final permit as requested: because free oil was not addressed in the content of this section.

Comment 39: [Other Discharge Limitations – Dispersant, Emulsion and Detergent-Parts I.C.3 & I.B.4.a] The Joint Trades requested that the EPA add the phrase “when used for purposes that could circumvent the intent of the permit’s produced water sheen monitoring requirements” to the end of the sentence “The addition of dispersants or emulsifiers to produced water discharges is prohibited.” The Joint Trades agreed with the comments in VII.J on pages 26 and 27 of the fact sheet that surfactants should not be added to the produced water discharge to prevent detection of a sheen on the receiving water and circumvent the permit’s produced water sheen monitoring requirements. However, the Joint Trades are concerned that the proposed changes to the permit language regarding the discharge of dispersants, surfactants, and detergents may have unintended prohibitions on the use of surfactants (detergents, dispersants) in the context of the use of surface active substances in the formulation of chemicals used in the offshore oil and gas industry to impart specific properties to the formulations (see attached document Surfactants in Oil & Gas Drilling provided as Appendix G and also API’s Offshore Effluent Guidelines Steering Committee paper Chemical Treatments and Usage in Offshore Oil and Gas Production Systems, Hudgins, October 1989)

Response: The EPA agrees to change Part I.B.4.a as requested to read as “The addition of dispersants or emulsifiers downstream of the produced water treatment system is prohibited. The use of dispersants or emulsifiers downstream of the treatment system for the purpose of preventing detection of a sheen is prohibited.” Please be advised, operators are still required to comply with Part I.C.3 regarding additional restrictions for dispersants, surfactants, and detergents.

Comment 40: [Spill Prevention Best Management Practices-Part II.B.7] The Joint Trades requested addition of the following language “If a permittee seeks a conditional exemption to the discharge restrictions of this permit, the permittee must demonstrate to the Regional Administrator the potential environmental impacts and/or benefits of the proposed discharge. Approval from the Regional Administrator must be obtained prior to commencement of such discharge and the Regional Administrator will establish appropriate discharge limitations based upon the evidence provided by the permittee.” in the provision of Spill Prevention Best Management Practices to provide a mechanism for the EPA to approve unique and novel discharges that may not be covered by the existing permit conditions, but may be necessary for a variety of operational reasons. By adding the attached language, a permittee and the EPA can evaluate such situations based on sound science and information. The EPA can then make an appropriate decision after completing a review.

Response: EPA disagrees and declines to add the suggested provision to the permit. Removal of discharge limitations, even if temporary, would require a major modification of the permit, complete with public notice and comment. If alternative discharges are necessary, the operator may apply for an individual permit which may authorize specific discharges on a case-by-case basis. Note that any individual permitting action has to go through all required steps in the NPDES permit issuance process and simply cannot be issued in a short, timeframe such as is

available for discharges authorized by a Federal On Scene Coordinator during emergency response situations.

Comment 41: [Reporting Requirements-Part II.D.4] The Joint Trades requested additional language to 1) provide clarity when the NetDMR system is not available; and 2) provide an official address for submittal of the paper DMRs.

Additionally, the Joint Trades requested a set of instructions for completing DMRs in accordance with the requirements of the permit the effective date of the permit. The instructions should utilize the permit requirements first and provide clarification when there are limitations or input variables with the electronic system and DMRs. The Joint Trades cannot stress the importance that the instructions and DMR be built around the permit requirements and not vice versa. The permit requirements are what an operator is held accountable to and not the limitations and data inputs of the electronic system. These detailed instructions would eliminate multiple DMR errors and create more consistency and should eliminate most of the BSEE inspector's questions and confusion during offshore inspections.

Response: The EPA agrees to add an official mailing address for submittal of paper DMRs to the permit to permit Part II.D.4. Comments regarding DMR instructions are forwarded to the EPA Enforcement staff who manage the DMRs for consideration. See Response 4 regarding temporary NOIs. The EPA agrees that clear instructions for use of the e-NOI and e-DMR systems would be valuable and will work with operators on this issues. Since instructions can necessarily change over time to adopt to issues that arise, instruction are better included either in the NetDMR system or a web page that can easily be updated. Permit language cannot be as readily adopted during the term of the permit, so instructions are not included in the final permit.

Comment 42: [Certification-Part II.D.10.c] The Joint Trades requested the deletion of the sentence "I have no personal knowledge that the information submitted is other than true, accurate, and complete." in the certification statement because it is not consistent with the certification statement found at 40CFR 122.22.d.

Response: Although not required by our regulations, EPA has included this language in NPDES permits since the decision in U.S. v. Robison, 505 F.3d 1208 (11<sup>th</sup> Cir. 2007) (denying conviction for false statement based on certification, despite personal knowledge that information in reports was false). The additional statement has been added to all the EPA issued NPDES permits. The EPA does not believe the addition is conflict with the statement found at 40 CFR 122.22.d.

Comment 43: [Electronic Signature-Part II.D.10.d] The Joint Trades requested that the EPA website <http://www.epa.gov/region6/6en/w/offshore/home.htm> be activated prior to the effective date of the permit and that all applicable instructions be uploaded to it. The EPA website listed is not currently active.

Response: Comment noted. A new website for the Western and Central Gulf of Mexico Offshore Oil & Gas NPDES General Permit at <https://www.epa.gov/npdes-permits/western-and-central-gulf-mexico-offshore-oil-gas-npdes-program> is made available for this purpose.

Comment 44: [Definition of Unused Cement Slurry-Part II.G] The Joint Trades requested adding this definition for “Unused Cement Slurry” as Unused cement slurry- cement slurry used for testing of equipment or resulting from cement specification changes or equipment failure during the cementing job. The rationale for this addition is included in Comment No. 30 for Part I.B.10.a.

Response: EPA has added a definition of “unused cement slurry” to the final permit. See the response to Comment 30.

Comment 45: [Definition of Uncontaminated Freshwater-Part II.G] The Joint Trades requested adding the addition of “potable water and off-specification potable water” to the definition for “Uncontaminated Freshwater”.

Response: Potable water is added to the definition of uncontaminated freshwater in the final permit as requested.

Comment 46: [Appendix F – Table 1] The Joint Trades requested that once all edits and changes to the permit text language is complete, Table 1, Appendix F requirements should be updated accordingly to match. The Joint Trades would prefer that Table 1 be removed completely from the permit because the EPA has historically stated that the permit text holds precedent over Table 1, and because of potential inconsistencies between the permit language and Table 1.

Response: Comment noted. The EPA will update the Table prior to issuance. The EPA believes Table 1 is useful as a quick reference guide for the permit effluent limitations and monitoring requirements. “For Reference Only” is added to the page and a footnote added that in the event of a discrepancy, the language in the text of the permit is the enforceable condition.

BP Exploration & Production Inc. (BP):

Comment 1: BP supported comments submitted jointly by the Joint Trades and encouraged the EPA to ensure the permit requirements are clear allowing for consistent compliance.

Response: The comment is noted.

International Association of Drilling Contractors (IADC): IADC submitted four comments as below.

Comment 1: [Notice of Intent – Notes 3 and 4]

1. The IADC commented that there may be instances where the vessel is still in the same lease block but farther than 1500 feet from the previous job site, and vice versa – that the vessel may be in a different lease block but actually less than 1500 feet. IADC suggested that the wording be modified as follows: “Note 3: eNOI filed by a drilling vessel is valid for different drilling jobs within the same lease block or 1500 feet from the originally filed location.”

Response: Drilling vessels are required to file an individual eNOI for drilling jobs only if not all discharges associated with the vessel are covered under the eNOI filed by the primary operator. Therefore, when a vessel files an eNOI for itself, the vessel is considered a facility and the location of the facility needs to be identified. While the EPA considers 1500 feet apart may be close enough to be considered as the “same” location, jobs located at different blocks may become an issue because the vessel operator also needs to report the lease block code and designated operator information. After considerations of IADC’s comment, Note 3 was modified to read as follows: “Note 3: An eNOI filed for a drilling vessel is valid for different drilling jobs within the same lease block from the originally filed location if drilling jobs are performed for the same designated operator.” However, ship/vessel operators are still required to update their NOI information for wells, such as the expecting/actual drill/discharge commence date, well locations, and the range of depth of water within the operation area or the estimated sea depths at wells.

2. The IADC stated that the use of the word “stands” in Note 4 may result in confusion depending on its interpreted definition. The IADC requested that the note be modified as follows: “Note 4: While a drilling vessel is located in the permit area between drilling jobs, it may file an eNOI for coverage.”

Response: The EPA agrees with the suggestion and the change has been made as requested.

Comment 2: [Sanitary Waste Monitoring Requirement] The IADC requested that the EPA retain the Exception for Marine Sanitation Device (MSD) monitoring.

Response: The final permit retains the MSD monitoring exclusion from the previous permit. Also see the EPA’s response to the Joint Trades Comment 23.

Comment 3: [Chemically Treated Miscellaneous Discharges] The IADC commented that MODUs utilize marine growth prevention systems that serve to prevent bio-fouling organisms from taking over hulls, ballasts, fire control, fire protection, piping and equipment whilst simultaneously preventing corrosion in the aforementioned via the utilization of anodic/cathodic protection (also known as Impressed Current Cathodic Protection (ICCP)). This is necessary for the continued safe operation of a vessel. The organization added that the concentration of ion discharges, particularly copper and aluminum during the electrochemical process of anti-corrosion and bio-fouling prevention are significantly less than the EPA’s established National Recommended Water Quality Criteria for Aquatic Life, as described in the EPA documents. The IADC recommended that the EPA exempt ICCPs and similar systems that prevent bio-fouling and corrosion from periodic toxicity testing, monitoring and reporting (including in DMRs). Rather, they recommended that the EPA request a one-time submittal for Marine Growth protection/Cathodic-Anodic systems to show that the discharge of ions meets the toxic monitoring limits established in the EPA’s Water Quality Criteria for Aquatic Life and ensure proper maintenance of these systems.

Response: Toxicity test exemption is included in the final permit for discharges from ICCPs or similar systems. See EPA’s response to the Joint Trades Comment 33.

Comment 4: [CWIS Reporting Requirements] IADC requested that the section on “Reporting Requirements for the Cooling Water Intake Structure” (Section I.B.12.d.) be modified to clarify that the yearly status report replaces the DMR reporting requirement. IADC also requested that the EPA change the DMR reporting schedules from quarterly to 6-months because the monitoring requirements for visual or remote inspections are up to every 6 months.

Response: For clarity purposes, the EPA has deleted the option that allows an operator provide the annual status report in the NetDMR Comment Box. Therefore, operators must submit their annual status reports separately from DMRs. There is no need to change the DMR reporting schedules just to fit the 6-month visual or remote inspection frequency because the monitoring of intake velocity is more frequent.

Petroleum Equipment and Services Association (PESA): PESA submitted seven comments as discussed below.

Comment 1: [Drilling Fluid Inventory] The PESA requested that the EPA change the proposed permit language from “The permittee shall maintain a precise chemical inventory of all constituents and their total volume or mass added downhole for each well” to “The permittee shall maintain a precise chemical usage record of all products and their total volume and mass added for each well. Information shall be recorded and retained for the term of the permit” because the drilling fluid chemical inventory for drilling operations is currently maintained using product names and quantities of products added to the drilling fluid. Use of the term "products" will maintain clarity and conformity of the records maintained by the Drilling Fluid Specialist and Service company records provided to the operators for commercial, technical and permit compliance purposes.

Response: The EPA does not agree with the commenter and no change has been made to the final permit. The product name may not provide detailed information to the EPA and drilling operators may use different products which may contain different constituents, volumes or weights of chemicals. It is impossible for the EPA to calculate total volume or mass of each chemical added downhole if operators only report product names, instead of chemical constituents, to the EPA when the EPA needs the ability to manage information from hundreds to thousands of wells each year.

Comment 2: [Deck Drainage] PESA requested clarification that when the EPA uses the term rig floor wash water associated with drilling fluids it also means other wash water associated with drilling fluids and it does not prohibit this discharge when it contains residual amounts of Synthetic based drilling fluid. The no free oil discharge requirement would continue to be the discharge limit for deck drainage.

Response: "Deck Drainage" means any waste resulting from deck washings, spillage, rainwater, and runoff from gutters and drains including drip pans and work areas within facilities subject to this permit. The definition is consistent with the ELG and has not been changed in the final permit. Deck drainage does include wastes resulting from deck washings, spillage, and drain from work area. Minor spillage, such as that mentioned in the comment are addressed under non-aqueous based drilling fluids and cuttings requirements in the permit.

Comment 3: [Priority Pollutants in Well Treatment, Completion and Workover Fluids] PESA requested to maintain the existing language regarding priority pollutants in the permit.

Response: The final permit retains the existing language regarding priority pollutants in the 2012 permit. The proposed requirement for a certification program has been eliminated. Also, see the EPA's response to the Joint Trades Comment 18.

Comment 4: [TCW Characteristic Assessments]

1. PESA requested that the EPA change the proposed assessment information items 9) through 12) to read as

- 9) The function and chemical parameters for all products to the fluids. For example, (corrosion inhibitor, pH 7, flash point > 200F)
- 10) The volume of each product
- 11) Concentration of all products in the well treatment
- 12) Concentration of all products in the completion, or workover fluid

by changing the word "additives" to "products" to maintain consistency with PESA comment numbers 1 and 3. PESA also stated that use of product additions/sales also allows business records to support compliance documentation.

Response: As discussed above, the purpose and goal of this assessment requirement is to identify and quantify chemicals used downhole and discharged to the environment. No change is made. See Response to PESA Comment 1.

2. PESA provided following recommendations regarding the assessment:

- 1) The study design includes a sampling program and appropriate models that distinguish the required elements to evaluate the well treatment, well completion and workover fluids in a manner that recognizes these fluids have different design parameters.
- 2) EPA refines the assessments to recognize the intermittent nature of these discharges and require a once a month while discharging sampling rate.
- 3) EPA continues to focus on end of pipe (WET) test methods and recognize that previous ELG studies have established appropriate and relevant technology based limits. The presumptive use of an off-the-shelf toxicity test designed for produced water may result in inappropriate and potentially counterproductive regulatory controls and technology application. As such, PESA urges EPA to work with industry to develop an objective-based approach to toxicity evaluation that builds on the cooperative approach used during the development of tests for Synthetic based drilling fluid cuttings.
- 4) The study design evaluates the appropriateness of the water quality tests (i.e. chronic tests) to evaluate a technology based limitation for TWC. Use of an acute test such as the 96-hour mysid shrimp test may be more appropriate and relate toxicity information on workover, completion and well treatment fluids to drilling fluids. PESA suggested to allow other appropriate toxicity test, not just the 48-hour acute, be used for toxicity test.

Response: Comments noted. The EPA will consider PESA recommendations when reviewing the Industry-wide Assessment plan. EPA agrees with PESA's suggestion regarding toxicity testing. To allow longer-duration methods to be used for toxicity tests, the permit's language was changed to read: "13) The No Observable Effect Concentration (NOEC) of 48-hour acute Whole Effluent Toxicity (WET) test, or other appropriate toxicity test, for well treatment fluids discharged separately from the produced water discharge."

Comment 5: [TCW Industry-wide Study Alternative] The PESA also developed a broader recommendation to address the issue of developing a test program for well treatment, completion and workover fluids. The PESA suggested that the EPA Region VI require development of appropriate toxicity testing strategies to determine a testing procedure that will address the following objectives for evaluation of these fluids. The options would be to:

- 1) Use EPA protocols already developed for produced water.
- 2) Develop alternative protocols as an individual operator.
- 3) Participate in an Industry Work Group to develop an appropriate method or methods meeting the following approach previously used to develop tests for Synthetic based drilling fluid cuttings.

Design parameters:

- 1) Maximum discriminatory power.
- 2) Maximum repeatability of results.
- 3) Practicality of implementation.
- 4) Ranking of known test substances as expected.
- 5) Ecological relevance.
- 6) Government acceptance of the protocols.

In a similar fashion, the following approach has been applied to the process of using the laboratory tests to qualify technologies for field application:

Development procedures:

- 1) Identify all of the available tests.
- 2) Experimentally modify to optimize the tests to meet the design objectives.
- 3) Conduct screening tests to identify the strengths and weaknesses of the available test methods to meet the design objectives.
- 4) Select a limited number of top contenders and further develop standardized protocols, maximize the positive qualities and minimize the negative qualities of the test.
- 5) Select a top contender and propose the method.
- 6) Validate the test methodology and develop a regulatory limit based on the test.
- 7) Implement the test method in the field and correct any problems that affect the usefulness of the test.

Response: Comments noted. The EPA will consider PESA recommendations when reviewing and considering approval of the Industry-wide Study plan.



Comment 6: [Appendix C – 7.0] PESA agreed with Region VI that the use of an optional calibration curve for NIST 2779 is required because the supply of NIST 1582 is no longer available. Because NIST 2779 has a difference concentration of target aromatic compounds (105 EIP area to the TCB m/z 91 EIP area) compared to NIST 1582, it is necessary to change the spiked concentration in the clean base fluid to generate the same calibration curve. The specific addition to the procedure is listed below. PESA recommended proposed language:

“7.2.1 Crude Oil Reference- NIST 1582 or NIST 2779 Petroleum Crude Oil Standard Reference Material (U.S. Department of Commerce National Institute of Standards and Technology, NIST 2779 Petroleum Crude Oil Standard Reference Material (U.S. Department of Commerce National Institute of Standards and Technology)).

7.2.5 Crude oil/drilling fluid calibration standards -Prepare a 4-point crude oil/drilling fluid calibration at concentrations of 0% (no spike-clean drilling fluid), 0.5%, 1.0%, and 2.0% by volume according to the procedures outlined below using the Reference Crude Oils:

**For NIST 1582**

7.2.5.1a Label 4 vials with the following identification: Vial 1-0%Crude in NAF drilling fluid, Vial 2-0.5%Crude in NAF drilling fluid, Vial 3-1%Crude in NAF drilling fluid, and Vial 4-2%Crude in NAF drilling fluid.

7.2.5.2a Vial 1 will not be spiked with Reference Oil in order to retain a “0%” oil concentration, add 5 mL of clean NAF base fluid only.

7.2.5.3a Weigh 90.5 mg of NIST Crude Oil into Vial 2 and add 5 mL of clean NAF base fluid. This will be the 0.5% Crude equivalent in NAF mud standard.

7.2.5.4a Weigh 181 mg of NIST Crude Oil into Vial 3 and add 5 mL of clean NAF base fluid. This will be the 1.0% Crude equivalent in NAF mud standard.

7.2.5.5a Weigh 362 mg in NIST Crude Oil in Vial 4 and add 5 mL clean NAF base fluid. This will be the 2.0% Crude Equivalent in NAF mud standard.

7.2.5.6a Thoroughly mix the contents of each of the 4 vials by shaking vigorously.

**For NIST 2779**

7.2.5.1b Label 4 vials with the following identification: Vial 1-0%Crude in NAF drilling fluid, Vial 2-0.5%Crude in NAF drilling fluid, Vial 3-1%Crude in NAF drilling fluid, and Vial 4-2%Crude in NAF drilling fluid.

7.2.5.2b Vial 1 will not be spiked with Reference Oil in order to retain a “0%” oil concentration, add 5 mL of clean NAF base fluid only.

7.2.5.3b Weigh 24.4 mg of NIST Crude Oil into Vial 2 and add 5 mL of clean NAF base fluid. This will be the 0.5% Crude equivalent in NAF mud standard.

7.2.5.4b Weigh 48.9 mg of NIST Crude Oil into Vial 3 and add 5 mL of clean NAF base fluid. This will be the 1.0% Crude equivalent in NAF mud standard.

7.2.5.5b Weigh 97.7 mg in NIST Crude Oil in Vial 4 and add 5 mL clean NAF base fluid. This will be the 2.0% Crude Equivalent in NAF mud standard.

7.2.5.6b Thoroughly mix the contents of each of the 4 vials by shaking vigorously.

Response: Comment noted. Suggested procedures are included in the final permit.

Comment 7: [Appendix F – Table 1] PESA commented that once all edits and changes to the permit text language is complete, Table 1, Appendix F requirements should be updated accordingly to match.

Response: Comment noted. Also see the EPA's response to the Joint Trades Comment 46.

Environmental Planning Specialists, Inc. (EPS): The EPS provided a comment on the EPA's proposed condition "Operators must flush and capture the chemicals (e.g., hydrate control fluids or pipeline brine) contained in pipelines, umbilical, or jumpers before or at the time of abandonment." The EPS comments are summarized as below.

Comment 1: [Decommissioning of Subsea Equipment] the EPS stated that GMG290000 can and should address an issue of ever-increasing importance – the decommissioning-in-place of subsea equipment in the Gulf of Mexico that cannot feasibly be fully flushed at the time of abandonment (using best practical flushing efforts), and where removal of such equipment may lead to greater ecological impacts and health and safety risks compared to decommissioning-in-place. An ever-growing body of science indicates that subsea offshore oil and gas structures and infrastructure are relied upon by a wide variety of marine life for habitat services, increasing the diversity and density of biomass where they exist. These ecosystem services in turn support a variety of human uses such as commercial and recreational fishing, diving, etc. Recent studies have shown that offshore oil and gas structures and infrastructure produce fish at a rate that exceeds even the most productive marine habitats. Larger marine species may utilize offshore oil and gas structures and infrastructure as shelter or resting areas and/or actively hunt for prey that are associated with other subsea components. There is now growing evidence to indicate that offshore structures actually operate as centers of fish production, "new biomass" is generated at these sites and population sizes are enhanced by the presence of these structures. Additionally, sea floor structures may act as important de facto artificial reefs for some individuals in an otherwise seemingly barren benthic seascape. Thus, removal of subsea infrastructure has a three-fold impact on marine ecosystem services: (i) the loss of the benefits of shelter and food for species that have developed in association with the infrastructure; (ii) the loss of the benefits that these species provide to humans; and (iii) the area that has previously had restricted access is suddenly released to external recreational and commercial pressures. The hard structure benefits to marine communities during the operating life of the infrastructure are immediately lost once the infrastructure is removed, and are lost in perpetuity. These adverse ecosystem service impacts associated with the removal of subsea equipment are additional to the suite of others risks and costs associated with removal of any subsea infrastructure, including implementation risks (health and safety), climate risks (greenhouse gas emissions associated with removal and scrapping/recycling) and cost.

Response: The EPA's permit does not regulate decommissioning of pipelines or equipment, only the discharge of pollutants associated with such activities. BOEM and BSEE regulate placement and decommissioning of structures and supporting infrastructure related to oil and gas exploration in federal waters of the Gulf of Mexico.

Comment 2: EPS suggested the following permit condition to address the proposed requirement that requires operators to flush and capture the chemicals contained in pipelines or equipment prior to abandonment.

“If chemicals cannot feasibly be fully flushed at the time of abandonment using best practical flushing/recovery efforts, and therefore there is a non-zero risk of potential discharge after abandonment/decommissioning, such potential discharges are permitted if either (1) the chemicals have been shown to otherwise meet the permit conditions and Limitations in this Section or (2) a quantitative comparative analysis of the ecological impacts and health and safety risks associated with the decommissioned-in-place scenario versus the ecological impacts and health and safety risks of removal (including discharge risks associated with removal) demonstrates that the decommissioned-in-place scenario results in the least overall ecological impacts and health and safety risks (e.g., considering chemical releases to ecological resources, release risks to on-vessel and onshore workers, collateral risks to other equipment, etc.). The quantitative comparative analysis should specifically predict the potential impacts to ecosystem services from the decommissioned-in-place versus removal scenarios, including predictions of the chemical toxicity of the potential discharge scenarios using CORMIX or other dispersion modelling. The dispersion modelling portion of the analysis should include the projected discharge rates, the toxicity of the chemicals, predicted exposure times, and plume water volumes affected.”

Response: The EPA has deleted the proposed “flush and capture” condition from the final permit. Also see EPA’s response to the Joint Trades Comment 28.

Note: The EPS also identified a few typographic errors in the proposed permit and the EPA has corrected those errors in the final permit.

Element-Lafayette (Element): Element submitted four comments regarding analytical methods.

Comments 1: Element requested that the EPA add the test method in the monitoring requirements for formation fluid contamination for non-aqueous based drilling fluids.

Response: The method listed in the ELG was added as requested.

Comment 2: Element noted that the permit language for the formation oil contamination test lists a reference crude oil for test calibration that is no longer available. Element requested that the reference fluid be updated.

Response: The change was made as requested. The new reference fluid for test calibration is representative of oil found in the Gulf of Mexico.

Comment 3: Element noted a typographic error where the permit lists the standard reference crude oil as a test method.

Response: The error was corrected as requested.

Comment 4: Element noted that the permit lists EPA method 1654 as the approved test methods for polynuclear aromatic hydrocarbon monitoring. Element requested that EPA SW 846 Method 8270 be added as an alternative to provide flexibility.

Response: The method listed in the permit (EPA method 1654) is consistent with the requirements of the Effluent Limitations Guideline found at 40 CFR 435.13. The requested change would be inconsistent with those requirements and was not made in the final permit.

The Center for Biological Diversity (CBD) submitted following comments.

Comment 1: The Center for Biological Diversity (CBD) commented that EPA cannot make a valid finding that the permit does not cause an unreasonable degradation of the marine environment. CBD noted that the EPA acknowledges a lack of data on the types and quantities of chemicals used for hydraulic fracturing, yet still allows the discharge of those chemicals under this permit. The CBD cited a California study that found inadequate reporting of well stimulation events, composition of the fluids, and toxicity data for the chemicals used; as well as a BOEM study indicating lack of toxicity data and data on chronic impacts associated with most hydraulic fracturing chemicals. The organization concluded that due to these data gaps, and available scientific information showing adverse environmental impacts from these discharges, the EPA cannot make a determination that well treatment fluids discharges would not cause unreasonable degradation of the marine environment, as required by the Ocean Discharge Criteria.

Response: The EPA disagrees with the commenter's assertion that the EPA lacks sufficient data to support its finding that the permit does not cause an unreasonable degradation of the marine environment under CWA section 403(c). First, EPA notes that, with respect to data on the types and quantities of chemicals used, chemical usage in offshore oil and gas extraction, including well treatment fluids, was examined extensively during development of the Effluent Limitations Guidelines (ELGs)<sup>1</sup>. The most recent chemical usage study that was conducted on operations in the Gulf of Mexico<sup>2</sup> did not find evidence that significant changes in chemicals used for offshore oil and gas extraction have occurred since the ELG was issued in 1993. In addition, whole effluent toxicity data submitted by permittees under the current Region 6 offshore GP further indicates that such discharges consistent with the terms of the GP have not had adverse impact on the marine environment. EPA has neither observed nor discovered scientific evidence of "significant adverse changes" in ecosystem diversity, productivity or stability of the biological community as a result of the discharges, no threat to human health through direct exposure to pollutants or consumption of exposed aquatic organisms and, no loss of esthetic, recreational, scientific or economic values which is unreasonable in relation to the benefit derived from the discharge. Therefore, although EPA acknowledges the need for more extensive information

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1 USEPA, Development Document for the Effluent Limitations Guidelines and New Source Performance Standards for the Offshore Subcategory of the Oil and Gas Extraction Point Source Category, Final, Office of Water, EPA 821-R-93-003, January, 1993.

2 U.S. department of Interior Minerals Management Service, Deepwater Program: Literature Review, Environmental Risks of Chemical Products Used in Gulf of Mexico Deepwater Oil and Gas Operations, Volume I: Technical Report, OCS Study, MMS 2001-011, New Orleans, February, 2001.; U.S. department of Interior Minerals Management Service, Deepwater Program: Literature Review, Environmental Risks of Chemical Products Used in Gulf of Mexico Deepwater Oil and Gas Operations, Volume II: Appendices, OCS Study, MMS 2001-012, New Orleans, February, 2001

regarding chemical usage, current available information, including information developed during previous permit terms, is sufficient to support EPA's determination that the discharges authorized in the General Permit will not result in unreasonable degradation of the marine environment.

The well treatment fluid information submittal requirements in this reissued permit are part of a continuing effort to expand the body of knowledge. The EPA Region 6 office has generally included similar monitoring and study requirements in this permit as a part of past reissuances<sup>3</sup>. The resulting studies have produced information helpful in both verifying the effectiveness of the permit's requirements and conducting future environmental analyses. Thus, this information could be used to support future permitting decisions, including whether to add more stringent conditions, if warranted. But, available information at this time does not justify imposing additional or more stringent limits, for the reasons discussed above.

Comment 2: The CBD cited several reports that examine chemical usage in hydraulic fracturing for unconventional oil and gas extraction. Those reports show that some of the chemicals used have human health risks such as being carcinogenic, and are regulated under the Safe Drinking Water Act and Clean Air Act due to such risks. The CBD also cited studies that found groundwater contamination near some onshore wells and potential human health impacts thought to be associated with hydraulic fracturing. The organization stated that a number of chemicals used in hydraulic fracturing can cause health impacts and at least one chemical is listed as hazardous in the Occupational Health and Safety Act and the Comprehensive Environmental Response, Cleanup, and Liability Act. In addition, the CBD cited studies that suggest fluids used for hydraulic fracturing can have toxic effect on aquatic life and stated that chemicals frequently used in the process are among the most toxic in the entire world with respect to aquatic life.

Response: The issues raised by the CBD have been addressed in other venues and appear to be relevant to hydraulic fracturing done in onshore wells, and not to offshore oil and gas. The fact that certain chemicals are regulated under the Safe Drinking Water Act and studies showing groundwater contamination near hydraulic fracturing sites are not relevant in the context of marine discharges, as no freshwater aquifers that could be used for drinking water sources exist in the area covered by this permit. Spills which could result in shallow groundwater contamination near onshore wells would not have impacts to groundwater if they did occur near the offshore wells authorized by this permit. . While the EPA agrees that potentially toxic chemicals are used in offshore oil and gas extraction, no evidence has been found to show that there has been a significant impact to aquatic life when exposed under normal conditions to the concentrations discharged consistent with the permit's terms and conditions. Due to high rates of dilution in the open ocean, exposure to high concentrations of added chemicals are likely to occur only for short durations in the discharge plume in the immediate vicinity of the outfall. EPA finds that exposures to concentrations high enough to

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3 Continental Shelf Associates, Gulf of Mexico Produced Water Bioaccumulation Study, April, 2004; Continental Shelf Associates, Final Gulf of Mexico Comprehensive Synthetic Based Drilling Fluids Monitoring Program, October, 2004; Argonne National Laboratory, Characteristics of Produced Water Discharged to the Gulf of Mexico Hypoxic Zone, August, 2005; Tetra Tech, OOC Produced Water and Water Based Mud Characterization Study, September, 2015.

cause biological effects will be brief and that no significant adverse impacts to marine life will result. Further, EPA notes that comparisons of the large-scale, induced hydraulic fracturing procedures used in onshore and off-shore California oil and gas operations for low-permeability reservoirs with well treatment operations carried out on the OCS in the Gulf are misleading. Typical use of pressurized fluids for well treatment and well stimulation in the GOM are small-scale by comparison and use significantly smaller volumes of fracking fluids and the associated chemicals. In addition, the number of added chemicals is typically much smaller.

Comment 3: The CBD noted that matrix stimulation of wells can use hundreds of thousands of pounds of some chemicals. The organization commented that these operations typically have a low pH that is inconsistent with water quality criteria and maintenance of water quality in light of ocean acidification.

Response: There is no information available showing that these sorts of matrix stimulation discharges tend to be highly acidic or that they contribute to ocean acidification. The reference cited by the CBD discusses chemicals used in matrix stimulation and does not address discharges such as those authorized under this permit<sup>4</sup>. Acids are used in well treatment fluids to react with the formation and clean out the well. They are typically not in as strong concentrations when they return to the surface. Additionally, most well treatment fluids are discharged comingled with produced water from the producing formation and are well buffered. Data have not shown these discharges to be acidic. No new information has been presented by the CBD that support new limits or changes to the permit.

Comment 4: The CBD stated that it is generally good to incentivize the industry-wide study and characterization of the discharge of well treatment chemicals; however, that does not assuage their concerns that the discharges should be prohibited until proven safe. The commenter added that if the discharge of well treatment fluids is continued to be authorized, the EPA should mandate the study in addition to reporting of the type and quantity of chemicals used in each hydraulic fracturing operation.

Response: The EPA agrees that the study is helpful and incentivizing participation will potentially help to provide the best possible information resulting from the study. The EPA disagrees that the discharges should be prohibited, as the EPA has determined, based on available information, that discharges in accordance with the limitations in this permit will not result in unreasonable degradation of the marine environment, as explained in the response to Comment 1. EPA also disagrees with the commenter that the permit should mandate reporting of chemicals used in hydraulic fracturing. Although chemicals usage information is helpful to understanding what constituents may be present, the analysis of discharges will provide information that can be used to more directly analyze potential impacts of actions authorized by this permit. Additional data requirements on chemical usage, beyond those proposed, will not provide better information on the quality of discharges.

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<sup>4</sup> Khadeeja Abdullah, Timothy Malloy, Michael K. Stenstrom, and I.H. Suffet, Toxicity of Acidification Fluids Used in California Oil Exploration, Toxicological & Environmental Chemistry, Vol. 99, Issue 1, 2017.

Comment 5: The CBD commented that numeric limits on toxic chemicals and robust monitoring of well treatment fluids discharges should be required. The organization added that biologically sensitive areas and seasons should be identified and discharge be prohibited in those areas and times. The Beaufort Seas general permit's prohibition of drilling fluid discharges during bowhead whaling activities and near the Boulder Patch were given as examples of precedent for these types of prohibitions.

Response: Conditions cited in the Beaufort Sea general permit are not entirely relevant to this general permit. There is no subsistence whaling in the Gulf of Mexico like that done in the Beaufort Sea. Sensitive conditions inherent in the arctic are also not relevant to discharges authorized under this permit. The general permit currently includes conditions that address sensitive areas that are present in the Gulf of Mexico, such as the Flower Garden Banks National Marine Sanctuary. The permit's conditions are also set up to facilitate any future actions, such as expansion of marine sanctuaries or addition of new Bureau of Ocean Energy Management (BOEM) no activity areas that may arise when new information becomes available. If new information is provided by the CBD or other organizations that show other sensitive areas need additional protection, those will be considered in the future.

Comment 6: The CBD commented that the chemical inventory requirements for well treatment fluids do not prevent such chemicals from being discharged and is an inadequate protection of water quality. The organization added that the permit's statement that well treatment fluids comingled with produced water are limited as produced water make it unclear whether the chemical inventory requirements would apply and the statement appears to undermine the chemical inventory requirements. This permit language fails to add water quality protections and would allow well treatment fluids to flow back with produced water and be diluted by that wastewater.

Response: The EPA agrees that inventory and monitoring requirements in and of themselves do not prevent the discharge of chemicals such as those used in well treatment fluids. See the response to comment number 4 for more information. However, the permit does contain limits that would in fact restrict the discharge of such chemicals. Well treatment fluids are subject to limits for oil and grease and free oil, which would also control the discharge of chemical constituents in such fluids. In addition, when well treatment fluids are comingled with produced water, the resulting discharge is also limited for whole effluent toxicity. Whole effluent toxicity monitoring measures the toxic effects of the mix of all the pollutants. That limit is more appropriate for a discharge like produced water that has pollutants from the producing formation, well treatment, and from the oil/water separation process. Since they control the toxicity of the entire mix of pollutants, toxicity monitoring and limits are a more effective means of protecting aquatic life than chemical specific limits when the effluent is complex and variable in composition, such as produced water. See also the response to comment number 8.

The permit's chemical inventory requirement and industry-wide study option apply to chemicals added to well treatment fluids. Regarding CBD's comment that it is unclear whether these requirements apply to well treatment fluids comingled with produced water, EPA clarifies that

those requirements apply whether the fluids are discharged separately or commingled with produced water.

Comment 7: The CBD stated that the discharge of well treatment fluids, including those commingled with produced water, should be prohibited. The organization added that well treatment fluids contain toxic chemicals that are harmful to aquatic life and water quality. Other issues cited were that the chemicals may cause cancer and damage to the nervous, cardiovascular, and endocrine systems.

Response: The EPA disagrees. The fact that wastewater contains chemicals that can be toxic when present at high concentrations is not sufficient reason to prohibit the discharge. The concentration of pollutants present in the actual discharge is important to consider. Chemicals contained in well treatment fluids and produced water discharges have not been found to be present in sufficiently high concentration to significantly impact aquatic life. No evidence has been found that discharges have caused or are likely to cause impacts that would justify their prohibition.

Comment 8: The CBD noted that the permit's prohibition on the discharge of well treatment fluids that contain priority pollutants except in trace amounts does not apply when the fluids are discharged commingled with the produced water waste stream. The commenter also stated that chemicals used offshore frequently are not listed as priority pollutants and thus can be discharged in unlimited amounts in well treatment fluids.

Response: The CBD is correct in their understanding that when well treatment fluids are discharged with produced water only the limitations that apply to produced water would be applicable. Although the priority pollutants prohibition would not apply, the added limit of whole effluent toxicity would apply to comingled produced water and well treatment fluid discharges. The final development Document for the ELG<sup>5</sup> stated that oil and grease was considered both a conventional pollutant and an indicator for toxic pollutants. Thus, toxic pollutants that would be reduced through the well treatment fluid priority pollutants prohibition were also found to be controlled by the produced water oil and grease limit. Studies, such as the produced water bioaccumulation study, have not found other contaminants that warranted additional controls of pollutants in produced water.

Comment 9: EPA's records indicate that 75 billion gallons of produced water were discharged under this permit in 2014; however, the Agency has not meaningfully analyzed the volume of produced water that is authorized to be discharged under the permit even though the discharge may be increasing due to hydraulic fracturing. Due to the complex pollutant mix including benzene, arsenic, lead, hexavalent chromium, chlorides, radionuclides, and others contained in produced water, the discharges are incompatible with Ocean Discharge Criteria.

Response: In conventional oil and gas wells, such as those in the Gulf of Mexico Outer Continental Shelf (OCS), the volume of water produced tends to increase over time as more oil and gas have been removed from the well. Hydraulic fracturing has little influence over that

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<sup>5</sup> See footnote 1 on page 1.



trend. As stated previously in this response to comments document, the potential impacts from oil and gas extraction in the Gulf of Mexico has been studied at length. Studies conducted both under this permit and in other venues have not found a significant impact. The permit's oil and grease and toxicity limits also are intended to ensure that discharges do not cause unreasonable degradation, as required by the Ocean Discharge Criteria. Based on available information relevant to the Gulf of Mexico, the EPA has determined that the permit's limits and conditions are sufficiently protective to prevent unreasonable degradation. The agency has required additional information under this permit in order to expand the amount of available information for consideration in future permits

The produced water toxicity limits were added to the permit in 1992, to ensure that the mix of pollutants discharged does not impact aquatic life. Fish tissue monitoring was also added to the permit at that time to gather data for use in determining whether additional permit conditions were warranted. That information did not show that additional limits or monitoring were needed to ensure that the discharges authorized by the permit did not cause unreasonable degradation of the marine environment.

Comment 10: The CBD noted that produced water contains chemical compounds such as dispersed oils, aromatic phenols, alkylphenols, heavy metals and biocides that are toxic to aquatic life. The organization added that chemical compounds in produced water are known to have negative biological effects, including: DNA damage, cardiac function defects, embryotoxicity, neoplasia of fish liver, and deformities.

Response: The EPA agrees that the chemical compounds in produced water could have negative impacts to aquatic life when present at sufficiently high concentrations. However, the permit's limits and conditions prevent those impacts. The produced water oil and grease limits and sheen monitoring requirements ensure that the effluent is sufficiently treated to remove toxic pollutants associated with oil and grease. The sheen monitoring requirements have been found to be an effective tool for managing oil/water separator performance. In addition, the whole effluent toxicity limits ensure that the mix of all pollutants in produced water discharges is not toxic to aquatic life. The studies that have been conducted under the permit have also provided information that assisted the agency in verifying that the permit conditions are sufficiently protective to ensure no unreasonable degradation to the marine environment.

Comment 11: The commenter stated that the existing permit's reliance on oil and water separation technology for treating produced water does not prevent undue degradation of the marine environment because that technology does not remove hydraulic fracturing chemicals from the discharge and does not prevent fluids from being discharged.

Response: The EPA's goal in issuing this permit has never been to prevent fluids from being discharged. Instead, the permit contains conditions that control the discharge of pollutants in authorized discharges and is consistent with the requirements of the Clean Water Act. The permit contains technology based limits consistent with the effluent limitations guidelines established for this industrial category, which require oil/water separation technology as the appropriate treatment for removal of conventional and toxic pollutants from produced water.

The permit contains additional water quality based limits to ensure no unreasonable degradation of the marine environment, as required by the Ocean Discharge Criteria. Available studies of produced water discharges in the Gulf of Mexico have not found degradation; therefore, no additional monitoring or limits have been added to the permit based on the CBD's comment.

Comment 12: The CBD stated that due to their attraction to structures such as oil and gas facilities, fish may suffer the highest impacts to exposure to produced water. Several studies were cited that describe impacts to haddock in areas with extensive oil and gas production in the North Sea and to cod exposed to varying concentrations of produced water. The organization also stated that chronic exposure to produced water even at low concentrations can exhibit negative effects in both vertebrates and invertebrates.

Response: While oil and gas platforms are well known habitats for aquatic life in the Gulf of Mexico, produced water plumes tend to be localized and disperse quickly. The currents in the Gulf of Mexico also carry the plume away from the platform. Due to these factors and avoidance tendencies exhibited by fish, adverse effects of produced water discharge have not been found in the aquatic communities found at offshore platforms covered under this permit. EPA also notes that the distribution of Atlantic cod and haddock does not extend to the Gulf of Mexico.

Comment 13: The CBD noted processes affecting produced water in the marine environments that they claim may produce new chemical compounds that are more bioavailable and toxic to marine life than the chemicals found in produced water prior to discharge.

Response: No evidence was submitted by the CBD that supported the claim that new chemicals are produced in the environment that are more harmful to aquatic life. As noted above in response to Comment 1, EPA is not aware of any studies available for the Gulf of Mexico that have shown this to be an issue. If CBD or others submit studies pertinent to the Gulf of Mexico in the future, that information will be taken into account in determinations of whether new permit conditions are warranted.

Comment 14: The CBD commented that habitat degradation due to produced water discharges is high near outfalls. The organization attributed that affect to the concentrations of some metals that are greater than found in ambient seawater and their tendency to rapidly precipitate. Studies cited suggested that Norwegian produced water discharges were found to have greater impacts within 1 to 2 km of discharges and that benthic communities took 5 to 10 years to recover.

Response: Studies conducted in the Gulf of Mexico have not documented habitat degradation that the CBD suggests has occurred in Norwegian waters. The studies cited do not appear to be representative of the environment in the Gulf of Mexico. Additionally, no information is available supporting the claim that metals rapidly precipitate from produced water plumes and settle on the seafloor nearby in significant concentrations. Studies conducted in shallow coastal and estuarine waters of the Gulf coast found little enrichment of sediments with metals near

produced water discharges.<sup>6</sup> Modeling and other efforts previously done in support of this permit have shown that produced water plumes tend to become entrained in the water column and are greatly dispersed within the mixing zone.

Comment 15: The CBD summarized ambient conditions that impact plume dynamics and mixing of produced water discharges and the variability of pollutant concentrations in the plume. The organization noted that dilution tends to decrease during periods of slack currents and buoyant plumes can result in a 1 to 2-meter thick layer on the surface of the receiving water. However, organisms closest to the discharge point are likely to be exposed to the highest concentration of pollutants in the plume. CBD further commented that studies currently do not have the required sensitivity to detect impacts of produced water discharges at low concentrations. Due to the variabilities exhibited by produced water discharges and unknowns regarding impacts of those discharges CBD stated that the EPA cannot make a determination that there is no degradation of the marine environment.

Response: The greatest factor affecting dilution of a produced water discharge is near field turbulent mixing. Effluent that is discharged at a higher velocity tend to exhibit greater turbulent mixing. Other factors cited such as boundary interactions, density differences, and ambient current affect mixing, but to a lesser degree. Produced water discharged in the Gulf of Mexico has a greater density than the ambient receiving water. As such, they tend to sink in the water column rather than rise to the surface and forming a layer as suggested in the comment. The information cited in the comment appears to be from literature that discusses produced water plume characteristics from wells located in Indonesian waters<sup>7</sup>. Past examinations of plume dynamic in the Gulf of Mexico have shown that produced water becomes highly diluted within the mixing zone prescribed by Ocean Discharge Criteria. Although organisms closest to the discharge point would tend to have the potential to be exposed to pollutants in greater concentrations than organisms farther away, detailed studies, such as the Produced Water Bioaccumulation Industry-Wide Study<sup>8</sup> did not find significant differences compared to organisms near non-discharging platforms.

Comment 16: The CBD commented that the produced water toxicity limits are ineffective at preventing undue degradation because they are based on an arbitrary 100-meter mixing zone; the limits do not account for impacts inside the mixing zones or overlapping mixing zones; the testing is not frequent enough or required for all discharge events; and is not required at the same as a hydraulic fracturing event. The commenter suggested that the toxicity limit should be met at the point of discharge without allowance for dilution.

Response: The mixing zone used to derive the produced water toxicity limits is based on the Ocean Discharge Criteria (see 40 CFR 125.123). That mixing zone has been consistently used in

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6 Neff, Jerry M. Ph.D., *Bioaccumulation in Marine Organisms, Effect of Contaminants from Produced Water*, Battel Coastal Resources and Environmental Management, Duxbury, MA, 2002

7 Neff, Jerry M., Ph.D., Lee, Kenneth, and Deblois, Elisabeth M., *Overview of Composition, Fates, and Effects*, pp. 3-54, *Produced Water Environmental Risks and Advances in Mitigation Technologies*, Springer, 2011

8 Continental Shelf Associates, *Gulf of Mexico Produced Water Bioaccumulation Study*, Prepared for the Offshore Operators Committee, April, 2004.

the Gulf of Mexico since produced water toxicity limits were first implemented under this permit in 1992.

The EPA does have some discretion with regard to the size of mixing zones used in NPDES permits, however, the EPA does not agree that the use of a 100-meter mixing zone to determine toxicity is arbitrary. Nor does EPA agree that a more restrictive mixing zone is necessary at this time. The concept for the 100 m mixing zone comes from 40 CFR Section 125 Ocean Discharge Criteria: “§125.121 (c) Mixing zone means the zone extending from the sea's surface to seabed and extending laterally to a distance of 100 meters in all directions from the discharge point(s) or to the boundary of the zone of initial dilution as calculated by a plume model approved by the director, whichever is greater, unless the director determines that the more restrictive mixing zone or another definition of the mixing zone is more appropriate for a specific discharge.” At present, the EPA does not have information that would justify a change in the size of the mixing zone prescribed in the proposed NPDES GP. The EPA will use the data acquired through the WET testing requirement for well treatment fluid discharges to determine whether a more restrictive mixing zone may be required.

Comment 17: The CBD commented that the permit should prohibit the discharge of drilling fluids, drill cutting, well treatment fluids and produced water due to the gaps in data on their effects and available information that indicates these discharge degrade the ocean environment. The organization cited the importance and sensitivity of the Gulf of Mexico environment and the presence of threatened and endangered species and marine mammals as reasons supporting the prohibition of discharge.

Response: Numerous studies have been conducted in the Gulf of Mexico in an attempt to understand any potential impacts from the oil and gas industry. Those studies did not find degradation resulting from discharges associated with oil and gas extraction. Given that body of knowledge, there does not appear to be a significant data gap that would support prohibiting discharges currently authorized under the general permit.

Comment 18: The CBD stated that the availability of other disposal technologies and the fact that zero discharge has been required in other areas, such as the Beaufort Sea and in Coastal waters, supports their request that the permit prohibit discharges of drilling fluids, drill cuttings, well treatment fluids, and produced water. The CBD added that, if the EPA does not prohibit those discharges as a technology based limitation, best management practices should be implemented to address developments where the ELG has not kept pace.

Response: EPA recognizes that certain oil and gas permits have included zero discharge requirements for certain wastestreams; however, these requirements are neither applicable nor appropriate with respect to this permit. First, the EPA notes that the Beaufort Sea general permit authorizes discharges only from exploratory facilities, which are not associated with a produced water wastestream. Therefore, although, as CBD points out, the Beaufort Sea GP includes zero discharge requirements for produced water, this restriction is not particularly relevant with respect to this permit, which covers production facilities, which do in fact generate produce water. Moreover, the Beaufort Sea GP does in fact authorize the discharge of wastestreams that

are normally related to exploratory drilling, , such as drilling fluids and drill cuttings. . The record for the Beaufort Seas general permit does not contain a detailed explanation for why the permit does not authorize the discharge of drill cuttings produced using synthetic based drilling fluids. Synthetic based drilling fluids have been found to be an environmentally beneficial alternative to water based fluids. Synthetic based fluids tend to erode the wall of the well less than water based fluids and thus decrease cuttings generated and discharged. In addition, this general permit limits the amount of synthetic based fluids that adhere to discharged cuttings and includes additional controls on the toxicity and biodegradation rate of synthetic based fluids that are not included in the Beaufort Seas permit. With respect to CBD's comments regarding coastal offshore drilling operations, EPA notes that these permits are based on a different effluent limitation guideline that applies to Coastal, not Offshore, operations. The Coastal Subcategory ELG (40 CFR Part 435, Subpart C) established technology based limitations that prohibit most discharges to coastal waters and only applies to wells that are located in coastal waters. The Western Gulf of Mexico Outer Continental Shelf general permit covers Offshore Subcategory facilities engaged in exploratory and development drilling in addition to production activities and does not require zero discharge. EPA further notes that, as discussed in Comment Response 1 above, zero discharge is not necessary to prevent unreasonable degradation to the marine environment, per CWA 403(c). Finally, with respect to CBD's comment that EPA should require zero discharge as a BMP pursuant to 40 CFR 122.44(k), EPA notes that, while that regulation authorizes the use of supplemental BMPs where necessary to carry out the purposes of the Act, EPA disagrees that additional BMPs are necessary or appropriate at this time, for the reasons discussed above. No changes to the technology based limits have been made in response to this comment.

Comment 19: The CBD also requested that as an alternative to prohibition of discharges, the permit should include limits on the volume of produced water discharged and enhanced monitoring. The organization added that if well treatment fluids are still authorized to be discharged and comingled with produced water, the permit should include a limit of no detect for priority pollutants and chemicals classified as hazardous. As additional reasoning for a volume limit for produced water discharges, the CBD noted that those discharges degrade the environment and are introducing toxins. Also, the amount of produced water currently discharged in the Gulf is harmful and could increase with new leases and changes in drilling and well stimulation technologies. As precedent for adding a volume limit on discharges, the CBD cited limits in EPA Region 9's Pacific OCS general permit.

Response: EPA disagrees that limits on the volume of produced water are necessary to prevent unreasonable degradation of the marine environment. See Response to Comment 1 (explaining basis for finding of no unreasonable degradation). EPA further notes that tThe CBD did not provide any data or information to show that the current volume of produced water discharged in the Gulf of Mexico is resulting in adverse environmental impact, or specify a discharge volume that would eliminate such impact. Accordingly, EPA does not have a record basis to support inclusion of a produced water volume limit in this permit. Likewise, simply adding limits because a permit authorizing discharges to the Pacific Ocean has limits, would not be appropriate. Those limits in the Region 9 OCS general permit were added as a requirement of

the California Coastal Commission and are based on state water quality standards. Discharge authorized by this permit are outside of state jurisdiction and no state bordering the Gulf of Mexico included similar requirements as part of their Coastal Zone Management Act review. No change has been made to the final permit based on this request.

Comment 20: Several invertebrate species were found to exhibit acute and chronic toxic effects due to exposure to oil and gas waste streams. Exposure to different types and concentration of drilling fluids were found to cause acute and chronic toxic effects in sea scallops. Oil based drilling fluids were found to be acutely toxic to sea scallops at a concentration of 1 mg/l. Produced water discharged from onshore natural gas plants was found to cause DNA damage to blue mussels located within 1 km.

Response: The EPA disagrees that the cited studies are representative on potential impacts of discharges authorized by this permit. The discharge of oil based drilling fluids and the associated drill cuttings have been prohibited since the 1980s.

The study cited that examined effects of produced water on blue mussels was not found to be useful in analyzing potential impacts of produced water discharge authorized under this permit. There was no chemical analysis presented in the study to show whether the North Sea produced water analyzed is representative of Gulf of Mexico produced water. The produced water in the study also was treated very differently than done at most oil and gas facilities in the Gulf of Mexico. The blue mussel also would not be representative of species found in the area of coverage for this permit<sup>9</sup>. Blue mussels are not found as far south as the Gulf of Mexico in the eastern U.S. The mussels are also found in shallow intertidal waters rather than in the Outer Continental Shelf. Additionally, the study did not find statistically significant impacts due to produced water exposure.

These studies do not appear to present evidence that the permit's current limits are insufficient to protect against unreasonable degradation of the marine environment.

Comment 21: The CBD commented that, based on research on Norwegian produced water and drilling discharges, current methods may not be sensitive enough to detect biological effects beyond a few kilometers. Thus the idea that produced water impacts are largely localized is unverified.

Response: Studies that have been conducted in the Gulf of Mexico did not find far field effects. Given that conditions in the North Sea are very different than those in the Gulf of Mexico and discharges are not limited in the same way as those authorized by this permit. The Norwegian research cited also examines species such as cod and haddock that are not found in U.S. offshore

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<sup>9</sup> U.S. Fish and Wildlife Service, Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (North and Mid-Atlantic), Blue Mussel, Biological Report 82(11.102), U.S. Fish and Wildlife Service, Coastal Ecology Group, June, 1989.

waters generally south of Cape Hatteras<sup>10,11</sup>. As previously mentioned, studies that have examined potential impacts on aquatic life that is found in the permit's area of coverage did not find adverse impacts. The Norwegian study referenced by the CBD does not appear relevant to the Gulf of Mexico.

Comment 22: The CBD stated that the EPA should require monitoring and reporting for additional chemicals in all discharge types. The CBD cited the Pacific OCS general permit as an example for monitoring requirements for chemicals such as benzene and limits for some chemicals in produced water discharges.

Response: The permit's conditions and monitoring requirements are based on a historic body of information that includes numerous studies of oil and gas discharges in the Gulf of Mexico. The EPA has additionally required submittal of data to ensure that conditions have not changed and do or do not warrant new monitoring or limits. Based on available information additional monitoring or limits beyond those included in the proposed permit are not warranted at this time.

The produced water chemical specific monitoring requirements and limits in the Pacific OCS general permit were added as requirements of the California Coastal Commission under the Coastal Zone Management Act (CZMA). Although state water quality criteria do not typically apply outside of state water, they were applied in that case as a result of EPA Region 9's CZMA consultation. No state in the Gulf of Mexico area has made a case for applying state water quality criteria to discharges made to Federal waters as a result of CZMA consultation.

Comment 23: The CBD requested that operators be required to obtain individual permits rather than coverage under the general permit for discharges of drilling waste, produced water, and well treatment fluids in water depths less than 200 meters. The organization noted that the Eastern Gulf of Mexico General Permit recently proposed to required that facilities seaward of the 200-meter isobath obtain coverage under individual permits and explained that individual permits would allow limits to be tailored to the specific discharges expects and thus afford better environmental protection.

Response: The requested change has not been made in the final permit. The Region 4 permit conditions referenced by the CBD would be overly broad if applied to the western Gulf of Mexico. EPA Region 4 did not cover discharges in less than 200 meters of water under the Eastern Gulf of Mexico OCS general permit because of sensitive hard bottom features found in shallower waters in the Eastern Gulf of Mexico. Sensitive features are not found as frequently in the western Gulf of Mexico; therefore, such a blanket prohibition is not warranted under this permit. The permit includes more specific limitations and prohibitions that correspond to BOEM no activity zones and that agency's requirements to conduct live bottom surveys in certain lease blocks. The permit additionally prohibits discharges in areas of biological concern and the

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10 NMFS, Essential Fish Habitat Source Document: Atlantic Cod, *Gadus morhua*, Life History and Habitat Characteristics, NOAA Technical Memorandum NMFS-NE-124, U.S. Department of Commerce, National Marine Fisheries Service, September, 1999.

11 NMFS, Essential Fish Habitat Source Document: Haddock, *Melanogrammus aeglefinus*, Life History and Habitat Characteristics, NOAA Technical Memorandum NMFS-NE-128, U.S. Department of Commerce, National Marine Fisheries Service, September, 1999.

Flower Garden Banks National Marine Sanctuary. The EPA has coordinated closely with the National Marine Sanctuary program and BOEM in developing those permit restrictions and has taken those agencies extensive knowledge to tailor these permit conditions to fit the higher level of extraction in the western Gulf of Mexico and appropriate protections of sensitive areas.

Comment 24: The CBD commented that issuance of this general permit constitutes a major Federal action under the National Environmental Policy Act (NEPA) and the EPA must therefore conduct an environmental review, including preparation of an EIS that examines the environmental consequences of the action.

Response: The EPA agrees that issuance of this General Permit is a major Federal Action that requires review under NEPA. The EPA was a cooperating agency to the Bureau of Ocean Energy Management's Gulf of Mexico OCS Oil and Gas 2017-2022 Multisale Final Environmental Impact Statement (FEIS), which was issued in March 2017. As a cooperating agency with responsibility for the reissuance of the National Pollutant Discharge Elimination System (NPDES) General Permit for discharges located in the OCS offshore Louisiana and Texas, the EPA provided subject matter expertise to the BOEM during the environmental review process. Based on its independent review and evaluation, the EPA has determined the EIS, including all supporting documentation, as incorporated by reference, adequately assesses and discloses the environmental impacts for the reissuance of the NPDES general permit, and that adoption of the EIS by the EPA is authorized under 40 CFR 1506.3. Accordingly, the EPA has adopted the FEIS and takes full responsibility for the scope and content that evaluates the discharges under the NPDES general permit. This decision is documented in EPA's NEPA Record of Decision.

Comment 25: The CBD commented that in previous actions the EPA admitted that issuance of oil and gas general permits may impact listed species and their critical habitat. Therefore, the agency must conduct a formal Section 7 consultation as required by the Endangered Species Act. New information is available describing potential changes in the Gulf and impacts that could occur; therefore, the CBD stated that this action cannot reply on previous consultations.

Response: EPA agrees that consultation with the National Marine Fisheries Service (NMFS) is required for this action. NMFS has determined in this case that the most effective means to conduct formal consultation is through a gulf-wide consultation with BOEM and EPA that addresses all oil and gas related federal actions being undertaken at this time. Based on prior consultations and current information, the EPA has determined that the General Permit may be issued consistent with Sections 7(a)(2) and 7(d) of the ESA prior to the completion of formal consultation with NMFS. Upon completion of the NMFS' Biological Opinion, EPA will reopen and reissue the permit, if necessary, to add any conditions that are necessary to comply with Section 7(a)(2) of the ESA.

#### **ADDITIONAL CHANGES:**

In preparing the final permit, typographical /formatting errors that would not result in substantial changes have also been corrected.