

William W. Grygar II  
Director, EHS Gulf of Mexico  
Anadarko Petroleum Corporation  
1201 Lake Robbins Drive  
The Woodlands, Texas 77380

Subject: Modification of Phoenix Prospect Drilling Project  
OCS Permit OCS-EPA-R4005-M4

Dear Mr. Grygar:

This letter is in response to your request for a minor permit modification for the Anadarko Petroleum Corporation (Anadarko) Phoenix Prospect Drilling Project, which was received by the U.S. Environmental Protection Agency on November 5, 2013. The EPA previously issued Anadarko an Outer Continental Shelf (OCS) air quality permit on June 13, 2011, and three consecutive minor permit modifications on October 30, 2012, December 11, 2012, on August 15, 2013, to construct and operate a temporary, exploratory drilling operation in the Lloyd Ridge lease area in the Gulf of Mexico, approximately 160 miles southeast of the mouth of the Mississippi River and 200 miles southwest of Panama City, Florida. The operation is for a single exploratory well and is currently subject to the Prevention of Significant Deterioration (PSD) requirements for nitrogen oxides (NO<sub>x</sub>).

Anadarko requests the permit be amended to include two 600 hp nitrogen pump engines. These engines will be brought onboard during cementing operations and will be operated by a third party vendor. The nitrogen pumping operations will occur in conjunction with the cementing operations, and therefore Anadarko will lease both types of engines from the same third party vendor. Each nitrogen pump engine will operate a maximum of 125 hours for the duration of the project.

The drilling activity will use the previously permitted drill ship, *Discoverer Spirit*, and associated work boats. Anadarko is not requesting any increases in NO<sub>x</sub> emissions or changes to currently permitted emissions. The addition of the two nitrogen pump engines will not result in an increase in emissions. The applicant estimated their potential to emit (PTE) for all engines on total fuel usage. The permit limits Anadarko to 425 barrels per day and 1,081,920 gallons for the duration of the project. These proposed changes will not increase the project emissions, since the fuel limit will remain unchanged.

The applicant provided emission calculations, a regulatory applicability analysis, a best available control technology analysis, and an air quality impact screening analysis. These engines are 40 CFR 89 EPA Tier 2 certified and equipped with turbochargers and aftercoolers. When operating on the *Discoverer Spirit*, these engines are also subject to 40 CFR 63 Subpart ZZZZ for Reciprocating Internal Combustion Engines.

The EPA has reviewed the request submitted by Anadarko, and determined that these changes do not result in a major modification and do not trigger PSD review for any New Source Review (NSR) regulated pollutants. The source continues to be subject to PSD requirements only for NO<sub>x</sub> emissions and the emissions increases of the other NSR regulated pollutants remain de minimis, i.e. below the PSD significant emission rates. The EPA has determined that the requested revisions do not constitute a significant change from the original permit nor a change in the environmental impact of the project.

After consideration of the request submitted by Anadarko and pertinent federal statutes and regulations, the EPA hereby grants these requests pursuant to the terms and conditions of the revised permit, OCS-EPA-R4005-M4, for the Phoenix Prospect Drilling Project. The EPA has modified the permit to include two nitrogen pump engines, and has updated Table 1. These changes can be identified in the enclosed mark-up version.

In accordance with the provisions of Section 328 of the Clean Air Act (CAA), 42 U.S.C. § 7627, and the implementing OCS Air Regulations at Title 40 Code of Federal Regulation (CFR) part 55, the EPA has revised the permit to include the minor amendments. The revised permit, OCS-EPA-R4005-M4, is enclosed. If you have any questions, please contact Ms. Eva Land at 404-562-9103, or Ms. Kelly Fortin at 404-562-9117.

Sincerely,

Heather M. Ceron  
Chief  
Air Permits Section

Enclosures

cc: Ms. Katie Maness, Anadarko Petroleum Corporation  
Ms. Sara Carlson, Anadarko Petroleum Corporation  
Mr. Rahul Pendse, Trinity Consultants