

**NPDES PERMIT NO. TX0092827**  
**STATEMENT OF BASIS**

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
(NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

**APPLICANT:**

U.S. Department of Energy  
Strategic Petroleum Reserve  
Big Hill Oil Storage  
24784 Big Hill Road  
Winnie, TX 77665

**ISSUING OFFICE:**

U.S. Environmental Protection Agency  
Region 6  
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**DATE PREPARED:**

November 6, 2023

**PERMIT ACTION:**

It is proposed that the facility be reissued an NPDES permit for a 5-year term in accordance with regulations contained in 40 Code of Federal Regulations (CFR) 122.46(a).

40 CFR CITATIONS: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations, revised as of September 18, 2023.

**RECEIVING WATER – BASIN**

Gulf of Mexico

**DOCUMENT ABBREVIATIONS**

For brevity, Region 6 used acronyms and abbreviated terminology in this Statement of Basis document whenever possible. The following acronyms were used frequently in this document:

BAT	Best Available Technology Economically Achievable)
BOD <sub>5</sub>	Biochemical oxygen demand (five-day unless noted otherwise)
BPJ	Best professional judgment
CFR	Code of Federal Regulations
cfs	Cubic feet per second
COD	Chemical oxygen demand
COE	United States Corp of Engineers
CWA	Clean Water Act
DMR	Discharge monitoring report
ELG	Effluent limitation guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
F&WS	United States Fish and Wildlife Service
GPD	Gallon per day
IP	Procedures to Implement the Texas Surface Water Quality Standards
µg/l	Micrograms per liter (one part per billion)
mg/l	Milligrams per liter (one part per million)
Menu 7	Intermittent stream with perennial pools
MMCFD	Million cubic feet per day
MGD	Million gallons per day
MSGP	Multi-Sector General Permit
NPDES	National Pollutant Discharge Elimination System
ML	Minimum quantification level
O&G	Oil and grease
RRC	Railroad Commission of Texas
RP	Reasonable potential
SIC	Standard industrial classification
SPR	Strategic Petroleum Reserve
s.u.	Standard units (for parameter pH)
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TDS	Total dissolved solids
TMDL	Total maximum daily load
TOC	Total Organic Carbon
TRC	Total residual chlorine
TSS	Total suspended solids
TSWQS	Texas Surface Water Quality Standards
WET	Whole effluent toxicity
WQMP	Water Quality Management Plan
WQS	Water Quality Standards

**I. PROPOSED CHANGES FROM PREVIOUS PERMIT**

1. Outfalls 002 through 009 are being issued by Texas Commission on Environmental Quality (TCEQ) following approval of the State of Texas' application for the State to implement a Major Category Partial Permit Program under Clean Water Act (CWA) Sections 402(b) and 402 (n)(3) of the Clean Water Act, 33 U.S.C. § 1342 (b) and (n)(3) for discharges of produced water, hydrostatic test water, and gas plant (oil & gas) effluent in Texas.
2. EPA has included the PFAS monitoring requirements based on the memo from EPA headquarters addressing PFAS discharges in NPDES Permits and through the Pretreatment Program and Monitoring Programs.
3. Oil & Grease is changed from monthly to quarterly monitoring requirements based on good compliance history.

**II. APPLICANT LOCATION and ACTIVITY**

As described in the application, the facility is located 9 miles southeast of Winnie in Jefferson County, Winnie, Texas.

Under the Standard Industrial Classification (SIC) Code 5171, Petroleum Bulk Stations and Terminals, the applicant stores and maintains, in ready access, crude oil reserves to be used in the event of national energy crisis as determined by the president of the United States.

The effluent from the crude oil reserves facility is discharged as follows:

Outfall Reference Number	Discharge Coordinates Latitude Deg° Min' Sec" Longitude Deg° Min' Sec"	Type of Discharge	Discharge Flow MGD	Receiving Water	Water Body Segment
001	29° 33' 56" N 094° 11' 52" W	Brine diffuser for saltwater from cavern depressuring, non-contact bearing cooling, raw water pipeline pigging, seal flush return flow	2.05	Gulf of Mexico (approx. 5 miles offshore)	2501*

\* Outfall 001 is located in the Gulf of Mexico in open waters offshore. Because of this distant offshore location, outfall 001 is sampled from a sampling port onsite for safety reasons. Brine effluent is pumped more than five miles through piping before the first diffuser port is reached offshore at a depth exceeding 30-feet to begin diffusion in a permit authorized mixing zone.

The facility plans to perform maintenance work through a project called Life Extension 2 (LE2) that will make the recommended improvements to extend the life of the SPR. The permittee stated in its application that it will not be able to support the Brine Line Integrity Testing (BLIT)

during the outage, nor will there be any disposal of brine to the Gulf during the outage. The Big Hill site will not be able to perform the annual testing as required by the permit, as the site will not discharge any brine to the Gulf during the outage. The Big Hill outage is scheduled for March 2024 to February 2025, meaning there will be no BLIT for 2024 and potentially 2025. The facility requests that the Biomonitoring samples currently on a quarterly schedule be placed on an annual schedule. This request is due to the 100 percent compliance it has maintained for Outfall 001 since 2015. Additionally, the facility requests that oil and grease be removed as a parameter for Outfall 001 and noted that the results for Oil & Grease have consistently been non-detectable at the facility.

### III. PROCESS AND DISCHARGE DESCRIPTION

The Strategic Petroleum Reserve (SPR) stores crude oil in caverns leached deep underground into naturally occurring salt (dome) formations. The purpose of the facility is to store and maintain crude oil reserves to be used in the event of national energy crisis as determined by the President of the United States.

In the initial stages of cavern development, large quantities of fresh (raw) water are used daily to leach (mine) the storage caverns in the underlying salt dome. Once leaching is complete and the caverns are filled with crude oil, the site transitions into operational readiness mode awaiting the order to drawdown.

Operational readiness mode requires continual maintenance of systems and equipment and results in the routine discharges of treated sewage effluent and of retained stormwater from various secondary containments around the facility. The routine maintenance procedures result in intermittent discharges of wash water, fire systems test water, hydrostatic test water, vehicle rinse water, construction dewatering, and raw water associated with oil drawdown exercises.

Discharges from Outfall 001 include brine, once-through non-contact bearing cooling water into the Gulf of Mexico via a permitted brine diffuser, raw water pipeline pigging, and seal flush return flow open nozzle diffuser in Gulf of Mexico.

The table below shows facility's pollutant concentrations obtained from the NPDES application.

**Table 1: Discharge Characteristics for Outfall 001**

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	6.3	2.05
pH, su	6.7 minimum – 8.7 maximum	
Oil and Grease	ND	ND
TSS	54	22.5

#### **IV. REGULATORY AUTHORITY/PERMIT ACTION**

In November 1972, Congress passed the Federal Water Pollution Control Act establishing the NPDES permit program to control water pollution. These amendments established technology-based or end-of-pipe control mechanisms and an interim goal to achieve “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water;” more commonly known as the “swimmable, fishable” goal. Further amendments in 1977 of the CWA gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry and established the basic structure for regulating pollutants discharges into the waters of the United States. In addition, it made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. Regulations governing the EPA administered NPDES permit program are generally found at 40 CFR §122 (program requirements & permit conditions), §124 (procedures for decision making), §125 (technology-based standards) and §136 (analytical procedures). Other parts of 40 CFR provide guidance for specific activities and may be used in this document as required.

It is proposed that the permit be issued for a 5-year term following regulations promulgated at 40 CFR 122.46(a). This is a renewal of an existing permit. An NPDES Application for a Permit to Discharge (Form 1 & 2C) was received on August 09, 2023, and was deemed administratively complete on September 6, 2023.

#### **V. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS**

##### **A. OVERVIEW of TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITION FOR PERMIT ISSUANCE**

Regulations contained in 40 CFR §122.44 NPDES permit limits are developed that meet the more stringent of either technology-based effluent limitation guidelines, numerical and/or narrative water quality standard-based effluent limits, on best professional judgment (BPJ) in the absence of guidelines, and/or requirements pursuant to 40 CFR 122.44(d), whichever are more stringent. Technology-based effluent limitations are established in the proposed draft permit for Oil and Grease and TSS. Water quality-based effluent limitations are established in the proposed draft permit for pH. Monitoring requirements for Per- and Poly- Fluoroalkyl substances (PFAS) are established in the draft permit.

##### **TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS**

Regulations promulgated at 40 CFR §122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on ELGs where applicable, on BPJ in the absence of guidelines, or on a combination of the two. In the absence of promulgated guidelines for the discharge, permit conditions may be established using BPJ procedures. EPA establishes limitations based on the following technology-based controls: BPT, BCT, and BAT.

The facility discharges Brine diffuser for saltwater from cavern de-pressuring, non-contact bearing cooling, raw water pipeline pigging, and seal flush return flow.

Discharges from Outfall 001 include brine diffuser for saltwater from cavern depressurizing, once-through non-contact bearing cooling water, raw water pipeline pigging, and seal flush return flow open nozzle diffuser into the Gulf of Mexico. Discharges are through a diffuser section located at the end of a permitted cement-lined brine disposal pipeline. The source of TSS is from the salt that is suspended in the brine solution. A review of the DMR showed that in 2022, there were two non-compliances that occurred, when two monthly samples for TSS and O&G were missed for Outfall 001. The current permit had a monitoring requirement for TSS and is continued in the draft permit.

## B. WATER QUALITY BASED LIMITATIONS

### 1. General Comments

Water quality-based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on federal or state WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with applicable State WQS and applicable State water quality management plans to assure that surface WQS of the receiving waters are protected and maintained or attained.

### 2. Implementation

The NPDES permits contain technology-based effluent limitations reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included in the NPDES permits. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

### 3. State Water Quality Standards

The Clean Water Act in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR 122.44(d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criterion, the permit must contain an effluent limit for that pollutant. If the discharge poses the reasonable potential to cause an in-stream violation of narrative standards, the permit must contain prohibitions to protect that standard. Additionally, the TWQS found at 30 TAC Chapter 307 states that "surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life." The methodology outlined in the "Procedures to Implement the Texas Surface Water Quality Standards" (IP) is designed to ensure compliance with 30 TAC Chapter

307. Specifically, the methodology is designed to ensure that no source will be allowed to discharge any wastewater which: (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical state water quality standard; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

The IP document is not a state water quality standard, but rather, a non-binding, non-regulatory guidance document. See IP at page 2 stating that "this is a guidance document and should not be interpreted as a replacement to the rules. The TWQS may be found in 30 TAC Sections (§§) 307.1-.10."). EPA does not consider the IP to be a new or revised water quality standard and has never approved it as such. EPA did comment on and conditionally "approve" the IP as part of the Continuing Planning Process (CPP) required under 40 CFR §130.5(c) and the Memorandum of Agreement between TCEQ and EPA, but this does not constitute approval of the IP as a water quality standard under CWA section 303(c). Therefore, EPA is not bound by the IP in establishing limits in this permit – but rather, must ensure that the limits are consistent with the EPA-approved state WQS. However, EPA has made an effort, where we believe the IP procedures are consistent with all applicable State and Federal regulations, to use those procedures.

The general criteria and numerical criteria which make up the stream standards are provided in the 2010 EPA-approved Texas Water Quality Standards, Texas Administrative Code (TAC), 30 TAC Sections 307.1 - 307.9, effective March 18, 2021.

Gulf of Mexico, Segment 2501 is identified by the Texas Commission on Environmental Quality (TCEQ) as a water body with the following designated uses:

Primary Contact Recreation  
Exceptional Aquatic Life  
Oyster Waters

#### 4. Reasonable Potential- Procedures

EPA develops draft permits to comply with State WQS, and for consistency, attempts to follow the IP where appropriate. However, EPA is bound by the State's WQS, not State guidance, including the IP, in determining permit decisions. EPA performs its own technical and legal review for permit issuance, to assure compliance with all applicable State and Federal requirements, including State WQS, and makes its determination based on that review. Waste load allocations (WLA's) are calculated using estimated effluent dilutions, criteria outlined in the TWQS, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). The WLA is the end-of-pipe effluent concentrations that can be discharged and still meet instream criteria after mixing with the receiving stream. From the WLA, a long-term average (LTA) is calculated, for both chronic and acute toxicity, using a log normal probability distribution, a given coefficient of variation (0.6), and either a 90th or a 99th percentile confidence level. The 90th percentile confidence level is for discharges to rivers, freshwater streams and narrow tidal rivers with upstream flow data, and the 99th percentile

confidence level is for the remainder of cases. For facilities that discharge into receiving streams that have human health standards, a separate LTA will be calculated. The implementation procedures for determining the human health LTA use a 99th percentile confidence level, along with a given coefficient of variation (0.6). The lowest of the calculated LTA; acute, chronic and/or human health, is used to calculate the daily average and daily maximum permit limits.

Procedures found in the IP for determining significant potential are to compare the reported analytical data either from the DMR history and/or the application information, against percentages of the calculated daily average water quality-based effluent limitation. If the average of the effluent data equals or exceeds 70% but is less than 85% of the calculated daily average limit, monitoring for the toxic pollutant will usually be included as a condition in the permit. If the average of the effluent data is equal to or greater than 85% of the calculated daily average limit, the permit will generally contain effluent limits for the toxic pollutant. The permit may specify a compliance period to achieve this limit if necessary.

Procedures found in the IP require review of the immediate receiving stream and effected downstream receiving waters. Further, if the discharge reaches a perennial stream or an intermittent stream with perennial pools within three-miles, chronic toxicity criteria apply at that confluence.

#### 5. Permit-Action - Water Quality-Based Limits

Regulations promulgated at 40 CFR §122.44(d) require limits in addition to, or more stringent than effluent limitation guidelines (technology based). State WQS that are more stringent than effluent limitation guidelines are as follows:

##### a. pH

Wastewater discharges from Outfall 001 flow into the Gulf of Mexico, Segment 2501, which has Texas WQS of 6.5 – 9.0 s.u. The pH limit below 6.5 temporarily occurring during an intermittent discharge within a permitted submerged mixing zone more than three nautical miles offshore in the Gulf of Mexico should not interfere with the reasonable use of the waters. The historic limitation range for pH of 6.0 to 9.0, as observed at the onshore measuring point is continued in the draft permit.

##### b. Narrative Limitations

Narrative protection for aesthetic standards will propose that surface waters shall be maintained so that oil, grease, or related residue will not produce a visible film or globules of grease on the surface or coat the banks or bottoms of the watercourse; or cause toxicity to man, aquatic life, or terrestrial life. The discharge shall not present a hazard to humans, wildlife, or livestock.

The following narrative limitations in the proposed permit represent protection of water quality which requires that:



“The effluent shall contain no visible film of oil or globules of grease on the surface or coat the banks or bottoms of the watercourse.”

c. Toxics

The CWA in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR §122.44 (d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criteria, the permit must contain an effluent limit for that pollutant.

A review of the application revealed that almost all priority pollutants were believed absent. In addition, Big Hill Strategic Petroleum reserve is a minor facility with intermittent discharges. Since this is a minor facility with intermittent discharge, water quality-based effluents limits, with the exception of pH are not included in the permit.

d. Per- and Poly- Fluoroalkyl substances (PFAS)

As explained at <https://www.epa.gov/pfas>, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations can be contributors of PFAS releases into the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Exposure to some PFAS above certain levels may increase risk of adverse health effects. EPA is collecting information to evaluate the potential impacts that discharges of PFAS from wastewater treatment plants may have on downstream drinking water, recreational and aquatic life uses.

Although the Texas Surface Water Quality Standards do not include numeric criteria for PFAS, the 2021 Texas Water Quality Standards narrative criterion for toxic substances at 307.4(d) states: “Surface waters must not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life.”

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, the draft permit requires that the facilities conduct once per permit term influent, effluent, and sludge sampling for PFAS the first full calendar year after the effective date of the authorization to discharge under the permit.

The purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of water quality-based effluent limits on a facility-specific basis. EPA is authorized to require this monitoring and reporting by CWA § 308(a), which states:

“SEC. 308. (a) Whenever required to carry out the objective of this Act, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation,

prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance; (3) any requirement established under this section; or (4) carrying out sections 305, 311, 402, 404 (relating to State permit programs), 405, and 504 of this Act— (A) the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other information as he may reasonably require;”.

EPA notes that there is currently not an analytical method approved in 40 CFR Part 136 for PFAS. As stated in 40 CFR § 122.44(i)(1)(iv)(B), in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters. Therefore, the draft permit specifies that until there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring shall be conducted using Draft Method 1633.

In October 2021, EPA published a PFAS Strategic Roadmap that described EPA’s commitments to action for 2021 through 2024. This roadmap includes a commitment to issue new guidance recommending PFAS monitoring in both state-issued and federally issued NPDES permits using EPA’s recently published analytical method 1633. In anticipation of this guidance, EPA has included PFAS monitoring in the draft permit using draft analytical method 1633. The draft Adsorbable Organic Fluorine CWA wastewater method 1621 can be used in conjunction with draft method 1633, if appropriate.

Draft Method 1633 is currently a single lab-validated method. EPA anticipates the method will be multi-lab validated in 2023. If the PFAS monitoring requirement begins before Draft Method 1633 is multi-lab validated, the current single lab validated Draft Method 1633 shall be used at that time, and then the multi-lab validated Draft Method 1633 shall be used once it is available.

#### Solids and Foam

The prohibition of the discharge of floating solids or visible foam in other than trace amounts is continued in the proposed permit. In addition, there shall be no discharge of visible films of oil, globules of oil, grease or solids in or on the water, or coatings on stream banks.

#### D. MONITORING FREQUENCY FOR LIMITED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity, 40 CFR §122.48(b), and to assure compliance with permit limitations, 40 CFR §122.44(i)(1). The monitoring frequencies are based on BPJ, taking into account the nature of the facility, the previous permit, and past compliance history.

The permittee is commended on achieving an overall annual site compliance rate of 100 % in 2019, 2020, and 2021. In 2022, two non-compliances occurred when two monthly samples for TSS and O&G were missed for Outfall 001.

The permittee requested that the Bio-monitoring samples currently on a quarterly schedule are placed on an annual schedule. This request is due to the 100 percent compliance the facility has maintained for Outfall 001 since 2015. Additionally, the Big Hill facility requested that oil and grease be removed as a parameter for Outfall 001 since the results for Oil & Grease have consistently been non-detectable for the Big Hill facility.

The quarterly Biomonitoring frequency is continued in the draft permit, with an option to reduce the frequency to yearly testing after the first four quarters yield no toxic effects. Oil & grease is a parameter commonly used to measure the presence of oil in an effluent and it is the BPJ of the permit writer that Oil & Grease is a parameter that should be monitored in the permit. The permittee is commended on achieving a 100% compliance for this parameter. Based on this, monitoring frequency established in the current permit for Oil & Grease is changed from monthly to quarterly monitoring requirements. Monitoring frequency for other parameters established in the current permit is continued in the draft permit.

#### E. WHOLE EFFLUENT TOXICITY TESTING

Biomonitoring is the most direct measure of potential toxicity which incorporates both the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity.

Accordingly, this permit requires that discharge to outfall 001 be monitored by a 7-day chronic toxicity test, with quarterly monitoring according to the provisions indicated in Parts I and II of this permit.

Since there has been no changes from the current permit, discharge from Outfall 001 shall continue to be monitored by a 7-day chronic toxicity test, with quarterly monitoring according to the provisions indicated in Parts I and II of this permit. The permit includes an option to reduce the testing frequency to yearly after the first four quarters yield no toxic effects. Critical dilution is 2.6% and dilution series is 1.1%, 1.5%, 2%, 2.6%, and 3.5%. Based upon the critical dilution of 2.6%, a 20 fps (5.96 m/s) maximum nozzle exit velocity, an 18 fps (5.49 m/s) minimum nozzle exit velocity and a discharge density of 1160 kg/m<sup>3</sup> limitations are continued in the draft permit. The limit shall continue to be computed as a 3-month rolling average of the discharge events. EPA notes that the permittee must comply with the nozzle exit velocity and discharge density.

The proposed permit continues the requirements to prohibit the use of corrosion inhibitors in the raw water during Presidential drawdown.

## **F. FINAL EFFLUENT LIMITATIONS**

See the draft permit for limitations.

## **VI. FACILITY OPERATIONAL PRACTICES**

### **A. WASTEWATER POLLUTION PREVENTION REQUIREMENTS**

The permittee shall institute programs directed towards pollution prevention. The permittee will institute programs to improve the operating efficiency and extend the useful life of the treatment system.

### **B. OPERATION AND REPORTING**

The permittee must submit Discharge Monitoring Report's (DMR's) quarterly, beginning on the effective date of the permit, lasting through the expiration date of the permit or termination of the permit, to report on all limitations and monitoring requirements in the permit.

## **VII. IMPAIRED WATER - 303(d) LIST AND TMDL**

According to the 2020 State of Texas 303(d) List for Assessed River/Stream Reaches Requiring Total Maximum Daily Loads (TMDLs), the receiving stream for Outfall 001 is listed for bacteria in water and mercury in edible tissue, under category 5c.

Category 5c implies that additional data or information will be collected and/or evaluated for one or more parameters before a management strategy is selected. In light of the nature of the system, the discharger is not likely going to contribute bacteria and mercury in edible fish tissue. Therefore, no additional requirements beyond the previously described technology-based or water quality-based effluent limitations and monitoring requirements, are established in the proposed permit.

## **VIII. ANTIDEGRADATION**

The Texas Commission on Environmental Quality, Texas Surface Water Quality Standards, Antidegradation, Title 30, Part 1, Chapter 307, Rule §307.5 sets forth the requirements to protect designated uses through implementation of the State WQS. The limitations and monitoring requirements set forth in the proposed permit are developed from the State WQS and are protective of those designated uses. Furthermore, the policy sets forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The permit requirements are protective of the assimilative capacity of the receiving waters, which is protective of the designated uses of that water. There are no increases of pollutants being discharged to the receiving waters authorized in the proposed permit.

## IX. ANTIBACKSLIDING

The proposed permit is consistent with the requirements and exemption to meet Antibacksliding provisions of the Clean Water Act, Section 402(o) and 40 CFR Part 122.44(i)(B), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless information is available which was not available at the time of permit issuance. The proposed permit maintains the limitation requirements of the previous permit for pH, velocity of discharge, density, oil and grease and WET for Outfall 001.

## X. ENDANGERED SPECIES

The effects of EPA's permitting action are considered in the context of the environmental baseline. The environmental baseline is established by the past and present impacts of all Federal, State, or private actions and other human activities in an action area; the anticipated impacts of all proposed Federal projects in an action area that have already undergone formal or early ESA §7 consultation; and the impact of State or private actions that are contemporaneous with the consultation in process (50 CFR §402.02).

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, at <http://ecos.fws.gov/ipac/wizard/chooseLocation!prepare.action>, 12 species are listed as endangered or threatened in Jefferson County. These species include: Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus*), West Indian Manatee (*Trichechus manatus*), the green sea turtle (*Chelonia mydas*), Kemp's ridley sea turtle (*Lepidochelys kempii*), hawksbill sea turtle (*Eretmochelys imbricate*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), Eastern Black Rail (*Laterallus jamaicensis* ssp. *jamaicensis*), Red-cockaded Woodpecker (*Picoides borealis*), Whooping Crane (*Grus americana*), Texas Trailing Phlox (*Phlox nivalis* ssp. *Texensis*).

A description of the species and its effects to the proposed permit follows:

### Piping Plover (*Charadrius melodus*)

Piping Plover is listed in Jefferson County as threatened. A small plover has wings approximately 117 mm; tail 51 mm; weight 46-64 g (average 55 g); length averages about 17-18 cm. Inland birds have more complete breast band than Atlantic coast birds. The non-breeding plovers lose the dark bands. The breeding season begins when the adults reach the breeding grounds in mid- to late April or in mid-May in northern parts of the range. The adult males arrive earliest, select beach habitats, and defend established territories against other males. When adult females arrive at the breeding grounds several weeks later, the males conduct elaborate courtship rituals including aerial displays of circles and figure eights, whistling song, posturing with spread tail and wings, and rapid drumming of feet. The plovers defend territory during breeding season and at some winter sites. Nesting territory may or may not contain the foraging area. Home range during the breeding season generally is confined to the vicinity of the nest. Plovers are usually found in sandy beaches, especially where scattered grass tufts are present, and sparsely vegetated shores and islands of shallow lakes, ponds, rivers, and impoundments.

Food consists of worms, fly larvae, beetles, crustaceans, mollusks, and other invertebrates. The plovers prefer open shoreline areas, and vegetated beaches are avoided. It also eats various small invertebrates. It obtains food from surface of substrate, or occasionally probes into sand or mud. Destruction of habitat, disturbance and increased predation rates due to elevated predator densities in piping plover habitat are described as the main reasons for this species' endangered status and continue to be the primary threats to its recovery. The remaining populations, whether on the breeding or wintering grounds, mostly inhabit public or undeveloped beaches. These populations are vulnerable to predation and disturbance.

Research of available material finds that the primary cause for the population decreases leading to threatened or endangered status for these species is destruction of habitat. Issuance of the permit will have no effect on this species, in that the discharge is not expected to lead to the destruction of habitat.

#### Red Knot (*Calidris Canutus rufa*)

Red Knot is listed as threatened in Jefferson County. Red Knot is a medium-sized shorebird and the largest of the "peeps" in North America, and one of the most colorful. It makes one of the longest yearly migrations of any bird, traveling 15,000 km (9,300 mile) from its Arctic breeding grounds to Tierra del Fuego in southern South America.

Their diet varies according to season; arthropods and larvae are the preferred food items at the breeding grounds, while various hard-shelled molluscs are consumed at other feeding sites at other times.

The Red Knot nests on the ground, near water, and usually inland. The nest is a shallow scrape lined with leaves, lichens and moss. Males construct three to five nest scrapes in their territories prior to the arrival of the females. The female lays three or more usually four eggs, apparently laid over the course of six days. Both parents incubate the eggs, sharing the duties equally. The incubation period last around 22 days.

The birds have become threatened as a result of commercial harvesting of horseshoe crabs in the Delaware Bay which began in the early 1990s. Delaware Bay is a critical stopover point during spring migration; the birds refuel by eating the eggs laid by these crabs (with little else to eat in the Delaware Bay).

#### West Indian Manatee (*Trichechus manatus*)

West Indian manatees are large, gray aquatic mammals with bodies that taper to a flat, paddle-shaped tail. They have two forelimbs, called flippers, with three to four nails on each flipper. Their head and face are wrinkled with whiskers on the snout. The manatee's closest relatives are the elephant and the hyrax. Manatees are believed to have evolved from a wading, plant-eating animal. The average adult manatee is about 10 feet long and weighs between 800 and 1,200 pounds.

Manatees can be found in shallow, slow-moving rivers, estuaries, saltwater bays, canals, and coastal areas — particularly where seagrass beds or freshwater vegetation flourish. Manatees are a migratory species.

Manatees are gentle and slow-moving animals. Most of their time is spent eating, resting, and traveling. Manatees are mostly herbivorous, however small fish and invertebrates can sometimes be ingested along with a manatee's normal vegetation diet.

West Indian manatees have no natural enemies, and it is believed they can live 60 years or more. As with all wild animal populations, a certain percentage of manatee mortality is attributed to natural causes of death such as cold stress, gastrointestinal disease, pneumonia, and other diseases. A high number of additional fatalities are from human-related causes. Most human-related manatee fatalities occur from collisions with watercraft. Other causes of human-related manatee mortality includes being crushed and/or drowned in canal locks and flood control structures; ingestion of fishhooks, litter, and monofilament line; and entanglement in crab trap lines. Ultimately, loss of habitat is the most serious threat facing manatees in the United States today.

#### Green Sea Turtle (*Chelonia mydas*)

Green Sea Turtle is found in Jefferson County. Sea turtles are graceful saltwater reptiles, well adapted to life in their marine world. With streamlined bodies and flipper-like limbs, they are graceful swimmers able to navigate across the oceans. When they are active, sea turtles must swim to the ocean surface to breathe every few minutes. When they are resting, they can remain underwater for much longer periods of time. Although sea turtles live most of their lives in the ocean, adult females must return to land in order to lay their eggs. Sea turtles often travel long distances from their feeding grounds to their nesting beaches. Human threats include oil spills, live bottom smothering with sediments and drilling fluids, dredging, coastal development, agricultural and industrial pollution, seagrass bed degradation, shrimp trawling and other fisheries, boat collisions, under water explosions, ingestion of marine debris, entanglement in marine debris, and poaching.

#### Kemp's Ridley Sea Turtle (*Lepidochelys kempii*)

Kemp's ridley sea turtle is found in Jefferson County. Kemp's ridley sea turtles are the smallest of all extant sea turtles. Adult Kemp's ridleys' shells are almost as wide as long. Neonatal Kemp's ridleys feed on the available sargassum and associated infauna or other epipelagic species found in the Gulf of Mexico. In post-pelagic stages, the ridley is largely a crab-eater, with a preference for portunid crabs. Age at sexual maturity is not known but is believed to be approximately 7-15 years, although other estimates of age at maturity range as high as 35 years. The major nesting beach for Kemp's ridleys is on the northeastern coast of Mexico. This location is near Rancho Nuevo in southern Tamaulipas. The species occurs mainly in coastal areas of the Gulf of Mexico and the northwestern Atlantic Ocean. Hunting of both turtles and eggs contributed to the decline of this species. Existing threats include development and human encroachment of nesting

beaches, erosion of beaches, vehicular traffic on beaches, fisheries, oil spills, floating debris, dredging, and explosive removal of old oil and gas platforms.

#### Hawksbill Sea Turtle (*Eretmochelys imbricata*)

Hawksbill sea turtle is found in Jefferson County. Hawksbill is a small to medium-sized sea turtle averaging approximately 2.8 feet in curved carapace length with a weight of approximately 176 pounds. Hawksbills reenter coastal waters when they reach approximately 20-25 cm carapace length. Coral reefs are widely recognized as the resident foraging habitat of juveniles, sub-adults and adults. This habitat association is undoubtedly related to their diet of sponges, which need solid substrate for attachment. The ledges and caves of the reef provide shelter for resting both during the day and night. Hawksbills are also found around rocky outcrops and high energy shoals, which are also optimum sites for sponge growth. Hawksbills are also known to inhabit mangrove-fringed bays and estuaries, particularly along the eastern shore of continents where coral reefs are absent. In Texas, juvenile hawksbills are associated with stone jetties. Hawksbills utilize both low- and high-energy nesting beaches in tropical oceans of the world. Both insular and mainland nesting sites are known. Hawksbills will nest on small pocket beaches and, because of their small body size and great agility can traverse fringing reefs that limit access by other species. They exhibit a wide tolerance for nesting substrate type. Nests are typically placed under vegetation. Threats to this species include poaching, oil spills, vessel anchoring and groundings, artificial lighting at nesting sites, mechanical beach cleaning, increased human presence, beach vehicular driving, entanglement at sea, ingestion of marine debris, commercial and recreational fisheries, watercraft collisions, sedimentation and siltation, and agricultural and industrial pollution.

#### Leatherback Sea Turtle (*Dermochelys coriacea*)

Leatherback sea turtle is found in Jefferson County. Leatherback is the largest living turtle and is so distinctive as to be placed in a separate taxonomic family, Dermochelyidae. The carapace is distinguished by a rubber-like texture, about 4 cm thick, and made primarily of tough, oil-saturated connective tissue. No sharp angle is formed between the carapace and the plastron, resulting in the animal being somewhat barrel-shaped. The front flippers are proportionally longer than in any other sea turtle. Nesting occurs from February - July with sites located from Georgia to the U.S. Virgin Islands. During the summer, leatherbacks tend to be found along the east coast of the U.S. from the Gulf of Maine south to the middle of Florida.

Leatherbacks become entangled in longlines, fish traps, buoy anchor lines and other ropes and cables. This can lead to serious injuries and/or death by drowning. Leatherback turtles eat a wide variety of marine debris such as plastic bags, plastic and styrofoam pieces, tar balls, balloons and plastic pellets. Effects of consumption include interference in metabolism or gut function, even at low levels of ingestion, as well as absorption of toxic byproducts. Leatherbacks are vulnerable to boat collisions and strikes, particularly when in waters near shore. Marine turtles are at risk when encountering an oil spill. Respiration, skin, blood chemistry and salt gland functions are affected.



### Loggerhead Sea Turtle (*Caretta caretta*)

Loggerhead sea turtle is found in Jefferson County. Loggerheads are the most abundant species in U.S. coastal waters and are often captured incidental to shrimp trawling. Shrimping is thought to have played a significant role in the population declines observed for the loggerhead. Maturity is reached at between 16-40 years. Mating takes place in late March-early June, and eggs are laid throughout the summer.

Loggerheads are circumglobal, inhabiting continental shelves, bays, estuaries, and lagoons in temperate, subtropical, and tropical waters. In the United States, killing of nesting loggerheads is infrequent. However, in a number of areas, egg poaching is common. Erosion of nesting beaches can result in loss of nesting habitat. Loggerhead turtles eat a wide variety of marine debris such as plastic bags, plastic and styrofoam pieces, tar balls, balloons and raw plastic pellets. Effects of consumption include interference in metabolism or gut function, even at low levels of ingestion, as well as absorption of toxic byproducts. Turtles are taken by gillnet fisheries in the Atlantic and Gulf of Mexico. Several thousand vessels are involved in hook and line fishing for various coastal species. Sea turtles are at risk when encountering an oil spill. Respiration, skin, blood chemistry and salt gland functions are affected. Pesticides, heavy metals and PCB's have been detected in turtles and eggs, but the effect on them is unknown. Turtles have been caught in saltwater intake systems of coastal power plants. The mortality rate is estimated at 2%. Underwater explosions can kill or injure turtles and may destroy or damage habitat. The effects of offshore lights are not known. They may attract hatchlings and interfere with proper offshore orientation, increasing the risk from predators. Turtles get caught in discarded fishing gear. The number affected is unknown, but potentially significant.

### Eastern Black Rail (*Laterallus jamaicensis* ssp. *Jamaicensis*)

The Eastern Black Rail is a small, sparrow-sized marsh bird that is the smallest rail in North America. It is also known as the "feathered mouse". The Eastern Black Rail is found in eastern North America, the Caribbean, and Central America.

The Eastern Black Rail is about 4 to 6 inches long and has a wingspan of 8.7 to 11 inches. It weighs about 1.2 ounces. The Eastern Black Rail is mostly gray to black with a black bill and red eyes. It has some brown feathers on its back and white spots on its dark wing feathers. The Eastern Black Rail is partially migratory. It breeds in the United States and winters further south. The northern populations winter in South Florida, along the Gulf Coast, and in parts of the Caribbean.

The Eastern Black Rail eats a variety of small items in its habitat, including insects, spiders, snails, and small crustaceans. It also eats many seeds of bulrush and other marsh plants, especially in winter.

The Eastern Black Rail is threatened under the U.S. Endangered Species Act because of the rapid disappearance of wetlands which has caused a steep decline in their populations. Sea-level rise

and more frequent extreme weather events (both associated with climate change) put the rail's habitat at further risk.

#### Red-Cockaded Woodpecker (*Picoides borealis*)

Red-cockaded Woodpeckers are birds with small woodpeckers with short, straight bills. Despite their name, they are largely black and white, with a large, bright-white cheek patch and a bold black malar stripe forming the lower border of the cheek. Males have a tiny, nearly invisible red streak ("cockade") at the upper border of the cheek. The back has strong horizontal black-and-white bars.

Red-cockaded Woodpeckers live in family groups and cooperate to raise young. They often forage in small groups and can be quite vocal. They excavate nest and roost cavities in living pine trees, pecking holes in the bark to keep a flow of sticky pitch around the nest cavity. This endangered species is a habitat specialist that is strongly tied to old-growth pine forests that burn frequently, leaving the understory mostly clear of younger pines and hardwoods. They were once common in vast tracts of longleaf pine; now they also occur in loblolly, slash, and some other pine stands in the southeastern pine flatwoods.

#### Whooping Crane (*Grus americana*)

The tallest bird in North America, the Whooping Crane breeds in the wetlands of Wood Buffalo National Park in northern Canada and spends the winter on the Texas coast at Arkansas National Wildlife Refuge near Rockport. Cranes live in family groups made up of the parents and 1 or 2 offspring. In the spring, Whooping Cranes perform courtship displays (loud calling, wing flapping, and leaps in the air) as they get ready to migrate to their breeding grounds. Whooping Cranes are nearly 5 feet tall. They eat Blue crabs, clams, frogs, minnows, rodents, small birds, and berries. They are found in large wetland areas. Cranes are considered sacred in many parts of the world. In China, they are a symbol of long life.

Whooping Cranes are endangered because much of their wetland habitat has been drained for farmland and pasture. Current threats to wild cranes include collisions with manmade objects such as power lines and fences, accidental shooting, predators (especially predation of flightless chicks), specimen collection, human disturbance, disease and both West Nile virus and H5N1 avian influenza virus, habitat destruction and contamination, severe weather (drought), and a loss of two-thirds of the original genetic material. (CWS and USFWS, 2007)

#### Texas Trailing Phlox (*Phlox nivalis* ssp. *Texensis*)

Texas trailing phlox is a rare, endangered, evergreen plant that grows in the Pineywoods region of southeastern Texas. It is a subshrub with thin, needle-like leaves and pink to magenta flowers. The stems of Texas trailing phlox spread horizontally and then vertically to form a small shrub that is 10-30 cm tall.

Texas trailing phlox is a member of the Polemoniaceae family. It is native to the southeastern states, including Texas, Utah, and Michigan. It is found in only three counties in Texas, where it is known from only a couple of sites. It can be found on deep sands in longleaf pine savannahs and certain open longleaf pine-hardwood forests. Texas trailing phlox is fire-dependent and grows whenever temperature and moisture conditions are favorable.

Known threats to the species included low population numbers coupled with a limited geographic distribution, lack of regulatory protections, and habitat disturbance. Housing developments, silvicultural practices, fire suppression, herbicide exposure, and industry construction have all contributed to habitat loss for this sensitive species. Additional stressors include off-road vehicle use, illegal dumping, burning of debris, and commercial take of plants.

## SPECIES FOUND IN THE GULF OF MEXICO

### Blue Whale (*Balaenoptera musculus*)

The blue whale is the largest of the whales and, in the North Atlantic, can grow to 89 feet in length and weigh nearly 300,000 pounds. Krill is the main food of this species. They range from the subtropics to Baffin Bay and the Greenland Sea but are rarely seen in continental shelf waters along the eastern coast of the United States. Blue whales have been known to occasionally stray into the Gulf of Mexico. The historic decline in this species is thought to be the result of hunting, which has since ceased. On-going human impacts include collisions with ships, disturbance by vessels, entrapment and entanglement in fishing gear, acoustic and chemical pollution, and military operations.

### Finback Whale (*Balaenoptera physalus*)

The finback whale is the second largest whale species, growing to more than 75 feet in length and 150,000 pounds. This species is found throughout the North Atlantic from the Gulf of Mexico northward to the edges of the polar ice cap and tend to occur over the continental shelf and slope in greater than 650 feet of water. Fin whales are thought to migrate seasonally and feed in more northerly latitudes while fasting in southerly latitudes. Their diet consists of krill, capelin, herring, and sand lance. Like the other endangered whale species, the reason for decline of the finback whale is historic hunting. Existing human impacts include collisions with ships, disturbance of vessels, entrapment and entanglement in fishing gear, habitat degradation, and military operations. Presently, hunting in the North Atlantic only occurs in Greenland. Under the International Whaling Commission's aboriginal subsistent whaling authorization 20 are allowed to be taken each year.

### Humpback Whale (*Megaptera novaeangliae*)

The humpback whale grows in length up to 59 feet and can weigh up to 97,000 pounds. Diet of the humpback whale consists of krill, other large zooplankton, and small schooling fish. This species is known to occur in all ocean basins worldwide and it generally inhabits areas over the

continental shelves, their slopes, and near some oceanic islands. Humpback whales are migratory, summering in higher latitudes (35 to 65 degrees) and wintering in tropical or temperate latitudes (10 to 23 degrees). Feeding is thought to mainly occur in the more productive summer range. They are not thought to normally inhabit the Gulf of Mexico. The only known observations in the Gulf were off the Cuban coast in 1918 and Tampa Bay in 1962 and 1989. Historic hunting led to the decline of the species. Existing causes of human impact are entrapment and entanglement in fishing gear, collisions with ships, and acoustic disturbance from ships, and aircraft.

#### Sei Whale (*Balaenoptera borealis*)

In the western North Atlantic, sei whales are known to occur from western Greenland to the southeastern United States. Like other whales, they tend to spend the summer in the northern latitudes and winter farther south. They tend to prefer deep water and can be found over the continental slope, basins between banks, and submarine canyons. Sei whales do not normally enter semi-enclosed waters such as the Gulf of Mexico or the Gulf of Saint Lawrence. However, there are recorded strandings along the northern coast of the Gulf of Mexico. Their preferred food consists of calanoid copepods and krill. Major human impacts to the species include collisions with ships, disturbance from vessels, entrapment and entanglement in fishing gear, and military operations.

#### Sperm whale (*Physeter macrocephalus*)

The sperm whale is the largest of the toothed whales average 62 feet in length and can weigh as much as 120,000 pounds. They feed on a large deep-water squid and a variety of fish. This species occurs throughout most of the oceans from the tropics to the polar ice caps. Sperm whales generally occupy deep waters and are rarely seen over the continental shelf. Like the other whale species, historic hunting resulted in their decline. Existing human impacts are entrapment and entanglement in fishing gear, collisions with ships, and acoustic disturbance from ships, and aircraft.

#### Gulf Sturgeon (*Acipenser oxyrinchus desotoi*)

The gulf sturgeon, an anadromous fish, is found in riverine environments during the summer months and migrates to warmer water in estuaries and the near shore Gulf of Mexico during winter. Adult Gulf sturgeon usually spends approximately three quarters of the year in rivers and one quarter (cooler months) in estuaries or Gulf of Mexico waters. Younger Gulf sturgeon does not tend to migrate to open waters of the Gulf but remain in riverine and estuarine environments. The fish has a sub-cylindrical body and a snout extending from the lower surface of the head which is blade-like in shape. Adult Gulf sturgeon generally grows to 227 centimeters in length. This sub-species is a bottom feeder tending to consume amphipods, crustaceans, oligochaetes, polychaetes and chironomid and ceratopogonid larvae. They have been found to eat during the three to four months they are in the marine environment and fast the remainder of the year while in the freshwater environment. Commercial fishing and habitat destruction are the main causes for the decline of this species. Means of habitat destruction include construction of dams which

interfere with migration, dredging, and decreased ground water flows.

The mammals are usually found near shores, bays, lagoons, river mouth/tidal rivers and shallow water. Shallow coastal waters, estuaries, bays, rivers, and lakes; throughout most of the range, appears to prefer rivers and estuaries to marine habitats.

The mammal is primarily dependent upon submerging, emerging, and floating vegetation; diet varies according to plant availability; may opportunistically eat other foods (e.g., acorns in early winter in Florida, fishes caught in gill nets in Jamaica).

It is threatened by high mortality often associated with human activity (especially collisions with boats in Florida), in conjunction with low reproductive rate and habitat loss. It is vulnerable to catastrophic mortality when gathered in large numbers at winter aggregation sites in Florida. Some die when caught in water control structures. Hunting is responsible for the decline throughout much of the range. Low tolerance of human disturbance in calving areas, but moderately tolerant of swimmers in wintering sites. It has potential as weed/plant consumer in clogged waterways; benefits from some human disturbances, such as thermal pollution.

#### Potential Effects of Discharges Authorized by this Permit Renewal

##### Turtles

Many of the threats to listed threatened or endangered turtle species are related to activities in coastal areas and will not be affected by the proposed discharges. Those threats include: poaching of turtles and eggs, development and human encroachment of nesting beaches, erosion of beaches, vehicular traffic on beaches, beach armoring, artificial lighting, mechanical beach cleaning, marina and dock development, coastal development, increased human presence, dredging, non-native vegetation, seagrass bed degradation, and agricultural pollution. Other threats which may occur in the area covered under the permit, which are not related to the proposed discharges are: entanglement at sea, commercial and recreational fisheries, and shrimp trawling. The discharges proposed to be authorized by the permit renewal will not affect those threats to threatened or endangered turtle species.

Threats to turtle species which could be related to Petroleum Bulk Stations and Terminals in the area covered under this permit include oil spill during brine discharge, industrial pollution, and boat collisions. Of those potential threats, only oil spill during brine discharge is directly relevant to the proposed discharges. The proposed renewal contains controls to limit the quantity of pollutants which are discharged and prevent toxic effects in the receiving waters. The proposed permit has limits for Oil & Grease, Total Suspended Solids, Total Dissolved Solids, Biochemical Oxygen Demand, flow and pH. The proposed permit is written to include limitations and monitoring requirements on those parameters as a continuation of the conditions in the current permit.

## Whales

The reason for decline in numbers of most of the whale species is historic hunting. Hunting has ceased in the Gulf of Mexico and North Atlantic with the exception of a small amount of subsistence hunting for fin whales near Greenland.

The existing threats to the endangered or threatened whale species include entrapment or entanglement in fishing gear, collision with ships, habitat destruction such as dredging or sewer discharges, disturbance by vessels, acoustic and chemical pollution, military operations, and acoustic disturbance from ships, and aircraft. Reissuance of the proposed permit will have no effect on the threats of entrapment or entanglement in fishing gear or military operations. Authorization of the proposed discharges will not increase or decrease the potential effects of entanglement or entrapment in fishing gear or military operations. The other threats, which include collision with ships, acoustic disturbance, habitat destruction, disturbance by vessels, and chemical pollution, can be indirectly associated with Bulk Petroleum Storage and Terminals.

Chemical pollution is noted by the recovery plan for the blue whale as a threat to that species. It is not listed in the recovery plans for other whale species as a threat to those species. Although the discharges which are proposed to be authorized will contain pollutants, sufficient controls will be required to protect the environment and mitigate potential effects on listed threatened or endangered whales.

The threat to listed whale species from collision with or disturbance from vessels is indirectly related to the proposed authorization of the discharges.

Habitat destruction is a potential threat to several of the listed threatened or endangered whale species. The proposed permit will not affect the habitat of the listed threatened or endangered species.

## Fish

Discharges proposed to be authorized by this permit renewal will not affect the main human induced threats to the Gulf sturgeon of habitat destruction or commercial fishing. Causes of habitat degradation are construction of dams which interfere with migration, ground water usage which diminish the natural flow to rivers and dredging. Those factors occur in inland waters and not in the area of the Gulf of Mexico covered under this permit. Commercial fishing is also not expected to change as a result of the discharges proposed to be authorized by this renewal. Adult sturgeon may occasionally occur, during the winter months. However, those discharges are highly intermittent and short term in nature. The proposed permit contains requirements for both new discharges to limit potential toxic effects to aquatic species, including the Gulf sturgeon.

## Determination

In a consultation letter dated December 11, 2017, Consultation Code:02ETTX00-2018-SL1-0450, Event Code:02ETTX00-2018-E-0096, the list of threatened and endangered species that may occur in the project location was sent to the permittee. The Service also determined that there is no critical habitat within the project area under its jurisdiction. Furthermore, the U.S. Department of Energy prepared an Environmental Assessment (EA), signed April 25, 2018, has determined that the proposed actions will not impact any of the analyzed environments including Ecological Resources (includes threatened and endangered species). Based on information described above, EPA Region 6 has determined that discharges proposed to be authorized by this permit renewal will not affect the Gulf sturgeon (*Acipenser oxyrinchus desotoi*), blue whale (*Balaenoptera musculus*), finback whale (*Balaenoptera physalus*), sei whale (*Balaenoptera borealis*) humpback whale (*Megaptera novaeangliae*) and sperm whale (*Physeter macrocephalus*), Kemp's ridley turtle (*Lepidochelys kempii*), loggerhead turtle (*Caretta caretta*), leatherback turtle (*Dermochelys coriacea*), hawksbill turtle (*Eretmochelys imbricata*), green turtle (*Chelonia mydas*), nor is the proposed action likely to result in destruction or adverse modification of designated critical habitat.

The permit renewal reflected here does not change the nature or volume of the pollutants from the current. EPA is unaware, at this time, of any service concerns regarding this discharge and believes that the change in compliance period will have no effect on listed species and designated critical habitat. The permit has retained the limitations and conditions of the expiring permit. EPA believes these limitations are adequate to protect the listed species for Jefferson County and the Gulf of Mexico.

The standard reopener clause in the permit will allow EPA to reopen the permit and impose additional limitations if it is determined that changes in species or knowledge of the discharge would require different permit conditions.

Operators have an independent ESA obligation to ensure that any of their activities do not result in prohibited "take" of listed species. Section 9 of the ESA prohibits any person from "taking" a listed species, e.g., harassing or harming it, with limited exceptions. See ESA Sec 9; 16 U.S.C. §1538. This prohibition generally applies to "any person," including private individuals, businesses and government entities. Operators who intend to undertake construction activities in areas that harbor endangered and threatened species may seek protection from potential "take" liability under ESA section 9 either by obtaining an ESA section 10 permit or by requesting coverage under an individual permit and participating in the section 7 consultation process with the appropriate FWS or NMFS office. Operators unsure of what is needed for such liability protection should confer with the appropriate Services.

The standard reopener clause in the permit will allow EPA to reopen the permit and impose additional limitations if it is determined that changes in species or knowledge of the discharge would require different permit conditions.

**XI. OCEAN DISCHARGE CRITERIA EVALUATION (40 CFR PART 125)**

The permittee had previously prepared an Ocean Discharge Criteria document (see *Ocean Discharge Criteria Document for Big Hill Salt Dome, Jefferson County, Texas, December 1982*) and addressed each of the ten factors considered in the determination of unreasonable degradation of marine environment. These factors include: (1) Potential for bioaccumulation or persistence of the pollutants to be discharged; (2) The potential transport of such pollutants by biological, physical or chemical processes; (3) The composition and vulnerability of the biological communities which may be exposed to such pollutants including the presence of unique species or communities of species, the presence of species identified as endangered or threatened pursuant to the Endangered Species Act or the presence of those species critical to the structure or function of the ecosystem such as those important for the food chain; (4) The importance of the receiving water area to the surrounding biological community, including the presence of spawning sites, nursery/forage areas, migratory pathways or areas necessary for other functions or critical states in the life cycle of an organism; (5) The existence of special aquatic sites including but not limited to marine sanctuaries and refuges, parks, national and historic monuments, national seashores, wilderness areas and coral reefs; (6) The potential impacts on human health through direct and indirect pathways; (7) Existing or potential recreational and commercial fishing, including fin fishing and shell fishing; (8) Any applicable requirements of an approved Coastal Zone Management Plan; (9) Such other factors relating to the effects of the discharge as may be appropriate, and (10) marine water quality criteria developed pursuant to Section 304 (a)(1).

Since the proposed permit contains limitations which will protect water quality and in general reduce the discharge of toxic pollutants to the marine environment, the Region finds that discharges proposed to be authorized by the permit will not cause unreasonable degradation of the marine environment. In addition, based on the Ocean Discharge Criteria document as well as the results of the latest DMR, Big Hill brine discharge, operating in compliance with the permit, will not cause unreasonable degradation of the marine environment. However, the permit shall be modified or revoked at any time if, on the basis of any new data, the director determines that continued discharges may cause unreasonable degradation of the marine environment.

**XII. MAGNUSON-STEVENSON FISHERIES CONSERVATION & MANAGEMENT ACT**

The Magnuson-Stevens Fisheries Conservation and Management Act require federal agencies proposing to authorize actions that may adversely affect essential fish habitat to consult with National Marine Fisheries Service (NMFS). The entire Gulf of Mexico has been designated Essential Fish Habitat. EPA has determined that this permit issuance will not adversely affect essential fish habitat. The Agency will seek concurrence from NMFS before the final permit is issued.



### **XIII. COASTAL ZONE MANAGEMENT ACT**

EPA has determined that the activities which are proposed to be authorized by this permit reissuance are consistent with the local and state Coastal Zone Management Plans. The proposed permit and consistency determination was made by EPA.

The proposed permit limits are consistent with the TCEQ's Water Quality Management Plan for 2501 (Gulf of Mexico).

### **XIV. HISTORICAL AND ARCHEOLOGICAL PRESERVATION CONSIDERATIONS**

According to supplemental information submitted by the permittee, the Texas Historical Commission responded in a letter dated August 15, 2012, stating that the project may proceed without any further consultation. The issuance of the permit should have no impact on historical and/or archeological sites since no significant archeological deposits are encountered during construction and development of the property.

### **XV. COMPLIANCE HISTORY**

Monitoring frequency reduction was considered. The permittee is commended on achieving an overall annual site compliance rate of 100 % in 2019, 2020, and 2021. In 2022, two non-compliances occurred when two monthly samples for TSS and O&G were missed for Outfall 001.

The permittee requested that the Bio-monitoring samples currently on a quarterly schedule are placed on an annual schedule. This request is due to the 100 percent compliance the facility has maintained for Outfall 001 since 2015. Additionally, the Big Hill Facility requested that oil and grease is removed as a parameter for Outfall 001 since the results for Oil & Grease have consistently been non-detectable for the Big Hill Facility.

The quarterly Biomonitoring frequency is continued in the draft permit. Oil & grease is a parameter commonly used to measure the presence of oil in an effluent and it is the BPJ of the permit writer that Oil & Grease is a parameter that should be monitored in the permit. The permittee is commended on achieving a 100% compliance for this parameter. Based on this, monitoring frequency established in the current permit, Oil & Grease is changed from monthly to quarterly monitoring requirements. Monitoring frequency for other parameters established in the current permit is continued in the draft permit.

### **XVI. PERMIT REOPENER**

The permit may be reopened and modified during the life of the permit if relevant portions of the Texas WQS are revised or remanded. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the WQS are either revised or promulgated. Should the State adopt a new WQS, and/or develop a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that approved State standard and/or water quality management plan, in accordance with 40 CFR §122.44(c). Modification of the permit is subject to the provisions of 40 CFR §124.5.

**XVII. VARIANCE REQUESTS**

No variance requests have been received.

**XVIII. CERTIFICATION**

The permit is in the process of certification by the Railroad Commission of Texas following regulations promulgated at 40 CFR 124.53. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service prior to the publication of that notice.

**XXIII. ADMINISTRATIVE RECORD**

The following information was used to develop the proposed permit:

**A. APPLICATION**

An NPDES Application for a Permit to Discharge (Form 1 & 2C) dated July 24, 2023, and received on August 09, 2023.

**B. REFERENCES**

The State of Texas Water Quality Inventory, 13th Edition, Publication No. SFR-50, Texas Commission on Environmental Quality, December 1996.

"Implementation of the Texas Commission on Environmental Quality Standards via Permitting," Texas Commission on Environmental Quality, June 2010.

Texas Surface Water Quality Standards, 30 TAC Sections 307.1 - 307.9, effective March 18, 2021.

<http://ecos.fws.gov/ipac/wizard/chooseLocation!prepare.action>,

<http://www.nmfs.noaa.gov/pr/species/fish/smalltoothsawfish.htm>

<http://www.natureserve.org/explorer/servlet/NatureServe?searchName=Pristis+pectinata>

<http://www.nmfs.noaa.gov/pr/species/invertebrates/elkhorncoral.htm>

<https://www.fws.gov/species/texas-trailing-phlox-phlox-nivalis-ssp-texensis>

**C. 40 CFR CITATIONS**

Sections 122, 124, 125, 133, and 136

D. MISCELLANEOUS CORRESPONDENCE

Letter from Brent Larsen, EPA, to FLUOR Federal Petroleum Operations dated September 6, 2023, informing applicant that its' NPDES application received August 09, 2023, is administratively complete.

Emails from LaDonna Jeanmarie, Fluor Federal Petroleum Operations, LLC to Maria Okpala, EPA dated August 31, 2023, and August 15, 2023, on additional permit application information.