From:	Dave Jordan
To:	Jones, Dave F (DEC); ted.hartman@agrium.com
Cc:	Simpson, Aaron J (DEC); Jack, Jesse R (DEC); Plosay, James R (DEC); Stacy, Andrea; catherine_collins@fws.gov
Subject:	RE: Information Request for Agrium US Inc."s Kenai Nitrogen Operations Construction Permit Application AQ0083CPT07
Date:	Friday, August 09, 2019 12:10:01 PM
Attachments:	image001.png ADEC Response 8.9.19.docx Cat Ox Cost Analyses 8.9.19.xlsx Attachment C BACT 8.9.19.pdf Primary Reformer BACT 8.9.19.pdf John Zink Flare Emissions.pdf Attachment B Emission Calculations 8.9.19.xlsx

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Dave,

Attached is a written response to questions raised in your July 26 e-mail. This response includes updated BACT cost spreadsheets, updated BACT text reports, and updated emission calculations. Please let us know if you have questions regarding any of these documents.

David R. Jordan, P.E.
Partner

ERM
9825 Kenwood Road¦Suite 100¦Cincinnati, Ohio 45242
T +1 317 706 2006 | **M** + 1 317 752 1420
E dave.jordan@erm.com | **W** www.erm.com

The business of sustainability

From: Jones, Dave F (DEC) <dave.jones2@alaska.gov>
Sent: Friday, July 26, 2019 8:12 PM
To: ted.hartman@agrium.com
Cc: Dave Jordan <Dave.Jordan@erm.com>; Simpson, Aaron J (DEC) <aaron.simpson@alaska.gov>; Jack, Jesse R (DEC) <jesse.jack@alaska.gov>; Plosay, James R (DEC) <jim.plosay@alaska.gov>; Stacy, Andrea <andrea_stacy@nps.gov>; catherine_collins@fws.gov
Subject: Information Request for Agrium US Inc.'s Kenai Nitrogen Operations Construction Permit Application AQ0083CPT07

Dear Mr. Hartman,

The Alaska Department of Environmental Conservation (Department) has reviewed Agrium US Inc.'s (Agrium's) application dated May 16, 2019, for new Construction Permit AQ0083CPT07 at the Kenai Nitrogen Operations (KNO) Facility. Based upon its review, the Department is requesting additional information under AS 46.14.160(c) in order to prepare a preliminary permit decision.

The Department will continue to process Agrium's application to the extent it is possible while the requested information is being prepared; staff will subsequently notify Agrium if unable to proceed due to inadequate information. The Department is requesting that Agrium prepare a response to this request by Friday, August 9, 2019, or provide a request for additional time as needed.

1. Agrium's application contained a MS Excel spreadsheet for BACT cost estimates titled *Attachment C BACT Appendix B Cost Estmates.xlsx,* which has two sheets for estimating the costs of an oxidation catalyst on the combined turbines emissions units (EUs) 55a through 59a with their respective waste heat boilers EUs 50 through 54, as well as the package boilers EUs 44a, 48a, and 49a. In these spreadsheets, Agrium lists a reagent pump requiring 1,000 kW of electricity to run for each turbine/waste heat boiler pair and package boiler. Please explain this process if the inclusion of the reagent pump was not an error.

   Discussion: Agrium's previous application for AQ0083CPT06 did not include reagent pumps in the oxidation catalyst cost estimates, nor has any other application for an oxidation catalyst that the Department has recently reviewed. What type of reagent is being used for this oxidation catalyst and at what flowrate is it injected into the catalyst bed? What are the costs associated with purchasing and disposing of this reagent? What device is powering these pumps? Please provide the vendor data for the oxidation catalyst systems and their respective reagent pumps.

2. Please provide a BACT analysis for an oxidation catalyst to control CO emissions from the primary reformer EU 12.

   Discussion: The Department has identified a stationary source in the RBLC (Emberclear Gas to Liquids, RBLC ID No. MS-0092) with a steam methane reformer using an oxidation catalyst to control CO emissions down to 5 ppmv at 3% oxygen. Therefore, a BACT analysis must be provided for your reformer.

3. The Department has calculated higher NOx and NH_3 emissions from flaring events based on ammonia throughput from a previously provided information request response (attached). Please verify the accuracy of these assumptions.

   Discussion: Agrium's application contained an excel spreadsheet for emission calculations titled *Attachment B Emission Calculations.xlsx.* In this spreadsheet Agrium has calculated NOx emissions for the small and emergency flares EUs 22 and 23, resulting from NH_3 throughput during flaring events. The Department has recalculated these NOx and NH_3 emissions in the attached spreadsheet (tabs 22 and 23) using the NH_3 throughput and NOx emission rates from the previously mentioned information request response from Agrium, and the previous BACT limit for the flares of 168 hours each per 12 consecutive month period.

Regards,

Dave Jones

Env. Engineering Assistant I
ADEC – Air Quality – Juneau
dave.jones2@alaska.gov
907.465.5122
