

U.S. Environmental Protection Agency

**Response to Comments on the Draft NPDES Permit for the
Hilcorp Alaska, LLC – Liberty Drilling and Production Island**

NPDES Permit No. AK0053805

U.S. EPA Region 10
Office of Water and Watersheds
October 2018

OVERVIEW

On August 17, 2017, the U.S. Environmental Protection Agency (EPA) proposed issuance of a National Pollutant Discharge Elimination System (NPDES) permit to Hilcorp Alaska, LLC that would authorize wastewater discharges from the Liberty Development and Production Island (NPDES Permit No. AK0053805) to federal waters of the Beaufort Sea, Alaska. The proposed discharges from the facility include sanitary and domestic wastewater, potable water treatment reject water, seawater treatment plant wastewater, construction dewatering, and secondary containment dewatering. With the exception of the continuous wastewater discharges from the seawater treatment plant, all other authorized discharges would occur on a short-term and/or contingency basis.

The Liberty Drilling and Production Island (LDPI) is a “new source” as defined by the Clean Water Act and its implementing regulations. Thus, the EPA’s issuance of the permit constitutes a major federal action subject to compliance with the National Environmental Policy Act (NEPA). See Clean Water Act Section 511(c)(1) and 40 CFR Part 6. The EPA is cooperating with the Bureau of Ocean Energy Management (BOEM) to develop the Environmental Impact Statement (EIS) for LDPI and intends to adopt the document to satisfy its NEPA obligations. BOEM published the Notice of Availability of the Draft EIS in the Federal Register on August 11, 2017.

Public Hearings on the proposed LDPI were held on the following dates at the specified locations:

October 2, 2017: Nuiqsut, Alaska

October 3, 2017: Fairbanks, Alaska

October 5, 2017: Utqiagvik, Alaska (formerly known as Barrow)

October 10, 2017: Anchorage, Alaska

Testimony provided that pertained to the NPDES permit action has been captured in this response to comments document. The originally scheduled Public Hearing to have been held on October 4th in Kaktovik was cancelled due to weather.

The public comment period on the Draft NPDES Permit closed on November 16, 2017. The EPA received comments on the proposed permit from Hilcorp Alaska, LLC (the Permittee) on November 16, 2017 (via email), as well as from the general public (via email).

Below are the EPA’s responses to the comments.

REVISED SUBMISSION REQUIREMENTS FOR THE BMP PLAN, QAP, AND CHEMICAL ADDITIVES INVENTORY

On October 12, 2018, Hilcorp informed the EPA that it is possible that discharges from the LDPI would not commence until the winter of 2021 or later. As a result, the EPA revised the timing of certain required submissions so they are tied to the commencement of authorized discharges, rather than the effective date of the NPDES permit. Additionally, the EPA has added a discharge notification requirement. Specifically, the EPA has made the following changes:

Permit Part I.A. (“Authorization to Discharge”): The Permittee must notify the Director, in writing, 7 days prior to initiation of any discharge. This notification must be signed in accordance with the Signatory Requirements (Section V.E.) of this permit.

The BMP Plan and QAP: These documents are required to be submitted to the EPA at least 180 days prior to commencing any authorized discharges. The Draft Permit had proposed to require these documents to be submitted within 180 days after the effective date of the Permit. The Table of Submittals and Permit Parts II.A.1 and II.B. have been revised to reflect this change.

The Chemical Additives Inventory and Annual BMP Certification: These documents are required to be submitted to the EPA with the December DMR after authorized discharges have commenced. The Draft Permit had proposed to require these documents to be submitted with the December DMR, but the change (underlined) ties the submission to being once discharges are occurring. The Table of Submittals and Permit Parts I.B.10.d and II.A.3.k.iv. have been revised to reflect this change.

COMMENTS SUBMITTED BY HILCORP ALASKA, LLC.

COMMENT #1: The Notice of Complete Application that was supplied around August 25, 2016 indicated that the permit number would be AK-005380-5. The current draft permit and supporting documents reference permit number AK-005308-5. Please clarify which permit number is correct.

EPA RESPONSE #1: The correct permit number is AK0053805. The reference to AK-005308-5 was a typo and the permit and ODCE have been revised to reflect this correction.

COMMENT #2 – WHOLE EFFLUENT TOXICITY (WET) TESTING: Hilcorp is concerned with the proposed Whole Effluent Toxicity (WET) testing in current draft permit. WET testing is particularly onerous and logistically complicated. All of [the following] factors make the timing of WET testing extremely difficult.

- A. Firstly, the number of WET test labs is limited, and shipping currently has to occur out of state via air transport. The hold time for WET test samples is only 36 hours and the sample temperature must be kept below 6°C. Upon receipt, the WET test lab would

also be required to initiate the acceleration of testing and/or a toxicity identification evaluation (TIE) on a short timeframe to meet the 36 hour hold time. Should any portion of logistics be cancelled or delayed due to weather conditions or other factors, WET testing would have to be cancelled or rescheduled.

- B. Secondly, the current draft permit requests that samples be collected when all chemicals are within the system. This can prove to be very difficult from a timing/logistics standpoint as not all chemicals are added routinely. Some are batched or used during very specific operations, such as the addition of acid or descaler.
- C. Thirdly, organism availability is another hurdle. The number of organism suppliers is limited. For Topsmelt, there is only a single supplier for the entire world. It typically takes the lab a few weeks to get organisms in and available from suppliers, and there have been instances where organisms are not at the appropriate life stage to perform the testing.

EPA RESPONSE #2: As a general practice, when there may be potential impacts associated with chemicals that are used in operations at a facility, the EPA includes WET testing requirements. The EPA understands the constraints associated with the lack of nearby analytical laboratories. As such, the EPA has revised the permit (Permit Part I.B.11.b.) to establish the regulatory holding time of no more than 36 hours as the general requirement, with a potential additional holding time of not to exceed 72 hours. The permit also requires documentation in the discharge monitoring reports (DMRs) of the conditions that resulted in the need for the longer holding time beyond 36 hours and the potential effect of the extended holding time on the accuracy of the results. Please note that the permit does not establish WET limits as discharge data does not exist to determine reasonable potential; rather, the monitoring data will be used to inform ongoing permit implementation, oversight activities, and future decision-making.

Regarding the second point (“B,” above), the permit does not require that samples be collected when “all chemicals are within the system.” The permit requires sampling during periods “when chemicals are used and when the applicable waste streams are discharged to surface waters subject to [the] permit.” The intent of this requirement is that (a) if chemicals are being added during the treatment process of the applicable waste stream and (b) the waste stream is being discharged to surface waters subject to the permit, then WET testing is required to occur during the specified sampling period (semi-annually for potable water reject waste and quarterly for seawater treatment plant discharges).

If the Permittee knows there will be a point during the specified sampling period during which a maximum number of chemicals will be used in the treatment processes, then it is ideal to collect the WET sample at that time. EPA has revised the permit language at Permit Part I.B.11.a to provide clarity: “These samples must be collected during periods of chemical treatment within the applicable systems and when the Permittee reasonably expects the maximum number of chemicals to be discharged.”

Lastly, the EPA acknowledges the potential for occasional issues obtaining topsmelt due to the limited number of commercial suppliers within the US. The EPA included in the draft permit the ability to use the inland silverside (*Menidia beryllina*) as a substitute species in the event that topsmelt are unavailable. However, the EPA has revised the permit to include a second substitute species, the sheephead minnow (*Cyprinodon variegatus*), to allow the Permittee additional flexibility in completing the required testing. If a substitute test species is used, then the Permittee must document in the appropriate DMR that the topsmelt was unavailable at the time the test was conducted.

The Permit has been revised as result of this comment.

COMMENT #3 – POTABLE WATER TREATMENT REJECT WET REQUIREMENTS: In addition to the logistical difficulties of WET testing for the LDPI, the potable water treatment discharge (001B) is a contingency discharge and is very small (average flow of 5,000 gallons per day, ~3.5 gallons per minute). Due to the small size, and the contingent nature of the discharge, Hilcorp requests that the WET testing requirement for the potable water treatment be eliminated or reduced in frequency (e.g. use of the system for greater than 90 days to trigger WET testing).

EPA RESPONSE #3: Whole effluent toxicity (WET) tests are an integral tool in the assessment of water quality. For the protection of aquatic life, EPA's integrated strategy includes the use of three control approaches: 1) the chemical-specific approach, 2) the WET control approach, and 3) the biological criteria/bioassessment approach. The two primary advantages of using WET controls over individual, chemical-specific controls are (1) WET tests evaluate the integrated effects of all the chemical(s) in the aqueous sample; and (2) while EPA has established aquatic life criteria for a relatively small number (126) of chemical-specific pollutants, WET tests can measure toxicity caused by other compounds for which EPA does not have chemical-specific numeric criteria for the protection of aquatic life or approved parameter-specific analytical test methods. Reliance solely on chemical-specific numeric criteria or bioassessments could result in a considerably less effective toxics control program. WET testing is a vital component of the water quality standards implementation through the NPDES permitting process and supports meeting the goals of the Clean Water Act (CWA) to "...maintain the chemical, physical and biological integrity of the nation's waters." 33 U.S.C. § 1251

Furthermore, the Clean Water Act prohibits the discharge of "toxic pollutants in toxic amounts". On October 26, 1995, EPA promulgated a final rule under the CWA that adds WET testing methods to the list of nationally applicable methods in 40 CFR Part 136. It is EPA policy and practice to include monitoring requirements for such parameters in efforts to better characterize the effluent and assess treatment efficiency (40 CFR 122.44(i) and 122.48). Please also refer to Section 6.3 and 8.2.4 of EPA's NPDES Permit Writer's Manual (EPA-833-K-10-001, September 2010), and EPA's Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies (US EPA 1996).

Hilcorp's NPDES Permit Application (submitted December 3, 2016) described the potable water treatment reject discharge as a contingency discharge with a discharge volume estimated to be on average 5,000 gallons per day (gpd), with a maximum discharge of 20,000 gpd. Although EPA recognizes that this is a relatively small discharge volume, EPA is concerned about the pollutant parameters in the discharge and not the amount or frequency of the discharge. In addition, NPDES regulations do not provide for the consideration of discharge volume when determining the need or frequency of effluent monitoring for toxicity. With the limited data available on the toxicity of the potable water reject discharge, bi-annual testing (only when treatment chemicals are added) will provide valuable data that will inform the permit reissuance process and will also help ensure the protection of the receiving water. Furthermore, pursuant to CWA Section 308, EPA has the authority to require monitoring in NPDES permits and to adjust monitoring frequencies. The requirements included in the Permit are consistent with CWA Sections 308 and 402.

Furthermore, based on the NPDES Permit Application, it is EPA's understanding that the potable water system will not result in a wastewater discharge to surface waters subject to the NPDES permit until approximately Year 3 of the project. The NPDES permit term is 5 years and this requirement will help provide valuable WET monitoring data for consideration during the permit reissuance process. During the permit reissuance, EPA will review the WET data provided and make a determination regarding the frequency of WET testing to be required during the next permit cycle.

The Permit has not been revised as a result of this comment.

COMMENT #4 – STP WHOLE EFFLUENT TOXICITY REQUIREMENTS: Hilcorp also requests that the WET testing requirement for the Seawater Treatment Plant (STP) discharge (002) also be either eliminated or reduced in frequency. The basis for requiring the WET testing states that: "This approach is preferable to attempting to limit the discharge of each specific chemical. Due to the large number of additives potentially used, it would be difficult to develop technology-based limits for each chemical." The STP discharge does not have a large number of additives, in fact, for most of the year, it will only have one additive which is chlorine. The primary chemical that will be utilized is chlorination and the Draft Permit already includes limitations for its use. The only other chemicals that may be included in the discharge would be residual coagulant chemicals that would only be used during spring break-up or during summer storm events when the ambient seawater is high in Total Suspended Solids (TSS). Based on these facts, requiring quarterly WET testing of the STP seems [to] be onerous since the discharge of TRC is already being monitored and is limited by the permit. Also, historic toxicity data from the other three STPs in the Prudhoe area have never seen a toxic impact during WET testing. Based on these facts, Hilcorp request[s] that WET testing of the STP discharge either be eliminated or reduced in frequency.

If WET testing is not eliminated for the proposed discharges, Hilcorp request the consideration of performing an in-house test in lieu of shipping samples to a third-party laboratory, or as a preliminary test with samples requiring third party testing when certain factors are triggered. In addition, there is currently no relief for acceptable results over time in the current Draft Permit. Hilcorp requests considerations of including sampling reduction clauses to alleviate some of the burdens associated with performing WET monitoring. Specifically, WET testing frequency should allow for a reduction in frequency after the first year if no toxicity us seen in the first year.

EPA RESPONSE #4: WET tests are an integral tool in the assessment of water quality. For the protection of aquatic life, EPA’s integrated strategy includes the use of three control approaches: 1) the chemical-specific approach, 2) the WET control approach, and 3) the biological criteria/bioassessment approach. The two primary advantages of using WET controls over individual, chemical-specific controls are (1) WET tests evaluate the integrated effects of all the chemical(s) in the aqueous sample; and (2) while EPA has established aquatic life criteria for a relatively small number (126) of chemical-specific pollutants, WET tests can measure toxicity caused by other compounds for which EPA does not have chemical-specific numeric criteria for the protection of aquatic life or approved parameter-specific analytical test methods. Reliance solely on chemical-specific numeric criteria or bioassessments could result in a considerably less effective toxics control program. WET testing is a vital component of the water quality standards implementation through the NPDES permitting process and supports meeting the goals of the CWA to "...maintain the chemical, physical and biological integrity of the nation's waters." 33 U.S.C. § 1251.

Furthermore, the Clean Water Act prohibits the discharge of “toxic pollutants in toxic amounts”. On October 26, 1995, EPA promulgated a final rule under the CWA that adds whole effluent toxicity (WET) testing methods to the list of nationally applicable methods in 40 CFR Part 136. It is EPA policy and practice to include monitoring requirements for such parameters in efforts to better characterize the effluent and assess treatment efficiency (40 CFR 122.44(i) and 122.48). Please also refer to Section 6.3 and 8.2.4 of EPA’s NPDES Permit Writer’s Manual (EPA-833-K-10-001, September 2010), and EPA’s Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies (US EPA 1996).

EPA guidance recommends that major dischargers conduct monthly WET testing (Region 8, 9, 10 Toxicity Training Tool, 2010). In 1996, EPA issued Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies. This guidance generally does not support reductions in monitoring frequencies below quarterly (4/year). For chronic WET testing, which measures longer term effects, quarterly tests are necessary to ensure that the monitoring frequency adequately characterizes and represents any temporal variability in the effluent, and takes into consideration all pertinent features of the facility’s entire operation and production.

While the applicant states that chlorine is the only treatment chemical used during much of the year, it is acknowledged that chemical coagulants may also be used during periods of high TSS.

Chemical coagulants are commonly used during industrial treatment processes and can be toxic to the aquatic environment. The permit does not include effluent limitations for coagulants, nor are the specific chemical coagulants identified in the NPDES permit application (submitted December 3, 2016). Further, as is common with seawater treatment plants, it is suspected that additional maintenance chemicals will also be added to the system as needed, including biocides and de-scalers, and the hypersaline brine that will be produced and discharged intermittently can also have a toxic effect. Given the nature of the facility operations and the potential presence of toxic compounds in the effluent, EPA believes that WET monitoring is warranted to ensure no unreasonable degradation of the marine environment.

Regarding in-house testing, there is no requirement in the permit for the applicant to contract with an external laboratory to complete the WET tests; as long as the tests are conducted in accordance with the Quality Assurance/Quality Control (QA/QC) Plan and test acceptability requirements described in the corresponding methods manual the permittee can perform the tests in-house.

Furthermore, based on the NPDES Permit Application, it is EPA's understanding that the STP will not result in a wastewater discharge to surface waters subject to the NPDES permit until approximately Year 3 of the project. The NPDES permit term is for 5 years and this monitoring requirement will provide 2 years of WET monitoring data for consideration during the permit reissuance process. During the permit reissuance process, EPA will review the WET data provided and make a determination regarding the frequency of WET testing to be required during the next permit cycle.

The Permit has not been revised as a result of this comment.

SPECIFIC COMMENTS ON THE DRAFT PERMIT

COMMENT #5 – TABLE OF CONTENTS: Section I is missing references to Sections I.F., I.G., and I.H., and the current reference to Section I.E. is to the wrong section.

EPA RESPONSE #5: Thank you for this comment. EPA has corrected the internal references and hyperlinks so all major sub-sections correctly populate the Table of Contents.

The Permit has been revised as a result of this comment.

COMMENT #6 – TABLE OF TABLES: There is a footnote for each indicated table; however, there are no footnotes for reference on page 3.

EPA RESPONSE #6: This is a result of a formatting error. The footnote reference is applicable to each of the tables, but was not intended to be included in the Table of Tables. EPA has removed the erroneous footnote references from the Table of Tables.

The Permit has been revised as a result of this comment.

COMMENT #7 – SECTION I.B.10: Item 10(a)(ii) should read “the maximum manufacturer’s recommended concentration” per the FS.

EPA RESPONSE #7: Permit Part I.B.10(a)(ii) should include the condition to follow the manufacturer’s directions, specifically “the maximum manufacturer’s recommended concentration.” EPA has included this missing language in the Permit, it was EPA’s intent to include this language as discussed in the Fact Sheet.

The Permit has been revised as a result of this comment.

COMMENT #8 – SECTION I.B.10: Item 10(b) should clarify that the inventory of chemical additives would only include those that would potentially be in the discharge (i.e. used upstream of the filters or in the filtration process) and not those used in treating the final seawater for injection for enhanced oil recovery (EOR).

EPA RESPONSE #8: It is EPA’s intent to require a chemical additives inventory for chemicals that would be present in the wastewater discharge(s), as demonstrated by the language at Permit Part I.B.10.a: “The concentration of chemical additives [..] in any authorized discharge...” and Permit Part I.B.10.b: “The Permittee must keep an inventory of chemical additives used to treat or maintain the processes resulting in the authorized discharges under this permit.” Seawater diverted for enhanced oil recovery does not result in a wastewater discharge to surface waters authorized under this NPDES permit and, therefore, does not need to comply the requirements of this permit.

The Permit has not been revised as result of this comment.

COMMENT #9 – SECTION I.B.11: Hilcorp recommends modifying the definitions of WET test frequencies to the following for clarity: Semi-Annual (i.e. once every six months) and Quarterly (i.e. once every three months).

EPA RESPONSE #9: EPA has revised the definition of the WET testing frequencies to provide more clarity. The referenced section reads as follows: “The Permittee must conduct semi-annual (i.e. twice per year, or once every six months) chronic whole effluent toxicity tests on effluent samples of potable water treatment reject wastewater (001B) and quarterly (i.e. four times per year, or once every three months) chronic whole effluent toxicity tests on effluent samples of seawater treatment plant wastewater (002) during periods when chemicals (e.g. biocides, clarifying agents, and/or chlorination/dechlorination chemicals) are used and when the applicable waste streams are discharged to surface waters subject to this permit. Alternatively, WET testing is not required during the testing schedule specified (above) for the applicable systems when: (1) chemicals are not added to the treatment process; **or** (2) chemicals are

added to the treatment process, but the waste stream is not discharged to surface waters subject to this permit.”

The Permit has been revised as result of this comment.

COMMENT #10 – SECTION I.B.11: Item I.B.11(b)(1) currently references I.A.11. Hilcorp believes this should reference I.B.11.

EPA RESPONSE #10: The commenter is correct. EPA has reviewed the Permit to correct any erroneous internal references, including this one.

The Permit has been revised as a result of this comment.

COMMENT #11 – SECTION I.B.11: Item I.B.11(c)(1) states that the dilution series requires testing of 100% effluent. Since the potable water reject water (001B) is concentrated brine, testing of 100% effluent will not be possible since the brine will require dilution with freshwater to achieve the test’s recommended salinity range for a particular species. Similarly, the STP discharge (002) may be either brackish in the open-water season or hypersaline during the winter which will require either adding brine (summer) or freshwater (winter) to achieve the desired salinity testing.

Hilcorp requests that this requirement be reworded to read: “If the addition of brine solution, dry salts, or freshwater is necessary to adjust the salinity of the effluent, it may not be possible to achieve 100% effluent as one of the test concentrations. If this occurs, the maximum effluent concentration achievable after salinity adjustment will be used as a substitute for 100% effluent, and this will be documented in the WET report. The other test concentrations shall remain the same.” Also note that since 100% effluent will often not be possible, this will affect the calculation of the chronic toxicity units and the toxic trigger of 1 TU_C. See also comment on Item II(e) below.

EPA RESPONSE #11: EPA recognizes that the addition of brine solution, dry salts, or freshwater to adjust the salinity of effluent samples may preclude the use of a 100% effluent sample. EPA has revised the permit language to include the ability to adjust the salinity with freshwater, as appropriate. Please refer to RTC #13 regarding the toxicity trigger.

The Permit has been revised as result of this comment.

COMMENT #12 – SECTION I.B.11: Item I.B.11(d) requires the preparation of an initial investigation Toxicity Reduction Elimination (TRE) Workplan prior to initiation of toxicity testing. Hilcorp requests instead that the TRE Workplan be developed if chronic toxicity is seen above the trigger level.

EPA RESPONSE #12: It is important to clarify the purpose and intent of TIE/TRE requirements. The Technical Support Document for Water Quality Based Toxics Control (TSD; USEPA, 1991b)

defines a TRE as a “site specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reductions in effluent toxicity.” A TIE is often a component of a TRE analysis and is a step-wise process used to identify the cause(s) of toxicity by means of accelerated WET testing and manipulation (chemical or physical) of the effluent. In the NPDES permitting program, TREs are used to identify and reduce, or eliminate, sources of effluent toxicity whether or not there are WET limits in the Permit. However, TREs are typically only required in the event the effluent is exceeding a toxicity limitation.

It is EPA policy to require reference steps to be taken to identify and control toxicant(s) (TRE/TIE) in the event that toxic effluent results are observed (US EPA 2004 and US EPA 1996e, US EPA 3/27/2001: Policy Memorandum: Clarifications Regarding Toxicity Reduction and Identification Evaluations in the National Pollutant Discharge Elimination System Program). Furthermore, EPA has not provided WET limits (acute or chronic) within the Permit, but, as discussed above, EPA has the authority to require WET monitoring in NPDES permits.

The initial investigation TRE workplan requires the permittee to consider and document a plan of action in the event a discharge exceeds an applicable WET trigger. While not the same as an effluent limitation, WET triggers are intended to protect the receiving water and are based on the narrative prohibition on “discharges of toxics in toxic amounts” (CWA Section 101(a) and TSD Section 3.3.3.). Having a plan of action in place before WET testing begins helps ensure the applicant is ready to quickly act in the event a WET trigger is exceeded and rapidly take appropriate steps to reduce toxicity back to acceptable levels determined necessary to protect the receiving water (i.e. below the trigger). As such, development of the TRE workplan prior to initiation of toxicity testing is necessary and required. EPA will retain this requirement in the final permit.

The Permit has not been revised as a result of this comment.

COMMENT #13 – SECTION I.B.11: Item I.B.11(e) of the permit requires accelerated testing if chronic toxicity is seen about $1 TU_c$. This trigger level needs to be adjusted to take into account the fact that 100% effluent testing may not be possible. For example, if the maximum effluent concentration tested was 60% and no chronic toxicity for survival endpoints was seen ($[NOEC] = 60\%$), then the TU_c would be $100/60 = 1.67$ which would exceed the trigger even though no chronic toxicity was seen at any test concentration. Also note that the reference to $1 TU_c$ shows up multiple times in the document.

EPA RESPONSE #13: EPA recognizes the addition of brine solution or freshwater to adjust the salinity of effluent samples may preclude the use of a 100% effluent sample. Permit Part I.B.11.d.i. states that “If the addition of brine solution, dry salts, or freshwater is necessary to adjust the salinity of the effluent, it may not be possible to achieve 100% effluent as one of the test concentrations. If this occurs, the maximum effluent concentration achievable after

salinity adjustment will be used as a substitute for 100% effluent, and this will be documented in the next WET report” (note, underlined text is a change to the permit as a result of RTC #11). TU_C calculations will also treat the highest effluent concentration achievable after the salinity adjustment as 100% effluent. As a result, it is not necessary to revise the trigger and no changes to the trigger level have been made in the Permit.

The Permit has not been revised as a result of this comment.

COMMENT #14 – TABLE 1, NOTE 5: Hilcorp recommends including language on what to do should visual observations of the outfall not be possible.

EPA RESPONSE #14: If visual observations of the outfall area are not possible, the Permittee must document the days in that month’s DMR when visual observations were unable to be conducted and must include an explanation as to why the outfall was obscured from view.

COMMENT #15 – TABLE 1, NOTE 6: There is no corresponding footnote for Note 6. As the referenced section is applicable to all discharges, Hilcorp recommends removing the Note.

EPA RESPONSE #15: It was EPA’s intent to remove the reference to “Note 6” from this table since the referenced section is applicable to all discharges and is found at Permit Part I.B.2., as the commenter noted. EPA has removed this redundant reference from Table 1.

The Permit has been revised as a result of this comment.

COMMENT #16 – TABLE 2 AND TABLE 3: There is no limit provided for WET Testing in the table, however, Sections I.B.11.d., I.B.11.e., and I.B.11.f. all indicate a limit of 1 TU_C .

EPA RESPONSE #16: EPA did not develop an effluent limitation for WET testing requirements since there is no effluent monitoring data available for this facility. The WET requirements included in the permit are monitoring requirements. If toxicity is observed at a value greater than 1 TU_C , then the Permittee is required to follow the TIE/TRE requirements found at Permit Parts I.B.11.e-g.

The Permit has not been revised as a result of this comment.

COMMENT #17 – TABLE 2, NOTE 3: Note 3 currently states “no chemicals (see definitions).” “No chemicals” is not defined in the definitions. Any definition should only include those chemicals used upstream of the filters or in the filter backwash process (i.e. those chemicals that would be discharged) and not those used downstream for EOR injection. [Also] Note 3 currently references Section I.A.11., Hilcorp believes this should reference I.B.11.

EPA RESPONSE #17: EPA intended to delete the reference to define “chemicals” because there is no regulatory definition for “chemicals” in the context of NPDES Permitting currently and we

were concerned that including any such definition in this context would inadvertently restrict or regulate the use of chemicals beyond the Chemical Additives Inventory Reporting requirements (Permit Part I.B.10.). EPA has removed the “see definitions” text from Footnote 3. Additionally, EPA has corrected the internal reference included in Footnote 3.

The Permit has been revised as a result of this comment.

COMMENT #18 – TABLE 4 AND TABLE 5: Flow units should be gpd due to the small size of both discharges. Flow sample type should allow estimation or calculation per the FS, since the amount of flow will either be estimated based on the total volume of the discharge or will be based on a portable pump, pump rate, and total time pumped. Construction dewatering and secondary containment dewatering are not the type of discharges that would lend themselves to continuous recording devices.

EPA RESPONSE #18: EPA has revised the Permit to require reporting of flow in gallons per day (gpd) for both the construction dewatering wastewater (Outfall 003) and secondary containment dewatering wastewater (Outfall 004), as well as the ability to estimate the flow rate. EPA has also included a requirement to report the discharge volume in addition to the estimated flow rate since the discharge may only occur during a short period in the day, rather than continuously throughout the day.

The Permit has been revised as a result of this comment.

COMMENT #19 – TABLE 5, NOTE 2: Note 2 should read “secondary containment” instead of “construction.”

EPA RESPONSE #19: It was EPA’s intent to reference “secondary containment” and not “construction.” EPA has revised the referenced language.

The permit has been revised as a result of this comment.

COMMENT #20 – Section III.G: This section currently references Section III.H., Hilcorp believes this should reference III.G.

EPA RESPONSE #20. EPA has reviewed the Permit and corrected this and other erroneous internal references.

The permit has been revised as a result of this comment.

SPECIFIC COMMENTS ON THE FACT SHEET AND OCEAN DISCHARGE CRITERIA EVALUATION

COMMENT #21 – FACT SHEET SECTION II.B.3. AND ODCE SECTION 1.2.3.: The description of the STP discharge is in error. The text describes the discharge as being a high-concentration brine with

a ratio of major ions similar to seawater but with significantly higher concentrations. The only difference between the discharge and intake seawater is that it will have higher concentrations of TSS as a result of the filtration processes and any chemicals that may be added to aid this process. The discharge will be of the same salinity as the intake waters and will not have higher concentrations of major ions and is not a brine.

EPA RESPONSE #21: EPA agrees with the commenter. Based on the description of the Seawater Treatment processes described within the NPDES Permit Application, it is correct to remove the reference to the discharge “being a high-concentration brine with a ratio of major ions similar to seawater but with significantly higher concentrations.”

The ODCE has been revised as a result of this comment. Please note, EPA does not revise Fact Sheets as a result of the public review process.

COMMENT #22 – ODCE SECTION 2.1: The section describes the proposed action, and should be updated to be consistent with the Development and Production Plan and Draft Environmental Impact Assessment. For example, the gravel volume of up to 833,000 cubic yards for the LDPI should be corrected to 929,900 cubic yards.

EPA RESPONSE #22: EPA has removed the estimated volume of gravel for the construction of the island from the discussion in the ODCE. The estimate of 833,000 cubic yards was informed by the Draft Environmental Impact Statement, and upon further review, there are different values being used across a number of supporting documents. The use of gravel to construct the island is beyond EPA’s regulatory action, which is the NPDES action, and was included in the ODCE simply to provide a more information about the island construction process. To ensure the ODCE remains consistent with the project, EPA will remove this sentence from the construction activities discussion. The remaining discussion regarding the water depth, work surface of the island, and the footprint are consistent with the Development and Production Plan and the Draft Environmental Impact Statement (BOEM, 2017)

COMMENT #23 – ODCE SECTION 3.4: This section should be updated to reflect the most recent status of threatened and endangered species and critical habitat in the Liberty area. There is critical habitat designated for Polar Bears within the Action Area.

EPA RESPONSE #23: EPA inadvertently omitted the Polar Bear Critical Habitat designation from Table 1 (Section 3.4.) in the ODCE, however EPA did provide a discussion on the Polar Bear critical habitat rulemaking in the ODCE and EPA did include the Polar Bear critical habitat during Section 7 Endangered Species Act (ESA) Consultation. This inadvertent omission does not change the conclusions presented in the ODCE.

The ODCE has been revised as a result of this comment.

COMMENT #24 – ODCE SECTION 3.5: This section references an “Area of Coverage” in terms of discussing essential fish habitat (EFH). “Area of Coverage” is not defined or explained in the document. The discussion in this section regarding EFH species should be clarified by defining the “Area of Coverage.”

EPA RESPONSE #24: The reference to the “Area of Coverage” was a typographical error. This should have read the “project area.” This section has been revised, as follows, to minimize confusion: “In the project area, EFH has been established for snow crabs, Arctic cod, saffron cod, and Pacific salmon (chinook, coho, pink, sockeye, and chum). Juvenile and adult life stages of each EFH species are present within the project area. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires EPA to consult with NMFS when a proposed discharge has the potential to adversely affect EFH. Table 2 lists the EFH species potentially present in the project area.”

The ODCE has been revised as a result of this comment.

COMMENTS SUBMITTED DURING PUBLIC HEARINGS AND VIA EMAIL

The following comments were extracted from the [October 2, 2017 Public Hearing Transcript, Nuiqsut, Alaska](#).

COMMENT #25 (CARL BROWER, NUIQSUT WHALING ASSOCIATION): Right now I don't think that's a good idea to have Native Village to intervene with what you -- what should be [indiscernible] up with the Nuiqsut Whaling Association. And none of you guys have been meeting with the Nuiqsut Whaling Association. That's a multifaceted people that are out there. You are eight miles from our whaling ground. And all of this I have been trying to get information on, and how much is back in our village? And I stated time after time after time at AEWG meeting how impacted, and where was the agencies then? And agencies are here to protect the Native village way of life, their culture. And yet nothing. And we are still fighting. And yet you still want to put another oil rig right next to our hunting grounds and say that there is not going to be no zero tolerance. That zero tolerance is out there for a reason. Zero tolerance of no discharge of anything; wastewater, anything; mud, drilling mud of any kind because that's the impacts that's there. We stated that time after time after time even at AEWG meeting, and yet we still fight. All the impacts this village gone through, all the barges that interfere with our whaling, cruise ships and sailboats, and yet you still -- we still fight. When are you guys going to listen to us? Thank you.

EPA RESPONSE #25: The Permit does not authorize the discharge of drilling muds and drill cuttings, it only authorizes the contingency discharge of sanitary and domestic wastewater, potable water reject wastes, construction dewatering, and secondary containment dewatering. The only continuous discharge from the LDPI will be from the seawater treatment plant. Based

on EPA's analyses of the potential impacts associated with the discharges, and with the restrictions and requirements established in the permit, EPA concluded that the permit will not result in unreasonable degradation to the marine environment.

COMMENT #26 (MR. EDWARD NUKAPIGAK): Earlier they mentioned about zero discharge to the ocean. Zero discharge was brought up at some point, and it was granted that they should not discharge to the ocean. They were also to have a barge with a tanker where they can dispose. Drilling muds was supposed to be disposed properly to the shore, back to the shore.

This discharge to the ocean will definitely kill all or most of the marine mammals. I experienced one iceberg full of light brown mud. It's not a natural mud. And I know where that came from: Northstar. Is that what we are going to see out there if Liberty was to do a discharge to the ocean?

EPA RESPONSE #26: The NPDES permit does not authorize the discharge of muds and cuttings from the Liberty Development and Production Island. The Development and Production Plan ([Hilcorp, Amended May 26, 2017](#)) states that muds and cuttings generated from drilling the disposal well will be temporarily stored on the Liberty pad or at an onshore facility pending disposal. Temporary storage on the LDPI would be in a bermed, lined area. Once the disposal well and injection facilities are commissioned, drilling wastes will be disposed of downhole in the disposal well on the LDPI or at another approved disposal well. During the drilling of production wells, the generated waste materials will also be injected into the disposal well.

The NPDES permit only authorizes the contingency discharges of sanitary and domestic wastewater, secondary containment and construction dewatering wastewater, and the continuous discharge from the seawater treatment plant.

The following comment was extracted from the [October 5, 2017 Public Hearing Transcript, Utqiagvik, Alaska](#).

COMMENT #27 (JOE LEAVITT, DEPUTY COMMISSIONER OF AEWC): Will all drilling waste be injected into the disposal well? If not, how will it be handled? We understand the plan calls for an ongoing waste stream from the sea water treatment plant that will include high concentration brine. We would like to see this waste stream injected into the disposal well. Also, the current plan would increase saline concentrations in the discharge area, possibly affecting bowhead whale prey and other resources. If there is a reason that the brine cannot be injected into the disposal well, then we would need to have baseline studies of salinity levels in the discharge area. We also will need to see ongoing monitoring of salinity levels if the brine is released. And we will need to see a cumulative impact study combining this waste stream with others that already exist. The AEWC requests that the North Slope Borough Department of Wildlife Management be involved in designing these studies.

This area of the Beaufort Sea is rich in marine mammals that help to feed our families. Therefore, every precaution must be taken to make sure that we do not put things in the water that would cause harm to the whales or other resources or that would cause our whales to deflect away from the usual migration routes. From Liberty, this is especially important for Nuiqsut and Barrow. We would like to see the wastewater streams including the brine from the seawater treatment plant injected into disposal wells. If this cannot be done, the AEWC wants the North Slope Borough Department of Wildlife to participate in designing monitoring plans funded by Hilcorp.

EPA RESPONSE #27: The NPDES permit does not authorize the discharge of drilling muds and/or drill cuttings from the LDPI. Hilcorp intends to containerize the drilling wastes produced during the drilling of the disposal well and will dispose of these materials at an onshore facility or into the disposal well once it is available onsite. During the drilling of production wells, the generated waste materials will also be injected into the disposal well.

The NPDES permit authorizes the contingency discharges of sanitary and domestic wastewater, potable water treatment reject waste, construction dewatering wastewater, and secondary containment dewatering wastewater. The only continuous waste stream to be discharged from the LDPI is from the seawater treatment plant. Hilcorp will not be able to inject this waste stream into the disposal well because the filtered solids (natural TSS from the marine environment) will cause issues with maintaining the disposal well.

EPA's Ocean Discharge Criteria Evaluation (ODCE) analyzes the impacts of the wastewater discharges on the marine environment, which includes potential impacts to marine mammals. Based on EPA's analyses of the potential impacts associated with the discharges, and with the restrictions and requirements established in the permit, EPA concluded that the permit will not result in unreasonable degradation to the marine environment, therefore EPA has not included an environmental monitoring program in the Permit beyond monitoring to ensure compliance with the permit requirements.

The following comment was submitted via email on October 30, 2017

COMMENT #28 (C.A. ANDERSON): I'm in favor of this project being permitted. As a lifelong Alaskan, I've watched Alaska's resources being developed increasingly responsibly. This is good for Alaska and for our nation.

EPA RESPONSE #28: Thank you for your comment.

REFERENCES

- Hilcorp (Hilcorp Alaska, LLC). 2016b. Revised NPDES Permit Application. (Received by EPA on December 3, 2016).
- Hilcorp (Hilcorp Alaska, LLC). 2014. Liberty Development Project – Development and Production Plan. Revised September 8, 2015 and May 26, 2017.
- US EPA. 1996e. EPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs. US EPA Region 9 Water Division, San Francisco, CA and Region 10 Office of Water, Seattle, WA.
- US EPA. 2001. Clarifications Regarding Toxicity Reduction and Identification Evaluations in the National Pollutant Discharge Elimination System Program (3/27/2001). US EPA Office of Wastewater Management and Office of Regulatory Enforcement, Washington, D.C.