UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

APR 0 9 2013

Mr. Randy Smith
Vice President/General Manager
Formosa Plastics Corporation, Texas
P.O. Box 700
Point Comfort, TX 77978

RE Completeness Determination for Formosa Plastics Corporation, Texas
Greenhouse Gas Prevention of Significant Deterioration (PSD) Permit Application
2012 Expansion Project: Low Density Polyethylene Plant

Dear Mr. Smith,

The EPA has reviewed your Greenhouse Gas (GHG) Prevention of Significant Deterioration (PSD) permit application for Formosa Plastics Corporation, Texas that was received by the EPA on December 11, 2012, including supporting documentation, and determined that your application is incomplete at this time. A list of the information needed from you so that the EPA can continue its completeness review is enclosed (see Enclosure). Please notify us if a complete response is not possible by April 29, 2013.

The requested information is necessary for EPA to develop a Statement of Basis and Rationale for the terms and conditions for any proposed permit. As we develop our preliminary determination, it may be necessary for EPA to request additional clarifying or supporting information. If the supporting information substantially changes the original scope of the permit application, an amendment or new application may be required.

The EPA may not issue a final permit without determining that: 1) there will be no effects on threatened or endangered species or their designated critical habitat, or 2) until it has completed consultation under Section 7(a)(2) of the Endangered Species Act (16 USC § 1536). In addition, the EPA must undergo consultation pursuant to Section 106 of the National Historic Preservation Act (NHPA) (16 USC § 470f). As a reminder, NHPA implementing regulations require that EPA provide information to the public with an opportunity for participation in the Section 106 process. 36 CFR § 800.2(d). We look forward to receiving the Biological Assessment and Cultural Resources Reports that you have agreed to prepare for EPA for our use in complying with these statutes.

If you have any questions regarding the review of you permit application, please contact Melanie Magee of my staff at (214) 665-7161or magee.melanie@epa.gov.

Sincerely yours,

for David F. Garcia
Acting Director
Multimedia Planning and
Permitting Division

ENCLOSURE

EPA Information Request
Formosa Plastics Corporation, Texas (FPC TX)
2012 Expansion Project: Low Density Polyethylene (LDPE) Plant
Application for Greenhouse Gas Prevention of Significant Deterioration Permit

1. It is not clear from the process description and the process flow diagram that has been provided whether the additive hoppers, recycle/master silo and pellet dryer are closed systems? Are all the vent emissions from these vessels directed to the regenerative thermal oxidizer (RTO)? If not, would these emission sources be GHG (CH4) emission sources? Are there GHG (CH4) emissions from the "wax load out", hopper car loading, bulk truck loading and boxing? Please clarify whether the extruder building vent is a GHG emission source? Is it routed to an emissions control device? If these sources are GHG (CH4) emitting sources, please provide supplemental information to the emission calculations along with assigning an emission point identification number.

2. On page 18 of the application, it states that recycled ethylene (stream 19) is compressed by the low pressure booster compressor and is combined with the ethylene feed (stream 1) received from outside battery limits (OSBL) and then compressed by the primary compressor to approximately 4000 psig. The high pressure recovery gas (stream 25) is mixed with the feed stream after primary compressor discharge and this combined stream is fed to the secondary compressor. The process description does not depict this feed stream to the secondary compressor. Please supplement the process flow diagram to indicate this feed stream.

3. Please provide supplemental information to further explain the operation of the RTO. On page 21 of the permit application, the process description states that the purge air and the stripped VOCs (stream 28) from the degassing silos are routed to one of two RTOs for control. The process flow diagram depicts four emission sources with the following EPNs: LD-022A, LD-022B, LD-023A and LD-023B. Also, on page 23 of the process description it is stated that the RTOs are designed for redundant operation. Please clarify if there are four RTOs or two RTOs proposed for the project? What does redundant operation mean for this source? Will two RTOs operate in series? What will be the procedures when a RTO is taken out of service for maintenance? Will there be a spare RTO(s)?

4. On page 21 of the permit application, it states that GHG (methane and CO_2) can be formed in the polymerization reaction as an unfavorable side reaction and in order to maximize production of saleable product, the LDPE process design and control system "inherently limits this side reaction". Please provide supplemental technical benchmark data that compares the design selections to be employed to a similar or existing source in the industry. Please provide supporting data that includes the technical resources used to evaluate the design decisions and to support the assertions made in this section.

5. On page 22 of the permit application, it states the reaction conversion rate can vary depending on the type of LDPE process technology selected, which results in a significant amount of unreacted ethylene in the reactor effluent. FPC TX is proposing a process technology that will maximize the feed conversion rate. In comparison, another LDPE design rate with a lower conversion rate would require additional ethylene recovery capacity, resulting in additional electrical consumption. Were other design technologies evaluated for this project? Was an electrical consumption comparison performed between the technology chosen for this project and another technology? If possible, please provide the technical resources used to evaluate the design decisions to support the assertions made in this section.

6. On page 23 of the permit application, it is stated that "normal" emission sources from the LDPE process upstream of and including the extruder are routed to the LDPE flare header. Also, there are several flare header connections in the compression and reaction systems. The LDPE plant's flare gas header is routed to the Olefins 3 elevated flare header where the waste gas from LDPE plant is combusted along with waste gas from the Olefins 3 process. Please supplement the process flow diagram to show the LDPE flare header and its path to the Olefins 3 elevated flare header.

7. On page 34 of permit application, it states that FPC TX estimates as much as 50% reduction in fuel gas combustion or approximately 316,000 MMBTU/yr of energy savings is gained by selecting a RTO instead of a non-regenerative thermal oxidizer. Also, the "unique" natural gas conservation (NGS) system which allows the RTO to maintain its combustion temperature without use of the primary burner. The primary burner may be switched off while natural gas is injected into one of the four corners of the system. The injected natural gas ignites as it rises up through the ceramic bed. This design feature results in the consumption of up to 20% less natural gas (approximately 79,000 MMBTU/yr for RTOs). Also, compared to a traditional thermal oxidizer, FPC TX expects 40 kWh less electrical consumption. Was this comparison made to a traditional regenerative oxidizer? Please provide supplemental supporting calculations, and design and technical data to support this assertion.

8. On page 38 of the permit application, it is stated that operating the LDPE plant to minimize the amount of hydrocarbon waste gas routed to the flare will minimize the quantity of GHG emissions resulting from flaring of LDPE plant waste gas. It is estimated that proper operation of the LDPE plant (with recycle and reuse) is expected, based on process design, to minimize waste gas routed to the flare by several orders of magnitude, which corresponds to a GHG emission reduction of approximately 4.3 million tons/yr CO_2e. Please provide a basis for the rationale that was used to calculate this reduction, and technical data to support the assertion.

9. On page 41 of the permit application, it is stated that FPC TX is proposing to operate the upstream stripping silos and monitor the pellet blending silo exhaust stream heating value as BACT. Monitoring the heating value of the pellet blending silo exhaust will alert FPC TX operations in the case that insufficient stripping (upstream) is being achieved. The heating value measurement is a direct indicator of the presence of volatiles (including GHGs) in the blending

silo exhaust stream. FPC TX is proposing an initial control point of 5 BTU/scf, based on a 3-hour average measurement. Exhaust stream heating value measurements at or above this value will trigger operations to increase the quantity of stripping air in the upstream stripping silos. Will this exhaust stream be continuously monitored? Will the increase in stripping air be added manually or will it be automated? Please provide the basis for the rationale, and technical data and calculations that support the control point selection of 5 BTU/scf.

10. On page 75 of the permit application, FPC TX proposes to use weekly AVO monitoring. Please provide supplemental data that discusses the details of what this program will involve. What is the proposed compliance strategy including recordkeeping, schedule, and the protocol for equipment repairs? Is there a TCEQ LDAR method that would be preferred to use? Please provide supplemental data that includes the basis for utilizing this preferred method versus other potential methods.