

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
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FEB 28 2012

Dr. Cynthia Gleason
Environmental Advisor USGC Petrochemicals Project
Chevron Phillips Chemical Company, LP
363 N. Sam Houston Parkway Suite 500
Houston, TX 77060

Subject: Application Completeness Determination for the Chevron Phillips Chemical Company, LP Prevention of Significant Deterioration (PSD) Permit

Dear Dr. Cynthia Gleason,

This letter is in response to our meeting on February 2, 2012, regarding your Greenhouse Gas (GHG) Prevention of Significant Deterioration (PSD) permit application dated December 19, 2011 and received on December 20, 2011. After an initial review of your application we have determined that additional information is necessary in order to begin the processing of the permit. Enclosed is a list of the information required.

Upon the receipt of this information the Environmental Protection Agency (EPA) will begin the process of developing a Statement of Basis and rationale for the terms and conditions for a draft PSD permit. As we develop our preliminary determination and draft permit, it may be necessary for the EPA to request additional clarifying or supporting information. Supplemental information on one or more parts of the application may be required before we can propose a draft permit. If the supporting information substantially changes the original scope of the permit application, an amendment or new application may be required.

While not required for the completeness determination, the EPA may not issue a permit until it has been established that the issuance of the permit will have no impact on endangered species pursuant to Section 7 of the Endangered Species Act. In addition, the EPA must complete a consultation in accordance with Section 106 of the National Historic Preservation Act. To expedite these consultations, the EPA requests that the permit applicants provide a biological assessment and cultural resources report covering the project and action area. We request that you submit this information as early as possible, so that the EPA may issue a permit at the earliest possible time, and within the timeframes required by statute.

If you have any questions regarding the review of your permit application, please contact Aimee Wilson of my staff at (214) 665-7596 or wilson.aimee@epa.gov.

Sincerely yours,



Carl E. Edlund, P.E.

Director

Multimedia Planning and
Permitting Division

cc: Mr. Steve Hagle, P.E., Deputy Director
Office of Permitting and Registration
Texas Commission on Environmental Quality

Mr. Mike Wilson, P.E., Director
Air Permits Division
Texas Commission on Environmental Quality

Enclosure

EPA Comments on Chevron Phillips Greenhouse Gas Permit Application Application dated December 19, 2011

BACT Analysis

1. The application provides a detailed five-Step BACT analysis for Carbon Capture and Sequestration (CCS) and concludes that the use of this technology is technically infeasible. CCS is eliminated as a technically infeasible option in Step 2 of the five-Step BACT analysis. The applicant bases this conclusion on its determination that suitable storage sites are not located in close proximity to the facility, and the furnace exhausts are not of high-purity (contain approximately 5% or less CO₂). As noted in the application, captured CO₂ can also be used in Enhanced Oil recovery (EOR), but EOR requires a CO₂ purity of 94%-98%. Pipelines are currently available to receive CO₂ streams in Texas, and others may be in the planning and construction phases. In circumstances where CO₂ transportation and sequestration opportunities already exist in an area, the project would clearly warrant a comprehensive consideration of CCS¹. In light of our discussions on February 2, 2012, we believe it is important for the BACT analysis to be supplemented by an economic analysis, in Step 4 of the five-Step BACT analysis regarding CCS
2. The application indicates that emissions from piping fugitives are generated primarily from fuel gas and natural gas lines, and states in step 2 of the BACT analysis that the use of leak detection and repair programs (LDAR) is technically feasible. The applicant then eliminates LDAR in step four of the BACT analysis based on "the economic practicability of such programs cannot be verified" (pg. 40). 28 LAER states connectors should be checked for fugitive emissions weekly using auditory, visual, and olfactory (AVO) methods, and at least quarterly using an approved gas analyzer with a directed maintenance program. Did the BACT analysis consider 28 LAER as the highest control? The BACT analysis included in the TCEQ application indicated that LDAR would be implemented to control VOC emissions from some components (excluding fuel lines). Could the LDAR implemented to control VOC emissions not also be used to control fugitive greenhouse gas (GHG) emissions from the same components? If LDAR is already being used to control VOC emissions is it economically feasible to implement LDAR for the fuel gas and natural gas lines that are primarily responsible for GHGs from piping fugitives? Please provide supporting documentation that led to the conclusion that the implementation of LDAR is not economically practicable for GHGs.

¹ See page 36 of the PSD and Title V Permitting Guidance for Greenhouse Gases, EPA, March 2011. Found at <http://www.epa.gov/nsr/ghgdocs/ghgpermittingguidance.pdf>

3. The current BACT analysis does not appear to provide adequate information in Steps 3 and 4 of the five-Step BACT analysis. In Step 3, the applicant should provide information on control efficiency, expected emission rate, and expected emission reductions. The applicant then uses this information to rank the control technologies. A comparison of equipment energy efficiencies is necessary to ensure that the most energy efficient equipment and control technology are selected. This information is then also available to use in determining BACT limits for the emission unit's for which these technologies are applied in Step 5. Where appropriate, net output-based standards provide a direct measure of the energy efficiency of an operation's emission-reducing efforts. For example, one of the control technologies identified for the VHP Boiler is energy efficiency. The energy efficiency of the boiler must be tied to a BACT limit. This limit could be established in pounds of CO₂ per pound of steam produced or some other appropriate efficiency measure.

Step 4 must provide an analysis of the economic, energy, and environmental impacts arising from each control option reviewed in Step 3. This should demonstrate why the top control technology is determined to be appropriate or inappropriate. This information may be exceedingly important when eliminating CCS or other control technologies from consideration. Chevron Phillips must revise the BACT analysis to provide all necessary information required in Steps 3 and 4 of the 5 Step BACT analysis.