

Acronym information on page 3

Instructions: This form is used for Minnesota Pollution Control Agency (MPCA) internal use by Air Dispersion Modelers, Permit Engineers, and Risk Assessors to review modeling results.

Note: If results are marked not approved, please use the AQDM-06 form to resubmit. Updated AQDM-06 forms and updated attachments should be emailed to: AirModeling.PCA@state.mn.us. If files are too large to email, please mail a CD with the files to:

Air Quality Permit Document Coordinator
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

Facility information

Tempo AI ID number: 4665 AQ facility/permit ID number: 03900028 Submittal date (mm/dd/yyyy): 03/12/2021
Three-letter modeling facility ID (ex., XEK = Xcel Energy Allen S. King, MEC = Mankato Energy Center, etc.): ACF
Facility name: Al-Corn Clean Fuel
Facility street address: 797 5th Street
City: Claremont County: Dodge State: MN Zip Code: 55294
Facility contact: Jacque Parenteau Report prepared by: Katie Hill Brandt, PE
Facility contact phone: 507-681-7106 Preparer phone: 612-466-2408
Facility contact email: jparenteau@al-corn.com Preparer email: khillbrandt@merjent.com
UTM coordinates of facility (NAD83, zone 15 extended **only**): x = 498,590.86 m East, y = 4,877,356.01 m North
MPCA Air Dispersion Modeler: David Brown MPCA Air Permit Engineer: Megan Dalbec
MPCA Air Risk Assessor: N/A

List of files with names/descriptions submitted with modeling results

1. AERMOD input files (*.inp, *.adi, *.ami)
 AERMOD output files (*.out, *.ado, *.amo)
 AERMOD plot files (*.plt)
 AERMOD post files (*.pst) – If applicable
 AERMOD event files (*.evi, *.evo) – If applicable
 AERMOD miscellaneous/other files (MAXDCONT, SUMTABLE, etc.) – If applicable
2. AERMOD meteorological surface files (*.sfc)
 AERMOD meteorological upper air/profile files (*.pfl)
3. BPIP-PRIME input files (*.bpi, *.pip)
 BPIP-PRIME output files (*.bpo, *.sum)
4. Terrain file(s) for AERMAP (*.dem, *.tif)
 AERMAP input files (*.ami)
 AERMAP output files (*.rou, *.sou, etc.)
5. Background data files/background concentrations for applicable pollutants (seasonal, monthly, daily, hourly, etc.)

6. Figures for modeling results (*.jpeg, *.bmp, *.pdf)
- GIS maps for modeling results (*.shp)
7. AQDM-02 form – if applicable (not applicable if changes were not made)
8. Paved Roads Results – If applicable
9. SIL Analysis and Results – If applicable
10. Hourly O₃ File – If applicable
11. AERA forms – If applicable
12. Other files and supporting documents (hourly ozone, background files, supplements, etc.):

THI data file for determining when non-emergency generators operate

NO₂ in-stack-ratio design information

Nearby source emissions data

Section 1. Modeling review – 30-day substantial completeness determination

Completeness review of modeling report by sections

Section and section name	Substantially complete/incomplete	Deficiencies and/or comments	
Files to accompany modeling	Substantially Complete	Approved General Public Preclusion Plan submitted via email on 02/17/2021. Modeling report and required modeling files resubmitted via email on 06/22/2021. Edits to emission rates for PM _{2.5} annual modeling requested on 09/02/2021. Updated files were submitted on 09/16/2021.	
Section 1: Modeling protocol	Substantially Complete	No comments on this section	
Section 2: Changes to modeling protocol	Substantially Complete	No comments on this section	
Section 3: Paved roads fugitive dust (optional)	Substantially Complete	No comments on this section	
Section 4: Modeling results	Substantially Complete	No comments on this section	
Section 5: Discussion	Substantially Complete	No comments on this section	
Section 6: Modeling results figures/maps	Substantially Complete	No comments on this section	
Modeling results substantially complete?	Substantially Complete	Date (mm/dd/yyyy):	09/17/2021

Section 2. Air dispersion modeler results review

Technical review of final modeling report

Review items	Acceptable/Unacceptable	Deficiencies and/or comments
Are all changes from the protocol adequately described and addressed?	Acceptable	The changes to this report were updates to a modeling report that was reviewed and denied on 02/12/2021. Changes include: 1) Rochester Silver Lake sources were added back into the nearby source inventory for the 1-hr NO ₂ NAAQS demonstration and impacts are included in final concentration 2) Paved and unpaved haul road sources were included as volume sources in the modeling demonstration, and 3) The source impact analysis for 24-hr PM ₁₀ , 24-hr PM _{2.5} , and annual PM _{2.5} demonstrations was updated to include emissions from paved and unpaved haul road sources. The final modeling domain for these runs is now larger.

Are the model files consistent with the MPCA AQDM-02 spreadsheet accompanying the permit application?	Acceptable	No comments on this section	
Is the effective ambient air boundary described by the general public preclusion plan consistent with the ambient air boundary receptor locations?	Acceptable	No comments on this section	
Modeling demonstrates compliance with applicable NAAQS/MAAQS, SIL's, and PSD increments?	Acceptable	The modeling demonstrates compliance with all applicable NAAQS and MAAQS.	
<i>This section is:</i>	Acceptable	Date (mm/dd/yyyy):	09/23/2021

Section 3. Permit engineer results review

Has the 150-day completeness requirement been waived? No Yes

Technical review of final modeling report

Review items	Acceptable/ Unacceptable	Deficiencies and/or comments	
Are all emissions changes from the protocol adequately described and addressed?	Acceptable	No comments on this section.	
Are the emission calculations on the AQDM-02 spreadsheet consistent with permitted emissions?	Acceptable	Refer to the Recommended permit conditions or related items section.	
Are the emissions on the Nearby Sources Emission Calculations spreadsheet consistent with permitted emissions for those sources?	Acceptable	No comments on this section.	
If a general public preclusion plan is required (as noted on form AQDM-05), does the attached plan include a map that clearly displays the ambient air boundary and identifies how access is precluded for each section of the boundary?	Acceptable	No comments on this section.	
If a general public preclusion plan is required, are the boundary control strategies identified in the plan adequate?	Acceptable	No comments on this section	
<i>This section is:</i>	Acceptable	Date (mm/dd/yyyy):	09/24/2021

Recommended permit conditions or related items:	<p>Recommended Permit Conditions:</p> <p>FUGI 3/FUGI 13: vehicle traffic (denaturant and syrup truck), hours of operation (grain receiving and DDGS loadout) and process throughput limits (daily and/or annual grain receiving, DDGS, denaturant, denatured ethanol and corn oil).</p> <p>Verify site specific silt content for paved roads.</p> <p>EQUI 224 (volume source) PM10/PM2.5 emissions assume a capture efficiency of 0%, supporting the removal of the requirement to certify the hood for this permit action.</p> <p>Increase total facility process throughput limit from 133.237 to 143.486 million gallons per year 12-month rolling sum of denatured ethanol.</p> <p>EQUI 290 (proposed EQUI 254) PM10 and PM2.5.</p> <p>STRU 77 (proposed STRU 56) PM10 and PM2.5.</p> <p>STRU 78 (proposed STRU 57) PM10 and PM2.5.</p> <p>STRU 85 (proposed STRU 64) PM10 and PM2.5.</p> <p>STRU 43 PM10 and PM2.5.</p>
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Revise proposed PM10 and PM2.5 control efficiencies on TREA 37 (proposed TREA 33).

Control efficiencies on TREA 36, 38, and 39 (proposed TREA 32, 34, and 35).

Revisions to existing STRU 24 requirement; modeled PM10 at 3.560 (current Title I Condition) instead of 7.00 (current modeling limit) pounds per hour.

Move requirements (including modeled PM10 and PM2.5 limits) from EQUI 215 / EQUI 214 to STRU 45. Emission testing of PM10 and PM2.5 on STRU 45.

Revise PM2.5 modeling limit on EQUI 222 (STRU 48).

Revise PM10, PM2.5 and NOx on STRU 47.

STRU 52 PM10, PM2.5, and NOx.

STRU 41: emergency use only. Not modeled.

Related items

Note: The facility chose to overestimate PM10 and PM2.5 emissions at stacks: STRU 40, STRU 45, STRU 48, STRU 56, STRU 57, STRU 63, and STRU 64. The DDGS equipment venting to these stacks use emission factors for grain elevators (AP-42, Table 9.9.1-1) when emissions for grain processing facilities (AP-42, Table 9.9.1 2), specifically feed shipping (under animal feed mills) would be more appropriate.

EQUI 29/STRU 18 inactivated 10/5/2018 according to major amendment sent 9/27/2019.

EQUI 63/STRU 55 inactivated 10/5/2018 according to major amendment sent 9/27/2019.

Paved/unpaved road use specific to facility shutdown operation not modeled.

Section 4. Air risk assessor results review (If applicable)

Technical review of final modeling report

Review items	Acceptable/ Unacceptable/ Not applicable	Deficiencies and/or comments
Are all changes from the protocol phase adequately described and addressed in the AERA forms?	[Select from list]	No comments on this section
Do the submitted results reflect the methodology described in the AERA forms?	[Select from list]	No comments on this section
<i>This section is:</i>	Not applicable	Date (mm/dd/yyyy):
Are there any additional recommendations that will be submitted to the MPCA Air Managers?	No comments on this section	

Overall status of results

This modeling results are:	Approved
Comments on approvable-status:	

Acronyms

AERA	Air Emission Risk Analysis	MAAQS	Minnesota State Ambient Air Quality Standard
AERMAP	AERMOD Terrain Preprocessor	MPCA	Minnesota Pollution Control Agency
AERMOD	AMS/EPA Regulatory Model	NAAQS	National Ambient Air Quality Standard
AQ	Air Quality	O ₃	Ozone
AQDM	Air Quality Dispersion Modeling	PSD	Prevention of Significant Deterioration Program
AQDMRRF-01	Previous Results Review Form	SIL	Significant Impact Level
BPIP-PRIME	Building Profile Input Program for PRIME	UTM	Universal Transverse Mercator
GIS	Geographic Information System		