



United States Department of the Interior

NATIONAL PARK SERVICE
Padre Island National Seashore
P. O. Box 181300
Corpus Christi, Texas 78480-1300



IN REPLY REFER TO:

To: Project Files, BNP Petroleum Corporation, Plan of Operations to Drill and Produce the Dunn-Peach #1 Well, and the Supplement to the Plan of Operations to Drill and Produce the Dunn-Peach #2 through #6 Wells

From: Superintendent

Through: Padre Island National Seashore Interdisciplinary Team

Subject: Adequacy of National Environmental Policy Act Documentation related to the Dunn-Peach #7 Well

Project Description

BNP Petroleum Corporation (BNP) proposes to drill the Dunn-Peach #7 natural gas well from an existing wellpad located within Padre Island National Seashore. Six wells have been drilled on the existing wellpad over the past three years. The proposed drilling and production of the Dunn-Peach #7 well would occur in the same manner as described in BNP's plan of operations and supplemental for the Dunn-Peach #1 through #6 wells.

Location of the Well:

The existing wellpad for the Dunn-Peach #1 through #6 wells is located 153.66 feet from the north line and 425.5 feet from the east line (Boyles Meander Line) of the Nicholas and Juan Jose Balli Survey, Abstract-10, Kleberg County, Texas. This wellpad is 6.9 miles south of the end of Park Road 22 and 6,400 feet west of the Gulf of Mexico.

The global positioning system (GPS) measurements based on Texas State Plane Coordinate System of 1927, Texas South Zone, for the surface and bottom-hole locations of the proposed Dunn-Peach #7 well is as follows:

Dunn-Peach #7:

Surface location:	X = 2,367,059 E	Y = 593,612 N
Bottom-hole location:	X = 2,367,844 E	Y = 599,133 N
True Vertical Depth (TD):	10,200 feet	
Measured Vertical Depth (MVD):	12,290 feet	

The proposed well would be drilled into privately-owned minerals lying beneath the park (Figure 1).



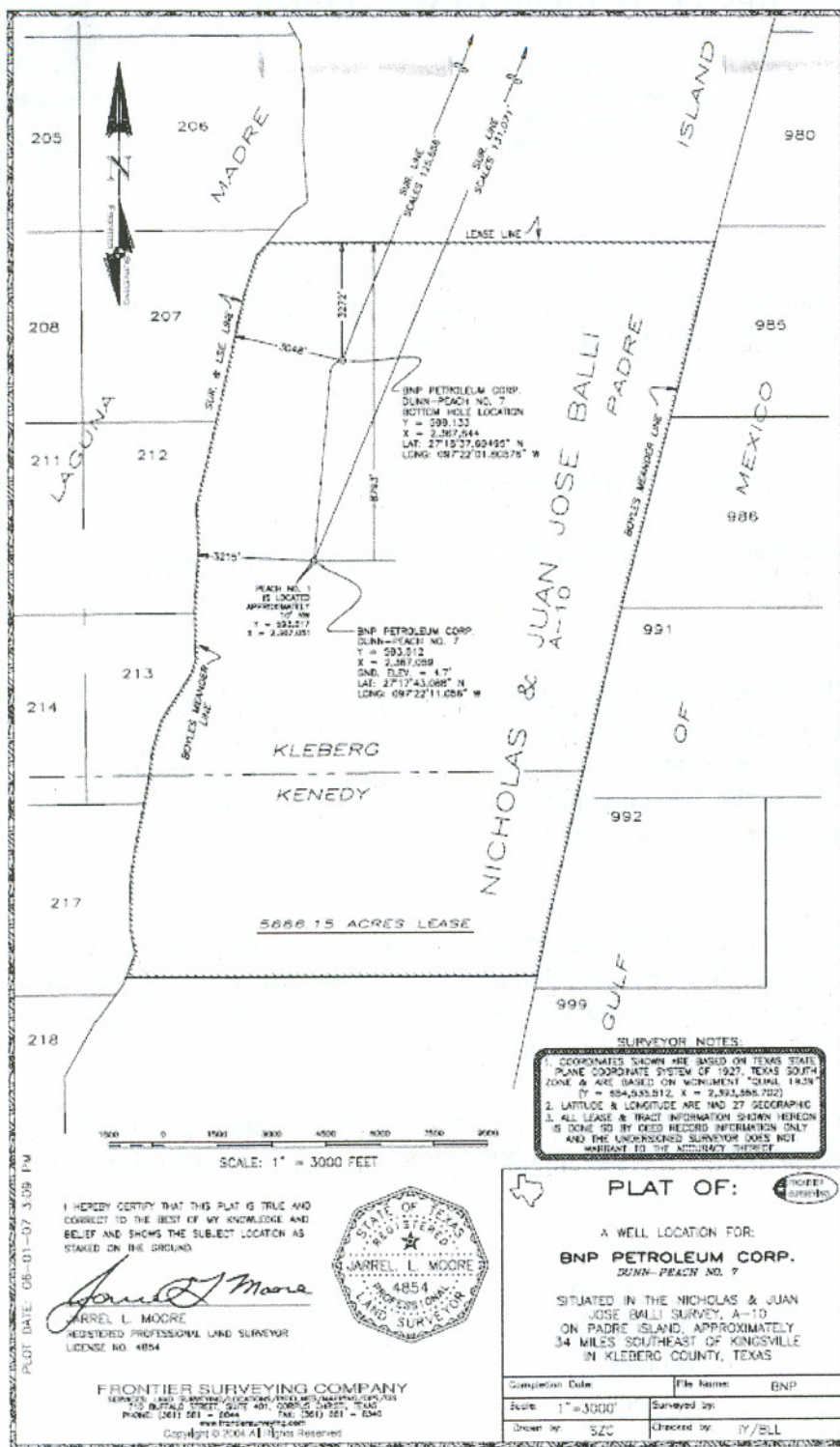


Figure 1. Proposed Bottomhole Location for the Dunn-Peach #7 Well.

Use of Water for Drilling:

Freshwater needed during the Dunn-Peach #7 drilling operation will be obtained from the existing BNP A-8 water well, which was utilized during the drilling of the Dunn-Peach #1 through #6 wells. A synthetic oil-based mud and a closed-loop system will be utilized to

Access:

All vehicles used during well drilling and production operations would enter the park via Park Road 22 and then proceed 6.9 miles along the Gulf Beach to a gated dune pass and the existing shell/caliche Pan Am Road that extends approximately four miles to the Dunn-Peach #1-6 wellpad.

Surface Location:

BNP's original Dunn-Peach #1 through 6 wellpad was selected because it avoided or minimized adverse impacts to wetlands, tidal flats, dunes, and other sensitive resource areas. The utilization of a previously developed site reduces the impacts to the park and exhibits best management practices. The existing wellpad is 3.52 acres and includes a 3-foot high berm around the perimeter of the pad area for containment.

Once drilling operations cease on the existing pad, the well pad will be reduced to 1.5 acres, and the previously developed 2.02 acres will be reclaimed to original pre-construction condition including representative elevation contours and vegetation abundance and composition.

minimize water requirements. A submersible pump powered by a generator will be installed in the well. A storage tank will be placed near the water well and a 3-inch polypropylene line will be laid along the access road to the Dunn-Peach drill site. Water will be pumped into the tank and transferred by a surface pump to the drill site via the polypropylene line. The water will be stored in the rig's water tank and, if necessary, an additional fractionating tank will be utilized on location.

Based on the water consumption for the Dunn-Peach #1 well in 2003, approximately 7,360 barrels (309,120 gallons) of water will be used to drill the Dunn-Peach #7 well.

Production Facility:

All final production, handling, and sales metering facilities will be located at BNP's Dunn-McCampbell Lease A-4 site developed for the Dunn-Peach #1 well. No additional tanks or production equipment beyond those approved in the original Plan should be necessary. The production unit may be resized per future volume demands; however, this would not affect the overall site size and general equipment layout. A well test separator was added during the drilling of Dunn-Peach #1 through #6 and will be used in lieu of an individual flow line for the new well. The test separator located on the wellpad is equipped with gas, oil, and water meters, and is tied into the individual wellheads by a header pipe system and discharged into the flow line(s) leaving the location. As the new well is added to the system, this test unit can be utilized to measure the well's production volume, which is necessary for royalty and production allocations. The use of the test unit eliminates the need for installing an individual flowline when a new well is added to the system. This system for production measurement and allocation is currently approved and widely used by other state and federal agencies for "confined" operations throughout the Gulf of Mexico.

The second option for transporting full wellstream (oil, water, and gas) production from the well head to the facility site is trenching a new ditch within the existing pipeline corridor and laying a flowline to accommodate the well. This option allows maximum output from the well whereas the test unit option allows the stronger well(s) to dominate the flow system until all pressures in the reservoir are equal. Reservoir and production data acquired from the on-line operations of the Dunn-Peach #1 through #6 wells will help determine the best option for wellstream transport.

The selection of the most appropriate transport of wellstream products will be based on the flow rates of the existing wells and the Dunn-Peach #7 well. Production from this well could continue for up to 20 years.

Pipeline:

BNP's Dunn-Peach #1 through #6 wells are currently tied into an existing AEP gas transport pipeline. The Dunn-Peach #7 well will be connected to the existing AEP pipeline either through the well test unit already connected to the pipeline or through an additional flowline if needed. Construction of a new flowline will occur within the existing access road/flowline route, which is approximately 3,700 feet long and 20-feet wide. A ditch of approximately 24 inches wide and 42 inches deep will be dug from the well pad to the AEP pipeline tie-in point.

Reclamation Plan:

As soon as possible after completion of approved operations but no later than six (6) months thereafter unless the Regional Director authorizes a longer period of time, BNP will initiate reclamation [36 CFR 9.39(a)(2)]. Reclamation will follow both the drilling and production phases of operations. After drilling the well, and if the well is placed into production, the well pad size will be reduced to 1.5 acres.

At the completion of production operations, existing wells will be plugged, and all above ground structures, equipment, and other man-made debris resulting from operations will be removed; and any contaminating substances will be removed or neutralized [36 CFR 9.39 (a)(2)]. The pad and road areas will be re-contoured as near as possible to the original contour. The re-contoured ground will be fertilized at 40 pounds per acre of 30/0/10 (N-P-K) fertilizer, the area ripped to 18 inches, and mulched with native hay containing seeds from the previously existing vegetation. During annual monitoring efforts, undesirable species will be controlled either by herbicide application or hand/tool removal, as approved by the NPS. Restored areas will be monitored annually until 70 percent coverage of targeted species is achieved. An annual report will be submitted to the park documenting restoration activities and results. Monitoring will cease after 70 percent of the original vegetative coverage of three target species, seacoast bluestem (*Schizachyrium scoparium* var. *littoralis*) and gulfdune paspalum (*Paspalum monostachyum*), and narrow-leaf sumpweed (*Iva angustifolia*) was achieved or after the site has been approved by the park Superintendent.

Description of Previous Compliance Documentation

Two Environmental Assessments (EA's) were written for operations that precede the Dunn-Peach #7 well. In October 2003, an EA was written for BNP's plan of operations covering the drilling and production of the Dunn-Peach #1 well that analyzed the construction of the 2.28-acre wellpad and access road, assessed the impacts on park resources and visitor experience, and initiated consultation with appropriate federal agencies including the U.S. Fish and Wildlife Service (FWS) and the U.S. Army Corps of Engineers. BNP's plan of operations, along with the EA and draft wetlands and floodplains statements of findings, were made available for a 30-day public review and comment period from the publication of a notice of availability in the *Federal Register*. The EA and draft statements of findings were distributed to the park mailing list. The review generated public interest from the environmental community over the adequate protection of threatened and endangered species. Comments were addressed and a FONSI was approved in December 2003, which included additional mitigation measures to minimize impact to park resources and visitor experience. The FWS concurred with the mitigation measures imposed by the NPS and a Biological Opinion was developed for the Dunn-Peach #1 well. The opinion provided BNP with an Incidental Take Permit allowing the take of two adult Kemp's ridley sea turtles. The drilling of the Dunn-Peach #1 well did not result in a take of Kemp's ridley sea turtle.

In November 2004, the NPS prepared a second EA covering BNP's supplement to the Peach #1 plan of operations to drill and produce the Dunn-Peach #2 through #6 wells. This EA analyzed the impacts associated with the drilling of five additional wells and a 1.24-acre pad expansion to accommodate the new wells. BNP's supplemental plan of operations, along with the EA and a draft floodplains statement of findings, were made available for a 30-day public review and comment period from the publication of a notice of availability in the *Federal Register*. The EA and draft statement of findings were distributed to the park mailing list. This review again generated interest from the environmental community over the protection of threatened and endangered species and gas drilling in a unit of the National Park System. Comments were addressed and a FONSI was approved on January 25, 2005. Mitigation measures were required by the NPS to minimize impact on park resources and visitor experience. Consultation with affected agencies occurred and an amended Biological Opinion was developed by the FWS. The Dunn-Peach #1 Incidental Take Permit was amended to provide BNP with the same take level. The drilling of the additional five wells did not result in a take of Kemp's ridley sea turtle.

The environmental assessments described that the following environmental impacts would result from the drilling and production of the Peach #1, and the Peach #2 through #6 Wells:

Impact Analysis

Impact Topic	Alternative B: Proposed Action
Air Quality	Drilling and producing the Peach #1 well would result in localized, short to long-term, negligible to minor, adverse impacts on air quality within the analysis area.
Geology and Soils	Construction of the wellpad for the Peach #1 well would result in the short-term disturbance to geology and soils on up to 6.05 acres, and the long-term occupancy of 2.412 acres, while the road and flowline would disturb 3.56 acres, resulting in localized, short to long-term negligible to minor, adverse impacts on geology and soils. Expansion of the pad to drill and produce the Peach #2 through #6 wells would result in the short-term disturbance to geology and soils on 1.24 acres and the long-term occupancy of 3.08 acres, resulting in localized, short to long-term negligible to minor, adverse impacts on geology and soils.
Water Resources and Floodplains	The construction of the Peach #1 wellpad, expansion of the pad for the Peach #2 through #6 wells, and the drilling of the Peach #1 through #6 wells resulted in the short-term occupancy of the 100-year floodplains on up to 6.05 acres, and the possible long-term occupancy of 2.412 acres, resulting in localized, short to long-term, negligible to minor, adverse impacts on water resources and floodplains. There was no practicable alternative to siting in the floodplains.
Wetlands	Vehicle access, associated with the wellpad construction, and drilling and production of the Peach #1 through #6 wells would occur above the "wet-line" along the 6.9 mile segment of Gulf beach. Construction and maintenance of the access road/flowline within 0.048 acre of emergent wetlands would result in localized, short to long-term, negligible to minor, direct and indirect adverse impacts on wetlands. A total of 17 culverts were installed to mitigate wetland impacts.
Vegetation	Construction of the Peach #1 wellpad would result in short-term loss of vegetative cover on up to 6.05 acres and the long-term occupancy of 2.412 acres, while construction of the access road and flowline would result in a 3.56-acre loss of vegetation, resulting in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation. The expansion of the wellpad to drill and produce the Peach #2 through #6 wells would result in the short-term loss of vegetative cover on 1.24 acres and the long-term occupancy of 3.08 acres, resulting in localized, short to long-term negligible to minor, adverse impacts on vegetation.
Natural Soundscapes	Construction of the Peach #1 wellpad, access road and flowline, expansion of the wellpad for the Peach #2 through #6 wells, and drilling and producing the wells would result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized around sources.

Impact Topic	Alternative B: Proposed Action
Wildlife	Construction of the Peach #1 wellpad, access road and flowline, and drilling and producing the well would result in the short-term loss of wildlife habitat on up to 6.05 acres, and the long-term occupancy of 2.412 acres, resulting in localized, short to long-term, negligible to minor, adverse impacts on wildlife. The expansion of the wellpad for the Peach #2 through #6 wells would result in the short-term loss of wildlife habitat on an additional 1.24 acres and the long-term occupancy of 3.08 acres. Short-term drilling of each well would elevate noise localized around the wellpad and displace wildlife, and cause the alteration of animal behavior and avoidance of habitat from certain activities. The impact of habitat loss and noise would be more pronounced during the drilling phase of operations, would could also persist until such time as production ceases, when the wells would be plugged and the sites would be reclaimed. At that time, animal populations displaced by the operations are expected to recolonize the area.
State and Federally Protected Species	Over 20 federally or state-listed threatened or endangered animal species occur in the park; but the Kemp's ridley sea turtle (Federally-listed endangered) nests on the Gulf beach each June-August and the Piping Plover (Federally-listed threatened) utilize the beach. Operational vehicles would utilize the Beach corridor to access drilling and production operations. No impact is expected to Kemp's ridley sea turtle. On December 22, 2006, the U.S. Fish and Wildlife Service, Corpus Christi, concurred with the park's §7 Biological Opinion, concluding that the Dunn-Peach #7 operation would not likely adversely effect proposed or listed threatened/endangered species and amended an existing Incidental Take Permit. Drilling activities would result in localized, short to long-term, negligible to minor, adverse impacts, and negligible beneficial impacts on threatened or endangered species.
Visitor Use and Experience	Operations areas and man-made facilities cause visual interruptions of natural scenery. Manmade facilities would be located in a natural setting, but siting behind foredunes would minimize the facilities being seen by park visitors and result in a minimal adverse impact. Operations behind the primary dune line are not generally visible from the Gulf beach. Vehicular access from vehicles traversing the Gulf Beach would result in localized, short to long-term, negligible to minor, adverse impacts, on visitor use and experience from the presence of vehicles, the number and type of vehicles, and the noise generated from internal combustion engines. Impacts to scenic values and visitor experience would be fully mitigated when the wells cease to be productive, and the sites are abandoned and reclaimed.

The impact topics were analyzed in site-specific detail through the development of the two EA's within the past two years. Impacts from the drilling and development of the previous six wells were monitored and the analysis determinations were accurate. Unforeseen impacts did not occur and analyzed impacts corresponded to analysis and conclusions developed in the previous EA's. Impacts from the proposed operation will be similar as those already analyzed since the proposed drilling operation is the same as the previous six drilling operations on the same well pad. No changes have occurred to the affected environment and anticipated visitation is similar to visitation analyzed within the previous two EA's.

Consultation with the U.S. Army Corps of Engineers determined that no Corps jurisdictional wetlands occur within the project area. The park developed a Statement of Findings for Wetlands, which identified 0.048 acres of NPS jurisdictional wetlands that would be impacted by the previous development of the pad and road. Culverts and road and pad placement mitigated wetland impacts. The Dunn-Peach #7 well will not impact any Corps or NPS jurisdictional wetlands.

The park developed a Biological Assessment and FWS concurred that the Dunn-Peach #7 operation would not likely adversely affect federally protected species. The Biological Opinion tiered off of the two previous Biological Opinions developed for Dunn-Peach #1 and Dunn-Peach #2-6 wells respectively. The FWS concurred with our determination and amended the existing Incidental Take Permit to include the Dunn-Peach #7 well. The NPS will require mitigation measures previously applied to all oil and gas operations within the park to the Dunn-Peach #7 well.

Conclusion

The interdisciplinary team (IDT), consisting of Padre Island National Seashore, Intermountain Region, and Geologic Resource Division staff, conducted internal scoping to review the proposed project. After careful review of the November 2003 and November 2004 Environmental Assessments, the team concurs that the previous documents adequately describe and analyze the impacts for the Dunn-Peach #7 well. There is no change to project scope, the description of impacts (context, intensity and duration) remain as described in the previous Environmental Assessments, and site conditions have not changed since preparation of the environmental assessment. No additional public involvement is required. Because neither the original EA, nor this evaluation, resulted in any major adverse effects to NPS resources and values, there would be no impairment to National Park System resources and values from implementation of this project.

deleg Donnell E. Echols
Superintendent
Padre Island National Seashore

6/11/2007
Date

Enclosures:

- 1) Additional Mitigation Measures to Protect Park Resources and Visitor Experience
- 2) BNP Petroleum Corporation's May 31, 2007 letter describing the Dunn-Peach #7 operation

cc:

Chris Turk, Intermountain Regional Environmental Coordinator, IMDE-OPE
Linda Dansby, Intermountain Regional Minerals Coordinator, IMSF-MOG
Carol McCoy, Chief, Planning, Evaluation and Permits Branch, Geologic Resources Division

Drafted by DEchols:PAIS:6/5/07

Reviewed/revised by LDansby:IMSF-MOG:6/6/07

Finalized by DEchols:PAIS:6/7/07

Mitigation Measures

Number	Mitigation Measures
Natural and Cultural Resources and Visitor Experiences	
1	If appropriate, directional drilling from an upland location will be encouraged and access roads and flowline routes will be selected to minimize direct impacts to park resources. The location and size of the well pad will be situated so that it is suitable for drilling to multiple targets and eliminates the need for additional well pads.
2	Heavy equipment (vehicles larger than a 1-ton pick-up truck or any size pick-up truck with a trailer) will not be operated on Holiday weekends including Memorial Day, July 4 th , and Labor Day.
3	If an unknown cultural resource is discovered during approved operations, and such resource might be altered or destroyed by the operations, the operator will immediately cease activity in the immediate area and notify the Superintendent before continuing any operations.
4	Culverts will be installed where fill may directly affect surface water run-off and flow. Culvert locations will be approved by the NPS and selected to minimize alteration of natural surface drainage patterns and will be placed at an adequate depth to fulfill their function of maintaining hydrologic flow.
5	All compressors used during production operations will be equipped with hospital mufflers or similar technology and be oriented so that the exhaust faces away from the prevailing southeast wind direction.
6	The operator will plant NPS-approved native shrubs and trees around the production facility to minimize visual and audible impacts to visitors and provide habitat.
7	Vegetation growth within the facility and along the access road will be mowed frequently to a height of four to six inches to minimize threats from wildfire. Herbicide or pesticide use must be approved by the Superintendent before their use.
8	The operator will make every effort to conduct operations outside of the summer season (April 1 through August 31) in order to avoid disturbing sea turtle nests and nesting activity and impacting park visitors.
9	Heavy equipment and convoys will conduct all driving above the Gulf beach "wet line" to prevent excessive erosion, crushing of benthic invertebrates, impacting endangered or threatened species, and prevent disturbances to shorebirds.
10	All operations will be setback 500 feet from the Gulf Beach dune line and other light-sensitive areas. Lights will be shielded and directed at the rig work area itself to meet human safety requirements.
11	During the sea turtle nesting season, an NPS trained monitor will patrol the beach at the beginning of each day and prior to any convoy of trucks driving to or from the drilling location in order to identify any possible nesting that may have occurred at night or in the early morning hours.
12	All open-topped tanks and/or secondary containment areas will be covered with netting or other covering with all seams completely enclosed and netting falling no further than 3-inches below the top of the containment. All open-vent exhaust stacks on production equipment will be constructed in a manner that prevents birds and bats from entering or perching.
13	Sea turtle awareness training will be provided by the NPS to all operation employees and contractors and will include track identification, notification protocols, and how to mark tracks or nest area if they are unable to stay on site until NPS personnel

Number	Mitigation Measures
	arrive.
14	The operator will hire vehicle monitors that will escort all heavy equipment (vehicles larger than a 1-ton pick-up truck or any size pickup truck with a trailer) traveling to and from the well site. During the sea turtle nesting season, an additional ATV monitor trained by the NPS to observe and detect nesting sea turtles, will be utilized behind each convoy to insure that all trucks maintain proper spacing and speed while driving on the beach. Escorts will report all violations of the mitigation measures or conditions of approval, as well as all sightings of, and incidents involving, sea turtles or their nests, eggs, hatchlings, or tracks, immediately to the NPS.
15	The operator will educate all employees and contractors regarding the need for, and ways and means of, minimizing disturbances to the land, natural and cultural resources, wildlife, and visitors at Padre Island National Seashore. Operator will print a list of conduct and operating procedures, approved by Padre Island National Seashore, while working within the park to be reviewed by all operation related personnel before they begin work inside the park.
Safety	
16	All ATV operators will be required to wear personal safety equipment identical to that which is required of all NPS staff. This includes helmet, gloves, orange safety vest, closed-toe shoes that cover the ankle, eye protection, long sleeve shirt, and long pants. Operator will provide the NPS with proof that these individuals have completed a current ATV safety Rider Course prior to operating an ATV in the park.
17	In preparation for a hurricane event, the operator will secure all surface and sub-surface equipment in accordance within PAIS Hurricane Preparedness Plan and as outlined in the operator's Plan of Operations.
18	The operator will have in place fire suppression equipment and will maintain it in serviceable condition at all times.
19	The operator will maintain the access road using a maintainer when needed to keep the road passable and minimize the potential of vehicles driving off the road and into undisturbed habitats. One or more additional maintainers or similar equipment will repair ruts caused by the operator's vehicles. Each maintainer or similar equipment will have an NPS turtle trained ATV monitor during the sea turtle nesting season. The use of bull rock will not be allowed on roads within the Seashore.
20	The operator will not be allowed to store unused equipment or debris at the site. Any unused or surplus equipment must be removed from the park immediately. Debris such as cardboard boxes, garbage, buckets, etc. must not be stored at the site and must be brought in on an as needed basis.
21	During construction and drilling, the operator will utilize a dispatcher stationed outside of the park to regulate the flow of traffic into the park and along the beach. The operator will employ an onsite "Beach Manager" to coordinate and control all operation activities within the park. The dispatcher will maintain logs of all personnel entering the project and will supply copies of the log to Park staff when requested but at least weekly. Data to be collected on the vehicle log will include purpose of trip (sales, delivery, etc.), type of vehicle (pickup, vacuum truck, flatbed, etc.), gross vehicle weight for vehicles classified as heavy equipment, type of equipment (compressor, drilling structure, etc.), and site destination (Peach, A4, etc.). The dispatcher will provide this to NPS staff when requested but at least on a weekly basis. The dispatcher will provide each driver a copy of Operator/Padre Island National Seashore requirements for vehicle operations, environmental

Number	Mitigation Measures
	concerns, and public safety while operating in the park.
22	A bulldozer will be used throughout the drilling operation to assist vehicles in the transportation of personnel, services, and materials where needed. A maintainer will be on-site to smooth out any rutting that may occur.
23	A temporary, three-strand, barbed-wire fence will be placed around the perimeter of the pad during drilling and completion operations. If the well enters production, a gate and permanent chain link fence will be installed around the well and production facilities of a design specified by the Superintendent.
24	If drilling or production operations are suspended for 24 hours or more, but less than 30 days, the pipe rams will be closed and locked, and at least one safety valve installed in the top of the drill pipe and closed. If suspended for 30 days or more, a backpressure valve will be installed in the tree, the tree gate valves will be closed, and the valve handles will be removed.
25	Heavy equipment is limited to 20 vehicles each day, a speed limit of 15 mph or less, no traveling at night, and shall be scheduled in a manner that facilitates caravanning. The drilling crew will utilize an operator-provided shuttle service to transport crews to and from the site to decrease vehicular traffic on the beach.
26	Consumption of alcoholic beverages or illegal drugs will not be allowed or tolerated on operations located within the Seashore. If evidence of these activities is discovered during an inspection, the operator will be notified immediately and will be required to provide the NPS with a plan on preventing this activity in the future.
Contamination	
27	Collection and sampling of soils, surface water, and ground water will be performed following NPS protocols as listed in the 2006 Operator's handbook, prior to the start of construction, to establish baseline conditions, and at the completion of operations, to determine if contaminating substances are present in concentrations that pose a threat to wildlife populations or human health, or will jeopardize reestablishment of native vegetation.
28	A Contamination or Toxic Substance Spill Control Plan shall be included as part of the Plan of Operations to describe actions to be performed in the event of an oil spill, brine spill, release of drilling fluids, blow-out, or release of any toxic substance.
29	Should contaminated soils be found, the contaminated soil will be excavated to clean soil and removed to a state-approved off-site disposal facility where applicable. The excavation will be filled with clean native soil. If necessary, contaminated soils will be remediated on-site using NPS-approved remediation methods.
30	A 20-millimeter thick polyethylene protective liner will be placed on the pad area and a 3-foot high earthen material berm, which will also be lined, will be constructed around the perimeter of the pad for emergency containment and prevention of downward movement of fluids through the soil from reaching the groundwater. Construction of a moat or barrow ditch will not be allowed around the pad perimeter.
31	A corrugated galvanized steel cellar will be placed around the well. Drainage ditches will be dug to route all runoff to the cellar for collection and removal. The cellar will be filled upon completion of drilling activities in an NPS approved manner that will allow the operator to continue monitoring the production casing - surface casing annulus for pressure buildup.
32	Well control equipment will be installed and include a blowout preventer and a choke manifold equipped with a hydraulic, remote-controlled, and adjustable choke.

Number	Mitigation Measures
33	The operator will utilize an environmentally safe, synthetic, oil-based drilling mud for drilling the well to reduce water usage, beach traffic, and operational time. Lost circulation mud additives will be used to prevent and control lost circulation, reducing the time needed to drill.
34	All flammable liquids (i.e. condensate, compressor oil, etc.) will be labeled, stored in steel or fiberglass tanks, and contained inside the firewall or berm at the central facility. All materials not necessary for the operation of the well will be removed. Any surplus or emergency materials or supplies that need to be kept at the well site will be stored at the central facility in a locked storage shed or parts box. All containers will be labeled as to their contents.
35	A closed loop "zero discharge system" or similar technology will be utilized for drilling the well. No earthen pits will be approved. All mud, drill cuttings, sewage, produced water, etc. will be collected for disposal at state-approved disposal facilities outside of the park boundaries, or disposed down the well annulus. Where feasible, excess materials and drill cuttings will be stored on the drill location in order to coordinate the removal of such materials.
36	Standard oil field technologies will be applied to prevent leaks and spills of hydrocarbons and produced water including: pressure relief valves, hi-lo safety shut-off actuators, liquid level controls, and cathodic protection.
37	A berm with an impermeable liner will be constructed around all tank batteries, and designed to contain 1.5 times the volume of the largest tank.
38	All produced water will be stored in closed top fiberglass tank(s). The water will be transported to an off-site, state-approved disposal facility by vacuum truck.
39	For all releases of contaminating or toxic substances, the operator will promptly report the initial spill information to Padre Island National Seashore according to their Contamination or Toxic Substance Spill Control Plan within their Plan of Operations.
Reclamation	
40	The operator will cut, bale, and store vegetation before ground-disturbing activities occur. This vegetation will be used in mulching and native seeding activities during reclamation/re-vegetation. All equipment will be washed off and cleaned of mud/soils/plant debris before entering the park to reduce potential introduction of non-native seed/pests into the park.
44	Reclamation of the site will begin after completion of operations and no later than six months unless authorized by the Regional Director. The operator will reduce the pad size following drilling operations as feasible for production operations. All imported fill materials and liners used to construct the access road and pad will be hauled offsite. All disturbed areas, including rutting deeper than one inch, will be re-contoured and re-vegetated.
42	Some soils and sands from outside Padre Island National Seashore, but on Padre Island, may be hauled in to achieve pre-project contours or to restore any spill clean-up areas. Such soils and sands will be similar in character to pre-project soils and sands with regard to particle size, contaminants, certified weed-free, and approved by the Superintendent before purchase/use to minimize the potential for invasive species.
43	Native vegetation harvested and baled before operations begin or at seasonally optimal times during operation will be used to reclaim disturbed areas. Successful

Number	Mitigation Measures
	re-vegetation will be reached when 70 percent coverage of targeted species is achieved. Herbicide application or hand-tool removal will be used to control invasive plant species in the reclamation area, as approved by the Superintendent.
Operational	
44	To the extent possible, with respect to rig scheduling and availability, the operator will use a diesel electric rig or similar rig to drill the well so that impacts to the natural soundscape are minimized.
45	The operator will provide the Seashore with daily drilling logs to allow NPS petroleum engineers to track the progress of the well.
46	Signs will be posted at the entrance of the access road, on the well tree, and on the tank battery giving operator name, lease name, well number, API Number, and Railroad Commission of Texas identification number.
47	During production, the well gauger will check the facilities daily and notify Padre Island National Seashore personnel of problems or observations. The well gauger will check supply gas pressure daily by use of a hi-lo pressure sensor. Should system pressure go above or below the safe range of operating pressure set by a technician, the sensor will trip a relay that actuates the safety valve, shutting in the well.
48	The well will be plugged in compliance with Federal Onshore Oil and Gas Order No. 2 and Railroad Commission of Texas requirements.
49	The Superintendent of Padre Island National Seashore, or his representative, shall have reasonable access to the operations as necessary to properly monitor and insure compliance with the conditions of the plan of operations under the provisions of 36 CFR §9.37(f).
50	The approval of the Plan of Operations will be conditioned upon the operator tendering a performance bond not to exceed \$200,000 for operations by a given operator within a unit of the National Park System. The regulations limit the liability amount for the operation of a single well to \$50,000.
51	The operator is responsible for all damages to park paved road surfaces due to trucks carrying construction and drilling equipment because these roads were not constructed for heavy industrial equipment and loads. Typical repairs include road resurfacing, site preparation, pack coat, and seal and chip. Damages will be determined based upon wear to the road or on a per vehicle basis.
52	The wellhead and all production equipment will be painted a neutral, earth-tone color, such as Sherwin Williams Burlap, or a similar NPS approved color, to blend with the natural environment.