



**John R. Kasich**, Governor  
**Mary Taylor**, Lt. Governor  
**Craig W. Butler**, Director

7/24/2015

Certified Mail

RANDY HELMICK  
 ASK Chemicals  
 2191 WEST 110TH ST  
 CLEVELAND, OH 44102

No	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
No	MODELING SUBMITTED
Yes	SYNTHETIC MINOR TO AVOID TITLE V
Yes	FEDERALLY ENFORCABLE PTIO (FEPTIO)
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE

Facility ID: 1318000303  
 Permit Number: P0109776  
 Permit Type: Initial Installation  
 County: Cuyahoga

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install and Operate (PTIO) which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

**How to appeal this permit**

The issuance of this PTIO is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission  
 77 South High Street, 17th Floor  
 Columbus, OH 43215

## **How to save money, reduce pollution and reduce energy consumption**

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: [www.ohioairquality.org/clean\\_air](http://www.ohioairquality.org/clean_air)

## **How to give us feedback on your permitting experience**

Please complete a survey at [www.epa.ohio.gov/survey.aspx](http://www.epa.ohio.gov/survey.aspx) and give us feedback on your permitting experience. We value your opinion.

## **How to get an electronic copy of your permit**

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, [www.epa.ohio.gov/dapc](http://www.epa.ohio.gov/dapc) by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Cleveland Division of Air Quality at (216)664-2297 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Michael E. Hopkins, P.E.  
Assistant Chief, Permitting Section, DAPC

Cc: CDAQ



## Response to Comments

Facility ID:	1318000303
Facility Name:	ASK Chemicals
Facility Description:	Foundry Products (Chemical) Producer
Facility Address:	2191 WEST 110TH ST Cleveland, OH 44102 Cuyahoga County
Permit:	P0109776, Permit-To-Install and Operate - Initial Installation
A public notice for the draft permit issuance was published in the Ohio EPA Weekly Review and appeared in the The Plain Dealer on 05/13/2015. The comment period ended on 06/12/2015.	
Hearing date (if held)	
Hearing Public Notice Date (if different from draft public notice)	

The following comments were received during the comment period specified. Ohio EPA reviewed and considered all comments received during the public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health. Often, public concerns fall outside the scope of that authority. For example, concerns about zoning issues are addressed at the local level. Ohio EPA may respond to those concerns in this document by identifying another government agency with more direct authority over the issue.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format. PDF copies of the original comments in the format submitted are available upon request.

### Response to comments submitted by ASK Chemicals on June 12, June 29, July 13, and July 15, 2015:

- 1) **Comments on B.2.a), C.1.b)(1), C.2.b)(1), C.3.b)(1), C.4.b)(1), C.5.b)(1), C.6.b)(1), C.7.b)(1), C.8.b)(1), C.9.b)(1), C.10.b)(1), C.11.b)(1), C.12.b)(1), C.13.b)(1), C.14.b)(1), C.15.b)(1), C.16.b)(1), C.17.b)(1), C.18.b)(1), C.19.b)(1), C.20.b)(1), C21.b)(1), C.22.b)(1), C.23.b)(1), and C.24.b)(1):**

This is standard language from Ohio EPA. No additional changes were made to the applicable emissions limitation paragraph. For term B.2.a), the sentence was completed to make this paragraph the same as for the emissions units in Section C.

- 2) **Comment on B.2.b):**

Emissions units P016 and P017 are identified as “active” in the Facility Profile and are identified in the FEPTIO application submitted by ASK. The other emissions units have been removed as requested. Please verify that emissions units P016 and P017 have been permanently shut down before they are removed from the permit. ASK will need to update the Facility Profile to show that these emissions units have been permanently shut down.



**Cleveland DAQ Response to Comment 2:** Following further explanation of the status of emissions units P016 and P017, Cleveland DAQ has marked them invalid in the agency database facility profile and removed them from the current permit terms and conditions as requested.

3) **Comment on B.2.c):**

The changes to the amine loading operational restriction in c)(1) and c)(2) have been made as requested by ASK. The typo for “units” has been changed in c)(3).

**Cleveland DAQ Response to Comment 2:** The term located in B.2.c.(2) has been adjusted as requested by ASK.

4) **Comment on B.2.d)(4):**

The new term has been added to the permit as requested.

5) **Comment on B.2.e)(1):**

The term is standard language from Ohio EPA; therefore, no change.

6) **Comment on B.2.e)(1)a.ii:**

The term has been adjusted as requested to change to “combined”.

7) **Comment on B.2.f)(1)(a)(i), B.2.f)(1)(b)(i), C.2.f)(1)a., C.3.f)(1)a., C.4.f)(1) and (2), C.5.f)(1), C.6.f)(1)a., C.7.f)(1)a., C.8.f)(1)a., C.9.f)(1)a., C.10.f)(1)a., C.11.f)(1)a., C.12.f)(1)a., C.13.f)(1)a., C.14.f)(1)a., C.15.f)(1)a., C.17.f)(1)a., C.18.f)(1)a., C.19.f)(1)a. and C.23.f)(1)a.:**

Change has been made to increase the temperature to 70° and the equation to read 530° R. The ton/year limit will remain as written per the applicable BAT guidance (see item 10 below).

8) **Comments on C.1.e)(1), C.2.e)(1), C.3.e)(1), C.4.e)(4), C.5.e)(1), C.6.e)(1), C.7.e)(1), C.8.e)(2), C.9.e)(1), C.10.e)(1), C.11.e)(1), C.12.e)(1), C.13.e)(1), C.14.e)(1) C.15.e)(1), C.16.e)(4), C.17.e)(2), C.18.e)(2), C.19.e)(3), C.20.e)(3), C.21.e)(3), C.22.e)(2), C.23.e)(1), and C.24.e)(1):**

Standard Ohio EPA language regarding PER - will remain as written.

9) **Comments on C.1.e)(3), C.2.e)(3), C.3.e)(3), C.4.e)(5), C.5.e)(3), C.6.e)(3), C.8.e)(3), C.13.e)(2), C.14.e)(2) and (3), C.15.e)(2), C.16.e)(5), C.17.e)(1), C.18.e)(1), C.19.e)(4), C.20.e)(4), C.21.e)(4), C.22.e)(3), C.23.e)(2), and C.24.e)(2):**



Standard Ohio EPA language regarding information submittals through Air Services - will remain as written.

- 10) **Comment on C.2.b)(1) table and b(2), C.3.b)(1) table and b(2), C.4.b)(1) table and b(2), C.5.b)(1) table and b(2), C.6.b)(1) table and b(2), C.7.b)(1) table and b(2), C.8.b)(1) table and b(2), C.9.b)(1) table and b(2), C.9.b)(1) table and b(2), C.10.b)(1) table and b(2), C.11.b)(1) table and b(2), C.12.b)(1) table and b(2), C.13.b)(1) table and b(2), C.14.b)(1) table and b(2), C.17.b)(1) table and b(2), C.18.b)(1) table and b(2), C.19.b)(1) table and b(2), C.20.b)(1) table and b(2), C.21.b)(1) table and b(2), C.22.b)(1) table and b(2), C.23.b)(1) table and b(2):**

The BAT limits will remain as written. The February 7, 2014 BAT guidance document refers to emissions units installed or modified on or after August 3, 2009. Since all of the EUs were installed prior to August 2009 and have not been modified, BAT has been established according to methods used prior to August 2009 which did not include the requirements of Ohio Senate Bill 265.

- 11) **Comment on C.2.b)(1) and f)(1)a. for monthly emission limit:**

The increase was added to the lbs/month emission limit as requested by ASK.

- 12) **Comment on C.2.f)(1)b., C.3.f)(1)b., C.4.f)(1)b., C.5.f)(1)b., C.6.f)(1)b., C.7.f)(1)b., C.8.f)(1)b., C.9.f)(1)b., C.10.f)(1)b., C.11.f)(1)b., C.12.f)(1)b., C.13.f)(1)b., C.15.f)(1)b., C.14.f)(1)b., C.15.f)(1)b., C.17.f)(1)b., C.18.f)(1)b., C.19.f)(1)b., C.20.f)(1)b., C.21.f)(1)b., C.23.f)(1)b.:**

As indicated above, the BAT limits were established per the February 2014 guidance document and the ton per year emission limit located in f)(1) will remain as written.

- 13) **Comment on emission limit changes for J003:**

The emissions for J003 have been recalculated using a 200-gpm throughput and changed per the table included in ASK's comments on the draft permit. The emissions associated with J008 were separated from J003. Calculation changes can be found in C.4.f)(1)a. through d.

- 14) **Comment on C.4.c)(1) and (2), C.4.e)(1), C.8.c)(1) and (2), C.8.e)(1):**

Cleveland DAQ had removed the terms associated with the facility-wide amine throughput from the individual emissions units J003 and J008. The operational restrictions are included in the Facility-Wide portion of the permit (Section B).

Note that the new C.4.e)(1) has been revised to have quarterly reporting for the methanol throughput limitation.



15) **Comment on C.4.c)(3), C.4.e)(2):**

The methanol throughput restriction for J003 has been reduced to 1,000,000 gallons as requested for J003 as well as adjusting the pound per hour and ton per year emission limits for methanol.

16) **Comment on c) operational restrictions for J003 and J008:**

Terms regarding the vapor balance system for J003 and venting to acid scrubber for J008 were added as requested. The terms are located in C.4.c)(2) and C.8.c)(1) respectively.

**Cleveland DAQ Response to Comment 2:** The language has been adjusted as requested to change "units" to "unit".

17) **Comment on C.5.b)(1), C.5.c)(1), C.5.e)(2), and C.5.f)(1):**

The material throughput for J004 has been adjusted as requested. The pound per month and ton per year limit have been adjusted as well.

18) **Comment on emission limit changes for J008:**

The emission limits for J008 have been recalculated using a 50-gpm throughput and changed per the table included in ASK's comments on the draft permit. The emissions associated with J003 were separated from J008. Calculation changes can be found in C.8.f)(1)a. through b..

19) **Comment on C.8.d)(3) and e(1):**

Is vapor balance used in conjunction with J008? If not, the term can be removed from the permit. If vapor balance is used, what portions of the process? The term has not been removed from the permit at this time.

**Cleveland DAQ Response to Comment 2:** Following further explanation of the vapor balance controls, Cleveland DAQ has removed reference to vapor balance and vapor lines for emissions unit J008 as requested by ASK.

20) **Comment on C.9.e)(2)a. –**

The word "unloaded" has been changed to "loaded".

21) **Comment on J015 lb/month limit:**

The adjustment has been made for the monthly limit in C.11.b)(1)a., and f)(1)a..



22) **Comment on J017 throughout limit:**

The adjustment has been made for the throughput limit as well as the pound per month and ton per year limits in C.12.b)(1)a., c)(1), e)(2), and f)(1).

23) **Comment on C.13.b)(1), c)(1), e)(3), and f)(1) for P001:**

The material throughput for P001 has been adjusted as requested along with the pound per month and ton per year emission limits.

24) **Comment on C.13.d)(1)d. and C.15.d)(1)d.:**

The recordkeeping requirement requesting the tracking of hours of operation for P001 and P015 has been removed as requested.

25) **Comment on C.13.d)(1)e., C.14.d)(1)e., C.15.d)(1)e., C.17.d)(1)e:**

The tracking of VOC emissions has been changed to monthly for emissions units P001, P012, P015, P028. Cleveland DAQ has also adjusted the paragraph regarding calculation methodologies and acceptable documents for emission factors.

26) **Comment of P012 emission factor:**

The emission factor has been adjusted as requested along with the pound per month and ton per year emission limits.

27) **Comment on C.14.c)(2):**

This term has been deleted since this emissions unit is not equipped with submerged fill or side wall filling.

28) **Comment of P015 emission factor:**

The emission factor has been adjusted as requested along with the pound per month and ton per year emission limits.

29) **Comment on C.15.c)(1):**

The typographical error was corrected for the word "any".

30) **CDAQ Note regarding PER term for J012, J013, J015, and J018:**

Cleveland DAQ noted that the report term in regards to Air Services was missing from section e). This term has been added.

31) **Comment on C.16.c)(2) and (3):**

The terms associated with the pressure drop and pH of the scrubber liquor were identified in the Operational Restrictions of the PTI (PTI 13-04505). At this time, the terms will remain as an operational restriction.

32) **Comment on C.16.e)(4):**

The PER term for P022 has been adjusted as requested to add the missing wording from the term.

33) **Comment of P028 emission factor:**

The emission factor has been adjusted as requested along with the pound per month and ton per year emission limits.

34) **Comment of P029 emission factor:**

The emission factor has been adjusted as requested along with the pound per month and ton per year emission limits.

35) **Comment on T123, T140, and T154:**

Cleveland DAQ did not remove these emissions units from the permit as requested. The amines are stored in the tanks and the calculated emissions are for the breathing and working losses of the tanks. The emissions for the associated loading racks were calculated separately. Cleveland DAQ does not feel that the emissions were double counted.

**Cleveland DAQ Response to Comment 2:** Based on Cleveland DAQ's understanding of the loading rack and storage tank emissions per the discussions with ASK, we do not feel it is appropriate to remove storage tanks T123, T140, and T154 for the reasons noted in the above comment. The language in b)(2) for these tanks has been modified as requested by ASK.

36) **Comment on C.19.c)(1), C.20.c)(1), C.21.c)(1):**

Cleveland DAQ agrees with the request to delete the requirement as written. In order to provide clarification, an additional term was added to b)(2) - additional terms and conditions.



37) **Comment on C.19.d)(2), C.20.d)(2), C.21.d)(2), and C.24.d)(2):**

The term for pH has been removed as requested.

38) **Comment on C.20.b)(2):**

The term has been adjusted as requested for "loading bulk materials".

39) **Comment on C.22.a)(2):**

The term has been adjusted as requested to add the word "None".

40) **Comment on C.23.a)(2):**

The term has been adjusted to identify terms b)(1)b., c)(1), d)(1), and e)(3) as federally enforceable.

41) **Comment on C.23.b)(1), C.5.c)(1), C.5.e)(2), and C.5.f)(1):**

The material throughput for J014 and J018 have been adjusted as requested along with the pound per month and ton per year emission limits.

42) **Comment on C.24.a)(2):**

The term has been adjusted as requested to add the word "None".

43) **Comment on C.24.(f)(1)a.:**

The reference to d)(2) has been changed to d)(3). The d)(3) term has been modified to address the appropriate record keeping to determine hourly and daily VOC emissions. ASK will need to verify that this revised record keeping is the correct approach for determining the VOC emissions for these emissions units.

**Cleveland DAQ Response to Comment 2:** The language and method of emission calculation has been adjusted in term d)(3) as requested by ASK.

44) **Cleveland DAQ note regarding emission units install dates:**

Cleveland DAQ has added the install dates of the emissions units throughout the permit. The install dates are located in section g). This was added to assist in the determination of BAT requirements.

**Cleveland DAQ Response to Comment 2:** The dates of installation for each emissions unit have been retained in the permit. It has been our experience that including the date of installation is very helpful for future reference in order to understand how a permit was prepared. We have included the



**Response to Comments**  
ASK Chemicals  
**Permit Number:** P0109776  
**Facility ID:** 1318000303

date of installation in this manner for many other permits. The installation dates have been adjusted as requested.



**FINAL**

**Division of Air Pollution Control  
Permit-to-Install and Operate  
for  
ASK Chemicals**

Facility ID:	1318000303
Permit Number:	P0109776
Permit Type:	Initial Installation
Issued:	7/24/2015
Effective:	7/24/2015
Expiration:	7/24/2020





**Division of Air Pollution Control  
Permit-to-Install and Operate**

for  
ASK Chemicals

**Table of Contents**

Authorization .....	1
A. Standard Terms and Conditions .....	5
1. What does this permit-to-install and operate ("PTIO") allow me to do?.....	6
2. Who is responsible for complying with this permit? .....	6
3. What records must I keep under this permit? .....	6
4. What are my permit fees and when do I pay them?.....	6
5. When does my PTIO expire, and when do I need to submit my renewal application? .....	6
6. What happens to this permit if my project is delayed or I do not install or modify my source? .....	7
7. What reports must I submit under this permit? .....	7
8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit? .....	7
9. What are my obligations when I perform scheduled maintenance on air pollution control equipment? ...	7
10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report? .....	8
11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located? .....	8
12. What happens if one or more emissions units operated under this permit is/are shut down permanently? .....	8
13. Can I transfer this permit to a new owner or operator?.....	9
14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"? .....	9
15. What happens if a portion of this permit is determined to be invalid? .....	9
B. Facility-Wide Terms and Conditions.....	10
C. Emissions Unit Terms and Conditions .....	19
1. B007, Boiler B007 .....	20
2. J001: Bulk Unloading Station #1 .....	23
3. J002: Bulk Product Loading Station #2 .....	27
4. J003: Bulk Flammable Loading/Unloading Station #3 .....	31
5. J004: Bulk Product Loading Station #4 .....	37
6. J005: Bulk Unloading Station #5 .....	41
7. J007, Bulk Unloading Station #7 .....	44
8. J008: Loading Station #8 .....	47
9. J012: Loading Station #12 .....	51



10. J013: Loading Station #13 .....	55
11. J015: Drum Filling Station #1 .....	59
12. J017: Loading Station #17 .....	63
13. P001, Foundry resin blending system .....	67
14. P012, TK-215.....	70
15. P015: Blend Tank #221.....	74
16. P022: Methanol recovery unit.....	78
17. P028: Tank #218.....	83
18. P029: Tank #87 (Building 2).....	87
19. T123: TK-137 .....	91
20. T140: TK-139.....	96
21. T154: TK-140 .....	101
22. Emissions Unit Group - Boilers: B005 and B006 .....	106
23. Emissions Unit Group - Loading Rack Group 6: J014 and J018.....	110
24. Emissions Unit Group - Reactors: P010 and P011 .....	114



**Final Permit-to-Install and Operate**  
ASK Chemicals  
**Permit Number:** P0109776  
**Facility ID:** 1318000303  
**Effective Date:** 7/24/2015

## Authorization

Facility ID: 1318000303  
Application Number(s): A0043439, A0045949, A0051383, A0051729, A0052480  
Permit Number: P0109776  
Permit Description: First issue FEPTIO permit for boilers, storage tanks, filling operations, loading racks and blend tanks.  
Permit Type: Initial Installation  
Permit Fee: \$5,100.00  
Issue Date: 7/24/2015  
Effective Date: 7/24/2015  
Expiration Date: 7/24/2020  
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

ASK Chemicals  
2191 WEST 110TH ST  
Cleveland, OH 44102

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

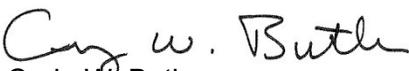
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Cleveland Division of Air Quality  
2nd Floor  
75 Erievue Plaza  
Cleveland, OH 44114  
(216)664-2297

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the described emissions unit(s) will operate in compliance with applicable State and federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

  
Craig W. Butler  
Director



## Authorization (continued)

Permit Number: P0109776  
Permit Description: First issue FEPTIO permit for boilers, storage tanks, filling operations, loading racks and blend tanks.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

<b>Emissions Unit ID:</b>	<b>B007</b>
Company Equipment ID:	Boiler #3
Superseded Permit Number:	P0052089
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>J001</b>
Company Equipment ID:	J001
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>J002</b>
Company Equipment ID:	J002
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>J003</b>
Company Equipment ID:	J003
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>J004</b>
Company Equipment ID:	J004
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>J005</b>
Company Equipment ID:	J005
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>J007</b>
Company Equipment ID:	J007
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>J008</b>
Company Equipment ID:	J008
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>J012</b>
Company Equipment ID:	J012
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>J013</b>
Company Equipment ID:	J013
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



**Emissions Unit ID: J015**  
 Company Equipment ID: J015  
 Superseded Permit Number:  
 General Permit Category and Type: Not Applicable

**Emissions Unit ID: J017**  
 Company Equipment ID: J017  
 Superseded Permit Number:  
 General Permit Category and Type: Not Applicable

**Emissions Unit ID: P001**  
 Company Equipment ID: Foundary resin blending system  
 Superseded Permit Number: P0052090  
 General Permit Category and Type: Not Applicable

**Emissions Unit ID: P012**  
 Company Equipment ID: TK-215  
 Superseded Permit Number:  
 General Permit Category and Type: Not Applicable

**Emissions Unit ID: P015**  
 Company Equipment ID: Core oil mix tank # 221  
 Superseded Permit Number: P0052104  
 General Permit Category and Type: Not Applicable

**Emissions Unit ID: P022**  
 Company Equipment ID: Methanol recovery unit  
 Superseded Permit Number: 13-04505  
 General Permit Category and Type: Not Applicable

**Emissions Unit ID: P028**  
 Company Equipment ID: Tank #218  
 Superseded Permit Number: P0052244  
 General Permit Category and Type: Not Applicable

**Emissions Unit ID: P029**  
 Company Equipment ID: Tank #87 (building 2)  
 Superseded Permit Number: P0052188  
 General Permit Category and Type: Not Applicable

**Emissions Unit ID: T123**  
 Company Equipment ID: 12000 GAL. TRETHYLAMINE STG. TANK #137  
 Superseded Permit Number: P0052230  
 General Permit Category and Type: Not Applicable

**Emissions Unit ID: T140**  
 Company Equipment ID: TK-139  
 Superseded Permit Number:  
 General Permit Category and Type: Not Applicable

**Emissions Unit ID: T154**  
 Company Equipment ID: Tank #140  
 Superseded Permit Number: 13-04496  
 General Permit Category and Type: Not Applicable

**Group Name: Boilers**

<b>Emissions Unit ID:</b>	<b>B005</b>
Company Equipment ID:	Boiler
Superseded Permit Number:	13-04681
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>B006</b>
Company Equipment ID:	Boiler



**Final Permit-to-Install and Operate**  
 ASK Chemicals  
**Permit Number:** P0109776  
**Facility ID:** 1318000303  
**Effective Date:** 7/24/2015

Superseded Permit Number:	13-04681
General Permit Category andType:	Not Applicable

**Group Name: Loading Racks**

<b>Emissions Unit ID:</b>	<b>J014</b>
Company Equipment ID:	J014
Superseded Permit Number:	
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>J018</b>
Company Equipment ID:	J018
Superseded Permit Number:	
General Permit Category andType:	Not Applicable

**Group Name: Reactors**

<b>Emissions Unit ID:</b>	<b>P010</b>
Company Equipment ID:	R-301
Superseded Permit Number:	
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P011</b>
Company Equipment ID:	R-302
Superseded Permit Number:	
General Permit Category andType:	Not Applicable



**Final Permit-to-Install and Operate**  
ASK Chemicals  
**Permit Number:** P0109776  
**Facility ID:** 1318000303  
**Effective Date:** 7/24/2015

## **A. Standard Terms and Conditions**

**1. What does this permit-to-install and operate ("PTIO") allow me to do?**

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

**2. Who is responsible for complying with this permit?**

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

**3. What records must I keep under this permit?**

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

**4. What are my permit fees and when do I pay them?**

There are two fees associated with permitted air contaminant sources in Ohio:

- PTIO fee. This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

- Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. For facilities that are permitted as synthetic minor sources, the fee schedule is adjusted annually for inflation. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

**5. When does my PTIO expire, and when do I need to submit my renewal application?**

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is

very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

**6. What happens to this permit if my project is delayed or I do not install or modify my source?**

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

**7. What reports must I submit under this permit?**

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

**8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?**

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions of this permit will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

**9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?**

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.

**10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?**

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the [DO/LAA] in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

**11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?**

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

**12. What happens if one or more emissions units operated under this permit is/are shut down permanently?**

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emission unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as being permanently shut down without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

**13. Can I transfer this permit to a new owner or operator?**

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.

**14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?**

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

**15. What happens if a portion of this permit is determined to be invalid?**

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.



**Final Permit-to-Install and Operate**  
ASK Chemicals  
**Permit Number:** P0109776  
**Facility ID:** 1318000303  
**Effective Date:** 7/24/2015

## **B. Facility-Wide Terms and Conditions**

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

(1) None.

2. Applicable Emission Limitations and/or Control Requirements

a) The specific operation(s), property, and/or equipment that constitute each emissions unit, along with the applicable rules and/or requirements and with the applicable emission limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emission Limitations/ Control Measures
a.	OAC rule 3745-31-05(D)(1) FEPTIO to avoid Title V	Volatile Organic Compound (VOC) emissions from the facility shall not exceed 99.5 tons per rolling, 12-month summation.  See b)(1) and b)(2) below.

b) Additional Terms and Conditions

(1) The emission of Hazardous Air Pollutants (HAPs) from this facility shall not exceed 9.9 tons for any single HAP and 24.9 tons from any combination of HAPs based on a rolling, 12-month summation of the monthly HAP material usage rates.

(2) The facility-wide VOC and HAP emission limitation shall include the following units: B005 through B007, B008, B009, J001 through J018, P001, P010 to P015, P020, P022, P024, P025, P028, P029, T004, T005, T029, T034 to T046, T049, T050, T057 to T059, T077 - T079, T082 to T084, T086 to T101, T104 to T110, T113, T114, T123 to T140, T148, T149, T152 to T157, and T164 to T167.

c) Operational Restrictions

(1) The maximum annual Triethylamine (TEA), and Dimethylethylamine (DMEA) throughput shall not exceed 890,000-gallons for each amine, based on a rolling, twelve month

summation of usage rates. Based on the facility-wide potential to emit established by the permittee, the maximum of 890,000-gallons of each amine can be unloaded through emissions unit J003 and subsequently packaged into containers through emissions unit J008.

- (2) The maximum annual Dimethylpropylamine (DMPA) and Dimethylisopropylamine (DMIPA) throughput shall not exceed 890,000-gallons combined, based on a rolling, twelve month summation of usage rates. Based on the facility-wide potential to emit established by the permittee, the maximum of 890,000-gallons of combined amines can be unloaded to the bulk storage tanks through J003, and the same 890,000-gallons of combined amines can either be loaded into bulk tank trucks through emissions unit J003 or packaged into containers through emissions unit J008.
- (3) The maximum annual volatile organic material usage for all of the emissions units listed in 2.b)(2) shall not exceed 99.5 tons, based on a rolling, 12-month summation of the volatile organic material usage figures.

d) **Monitoring and Recordkeeping Requirements**

- (1) The permittee shall collect and record the following information each month for this facility:
  - a. the company identification for each VOC-containing material processed;
  - b. the total VOC content of each VOC-containing material processed;
  - c. the amount of each VOC-containing material processed during the previous calendar month;
  - d. the gallons processed, or other emissions determining rationale, of all VOC-emitting sources (i.e. mixing, blending, container filling, loading and unloading);
  - e. the total VOC emissions from all VOC-containing materials processed, in pounds or tons per month; and
  - f. the rolling, 12-month summation of all VOC-emitting sources, in tons.
- (2) The permittee shall collect and record the following information each month for this facility:
  - a. the company identification for each HAP-containing material processed;
  - b. the individual HAP content of each HAP-emitting material processed;
  - c. the total combined HAP content of each HAP-emitting material (i.e. sum of all individual HAP contents from b. above) processed;
  - d. the amount of each HAP-emitting material processed during the previous calendar month;

- e. the gallons processed, or other emissions determining rationale, of all HAP-generating sources (i.e. mixing, blending, container filling, loading and unloading);
  - f. the total individual HAP emissions from all HAP-emitting materials processed and all HAP-generating sources, in pounds or tons per month;
  - g. the total combined HAP emissions from all HAP-emitting materials processed and all HAP-generating sources, in pounds or tons per month;
  - h. the rolling, 12-month summation of individual HAP emissions from all HAP-emitting materials processed and all HAP generating sources, in tons; and
  - i. the rolling, 12-month summation of total combined HAP emissions from all HAP-emitting materials processed, and all HAP-generating sources, in tons.
- (3) The permittee shall collect and record the throughput (in gallons) for each amine identified in c)(1) above.
  - (4) The permittee shall collect and record the combined throughput (in gallons) for the amines identified in c)(2) above.
  - (5) The permittee shall maintain monthly records of the amount of natural gas burned, in mmcf, facility-wide.
- e) Reporting Requirements
- (1) The permittee shall submit quarterly deviation (excursion) reports that identify:
    - a. all deviations (excursions) of the following emission limitations, operational restrictions, and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and that have been detected by the monitoring, recordkeeping, and/or testing requirements in this permit:
      - i. identification of each month during which the rolling, 12-month summation of Triethylamine (TEA), and Dimethylethylamine (DMEA) throughput exceeds 890,000-gallons for each amine;
      - ii. identification of each month during which the rolling, 12-month summation of Dimethylpropylamine (DMPA) and Dimethylisopropylamine (DMIPA) throughput exceeds 890,000-gallons combined;
      - iii. identification of each month during which the rolling, 12-month individual HAP material usage and emissions exceeded 9.9 tons per year;
      - iv. identification of each month during which the rolling, 12-month combined HAP material usage and emissions exceeded 24.9 tons per year;
      - v. identification of each month during which the rolling, 12-month VOC material usage exceeds 99.5 tons, based on a rolling, 12-month summation.



- b. the probable cause for each deviation (excursion);
- c. any corrective actions that were taken to remedy the deviations (excursions) or to prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter the permittee shall submit a report that states no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted electronically through Ohio EPA Air Services each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director, the appropriate District Office or Local Air Agency.

- (2) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the emission limitation(s) in b) of these terms and conditions shall be determined in accordance with the following methods:

- a. Emissions Limitation:

VOC emissions shall not exceed 99.5 tons per rolling, 12-month summation for this facility.

Applicable Compliance Method:

Compliance shall be determined based on the recordkeeping requirements specified in d)(1).

To calculate VOC emission rates, the permittee shall employ the following:

- i. VOC emissions from mixing, blending, container filling, and loading and unloading shall be determined using loading loss calculation equation one (1), from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{SxPxM}{T}$$

Where:

L<sub>L</sub> = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin ( $^{\circ}\text{F} + 460$ )

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = \text{lb VOC}/1,000 \text{ gal}$$

(lb VOC/1,000 gallons) x (total gallons of material transferred/year) = pounds of VOC emitted/year

- ii. VOC emissions from the methanol recovery and purification system were established at the emissions unit's potential to emit as determined by the following calculations:

$$\text{Total VOC} = (\text{VOC distillation column}) + (\text{VOC surge tank}) \times (1 - \text{CE})$$

$$\text{Total VOC} = (0.55 \text{ lb/hr}) + (2.0942 \text{ lbs}/1,000 \text{ gals}) \times (189.2 \text{ gals/hour}) \times (1 - 0.85)$$

Total VOC is the sum of methanol and formaldehyde emissions. Trace amounts of phenol also contribute to the total VOC.

- iii. VOC emissions from reactors equipped with caustic scrubbers shall be calculated as follows:

$$\text{lbs material processed} \times \% \text{ by weight VOC} \times \text{control efficiency of caustic scrubber} \times 1 \text{ ton}/2000 \text{ lbs} = \text{tons VOC/year}$$

- iv. VOC emissions from boilers capable of burning natural gas and/or phenolic resin distillate shall be calculated as follows:

VOC emissions from the combustion of natural gas shall be calculated by multiplying an emission factor of 5.5 lbs VOC/mmscf by the annual amount of natural gas burned then divided by 2000 lbs:

$$5.5 \text{ lbs VOC}/\text{mmscf} \times \text{mmscf}/\text{yr} \times 1 \text{ ton}/2000 \text{ lbs} = \text{tons VOC}/\text{yr}$$

This emission factor is specified in U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-2(1/95).

- v. VOC emissions from storage tanks shall be determined using a current version of U.S. EPA's TANKS software program and the recordkeeping requirements specified in d)(1) above.

b. Emissions Limitation:

Individual HAP emissions shall not exceed 9.9 tons per rolling, 12-month summation for this facility.

Applicable Compliance Method:

Compliance shall be determined based on the recordkeeping requirements specified in d)(2).

To calculate the individual HAP emission rates, the permittee shall employ the following:

- i. HAP emissions from mixing, blending, container filling, and loading and unloading shall be determined using loading loss calculation equation one (1), from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = \text{lb VOC}/1,000 \text{ gal}$$

(lb VOC/1,000 gallons) x (total gallons of material transferred/year) \* (% by weight individual HAP) \* (1 ton/2000 lbs) = tons individual HAP emitted/year

- ii. HAP emissions from the methanol recovery and purification system were established at the emissions unit's potential to emit as determined by the following calculations:

- (a) Formaldehyde emissions:

This emissions limitation was established at the unit's potential to emit as determined by the following calculations:

Total Formaldehyde = (formaldehyde distillation column) + (formaldehyde surge tank) x (1-CE)

Total Formaldehyde = (0.05 lb/hr) + (1.9931 lbs/1,000 gals) x (189.2 gal/hour) x (1-0.85)

The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and

dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitations shall be assumed provided compliance is maintained with the pound per hour limitation.

(b) Methanol emissions:

Total Methanol = (methanol distillation column) + (methanol surge tank) x (1-CE)

Total Methanol = (0.05 lb/hr) + (1.1011 lbs/1,000 gals) x (189.2 gal/hour) x (1-0.85)

The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitations shall be assumed provided compliance is maintained with the pound per hour limitation.

iii. HAP emissions from reactors equipped with caustic scrubbers shall be calculated as follows:

lbs material processed \* % by weight individual HAP \* control efficiency of caustic scrubber \* 1 ton/2000 lbs = tons individual HAP/year

iv. HAP emissions from boilers capable of burning natural gas and/or phenolic resin distillate shall be calculated as follows:

(a) HAP emissions from natural gas combustion:

HAP emissions from combustion of natural gas shall be calculated by multiplying the appropriate HAP emissions factors HAP/mmscf by the annual amount of natural gas burned then divided by 2000 lbs

The emissions factors are specified in U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-3(1/95).

(b) HAP emissions from phenolic resin distillate:

HAP emissions from combustion phenolic resin distillate shall be calculated by multiplying the HAP components of phenolic resin distillate (i.e. phenol and formaldehyde) in percent by weight by the amount in gallons burned annually and divided by 2000 lbs.

v. HAP emissions from storage tanks shall be determined using a current version of U.S. EPA's TANKS software program and the recordkeeping requirements specified in d)(1) above.



c. Emissions Limitation:

Combined HAP emissions shall not exceed 24.9 tons per rolling, 12-month summation for this facility.

Applicable Compliance Method:

Compliance shall be determined based on the recordkeeping requirements specified in d)(2).

To determine total combined HAP emissions, sum the calculated annual emission rates for each individual HAP from each source type identified above.

- (2) VOC and HAP emissions were calculated utilizing worst case scenario process data (materials, molecular weights, vapor pressure, etc.) as provided by ASK Chemicals in FEPTIO application A0052480.



**Final Permit-to-Install and Operate**  
ASK Chemicals  
**Permit Number:** P0109776  
**Facility ID:** 1318000303  
**Effective Date:** 7/24/2015

## **C. Emissions Unit Terms and Conditions**

**1. B007, Boiler B007**

**Operations, Property and/or Equipment Description:**

8.4 MMBTU natural gas fired boiler.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) PTI 13-02243 issued 1/30/1991	Particulate emissions (PE) shall not exceed 0.02 pounds per million BTU of heat input.  Visible particulate emissions (PE) shall not exceed 5% opacity.
b.	OAC rule 3745-17-07(A)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
c.	OAC rule 3745-17-10(C)(1)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
d.	OAC rule 3745-18-06(B)	Exempt. See b)(2)a. below.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-31-05(D)(1) FEPTIO to avoid Title V	See Section B.

(2) Additional Terms and Conditions

a. The emissions unit is exempt from the requirements of OAC rule 3745-18-06 because the total rated heat input capacity for this boiler is less than 10 mmBtu/hr.

c) Operational Restrictions

- (1) The permittee shall only burn natural gas in this emissions unit.
- (2) The permittee shall operate and maintain the fuel burners in accordance with the manufacturer's recommendations to ensure efficient combustion of the fuel(s).

d) Monitoring and/or Recordkeeping Requirements

(1) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

e) Reporting Requirements

- (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
- (2) The permittee shall identify in the PER each day during which a fuel other than natural gas is burned in this emissions unit.
- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:



a. Emissions Limitation:

PE shall not exceed 0.02 lb per mmBtu.

Applicable Compliance Method:

If required, compliance with the allowable particulate emissions limit shall be determined through emissions testing conducted in accordance with U.S. EPA Reference Methods 1 through 5 of 40 CFR Part 60, Appendix A.

b. Emissions Limitation:

Visible PE shall not exceed 5% opacity.

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using methods and procedures specified in U.S. EPA Reference Method 9.

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1991, PTI issued January 1991.

**2. J001: Bulk Unloading Station #1**

**Operations, Property and/or Equipment Description:**

Bulk Unloading Station #1 (200 gallons per minute)

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) **Applicable Emissions Limitations and/or Control Requirements**

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Volatile organic compound (VOC) emissions shall not exceed 1,338.8 pounds per month and 8.03 tons per year (TPY) from this emissions unit.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).
b.	OAC rule 3745-31-05(D)	See Section B.

(2) **Additional Terms and Conditions**

a. The emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future the permittee shall use them, provided the emission factors are mutually

agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.

- b. The pounds of VOC per month and tons per year emissions limitations for this emissions unit were established to reflect the potential to emit.
- c) **Operational Restrictions**
  - (1) This emissions unit shall not transfer more than 107,031,828 gallons of material in any rolling, 12-month period.
  - (2) All leaks in the liquid lines shall be repaired within five days after identification.
  - (3) The permittee shall not permit liquid to be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation.
- d) **Monitoring and/or Recordkeeping Requirements**
  - (1) The permittee shall maintain monthly records of the following information for the VOC-containing materials loaded at this emissions unit:
    - a. the company identification of each material loaded;
    - b. the number of gallons of each VOC-containing material loaded through the emissions unit;
    - c. the molecular weight of each material; and
    - d. the vapor pressure of each material, in pounds per square inch absolute.
  - (2) The permittee shall maintain annual records of the total VOC emissions, in tons (an annual summation of the monthly VOC emissions, in pounds, divided by 2,000 pounds per ton).
- e) **Reporting Requirements**
  - (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
  - (2) The permittee shall include in the Annual PER, any such record showing a deviation of the allowable production limitation. Such records shall include the following information:
    - a. an identification of each rolling 12-month period during which the material transferred exceeded 107,031,828 gallons; and
    - b. a description of any corrective actions taken to address the exceedances identified above.

- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 1,338.8 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.1501 \text{ lb VOC/1,000 gal}$$

(0.1501 lb VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 107,031,828 gallons per rolling, 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 8.03 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in f)(1)a. above, and multiplied by 1 ton/2,000 pounds.



**Final Permit-to-Install and Operate**

ASK Chemicals

**Permit Number:** P0109776

**Facility ID:** 1318000303

**Effective Date:** 7/24/2015

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1970 and modified early to mid 1990's.

**3. J002: Bulk Product Loading Station #2**

**Operations, Property and/or Equipment Description:**

Bulk Product Loading Station #2 (150 gallons per minute)

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	<p>Volatile organic compound (VOC) emissions shall not exceed 1,161 pounds per month and 6.97 tons per year (TPY) from this emissions unit.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).</p>
b.	OAC rule 3745-31-05(D)	See Section B.

(2) Additional Terms and Conditions

a. The emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future the permittee shall use them, provided the emission factors are mutually

agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.

- b. The pounds of VOC per month and tons per year emissions limitations for this emissions unit were established to reflect the potential to emit.
- c) **Operational Restrictions**
  - (1) This emissions unit shall not transfer more than 80,671,296 gallons of material in any rolling, 12-month period.
  - (2) All leaks in the liquid lines shall be repaired within five days after identification.
  - (3) The permittee shall not permit liquid to be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation.
- d) **Monitoring and/or Recordkeeping Requirements**
  - (1) The permittee shall maintain monthly records of the following information for the VOC-containing materials loaded at this emissions unit:
    - a. the company identification of each material loaded;
    - b. the number of gallons of each VOC-containing material loaded through the emissions unit;
    - c. the molecular weight of each material; and
    - d. the vapor pressure of each material, in pounds per square inch absolute.
  - (2) The permittee shall maintain annual records of the total VOC emissions, in tons (an annual summation of the monthly VOC emissions, in pounds, divided by 2,000 pounds per ton).
- e) **Reporting Requirements**
  - (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
  - (2) The permittee shall include in the Annual PER, any such record showing a deviation of the allowable production limitation. Such records shall include the following information:
    - a. an identification of each rolling 12-month period during which the material transferred exceeded 80,671,296 gallons; and
    - b. a description of any corrective actions taken to address the exceedances identified above.

- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 1,161 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.1728 \text{ lb VOC/1,000 gal}$$

(0.1728 lb VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 80,671,296 gallons per rolling, 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 6.97 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in f)(1)a. above, and multiplied by 1 ton/2,000 pounds.



g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1970 and modified with new reactor building in 1988.

**4. J003: Bulk Flammable Loading/Unloading Station #3**

**Operations, Property and/or Equipment Description:**

Bulk Flammable Loading/Unloading Station #3 (200 gallons per minute).

- a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
  - (1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
    - a. None.
  - (2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
    - a. None.
- b) Applicable Emissions Limitations and/or Control Requirements
  - (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Volatile organic compound (VOC) emissions shall not exceed 141.1 pounds per hour from this emissions unit . VOC emissions shall not exceed 10.83 tons per year (TPY) from this emissions unit. Methanol emissions shall not exceed 17.95 pounds per hour and 0.75 TPY from this emissions unit. The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).
b.	OAC rule 3745-31-05(D)	See Section B. See c)(3) below.

- (2) Additional Terms and Conditions
- a. The emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future, the permittee shall use them, provided the emission factors are mutually agreeable between the Ohio EPA through the Cleveland Division of Air Quality and ASK Chemicals.
  - b. The pounds of VOC per hour and tons per year emissions limitations for this emissions unit were established to reflect the potential to emit.
- c) Operational Restrictions
- (1) The maximum annual methanol throughput from J003 shall not exceed 1,000,000 gallons, based on a rolling, twelve month summation of usage rates.
  - (2) All loading and unloading through this emissions unit shall employ vapor balance systems. The amine emissions, except for storage tank breathing losses, shall be vented to the acid scrubber at all times this emissions unit is in operation.
  - (3) The permittee shall employ a submerged fill process when safely possible.
  - (4) There shall be no leaks in the vapor or liquid lines during the transfer of material.
  - (5) All leaks in the liquid or vapor lines shall be repaired within five days after identification.
  - (6) The permittee shall not permit liquid to be spilled, discarded into sewers, stored in open containers, or handled in any other manner that would result in evaporation.
- d) Monitoring and/or Recordkeeping Requirements
- (1) The permittee shall maintain monthly records of the following information for the VOC-containing materials loaded at this emissions unit:
    - a. the company identification of each material loaded;
    - b. the number of gallons of each VOC-containing material loaded through the emissions unit;
    - c. the molecular weight of each material; and
    - d. the vapor pressure of each material, in pounds per square inch absolute.
  - (2) The permittee shall maintain records of the results of any leak checks, including at a minimum, the following information:
    - a. the date of the inspection;
    - b. findings (may indicate that no leaks were discovered or the location, nature, and severity of each leak);

- c. leak determination method utilized (e.g. visual, odor, etc.); and
  - d. corrective action(s) taken (date each leak was repaired and any reason a repair interval exceeded fifteen calendar days).
- (3) The permittee shall maintain a log of the date and description of all repair/maintenance work performed and/or any other modifications made to the vapor balance system.
- (4) The permittee shall maintain annual records of the total VOC emissions, in tons (an annual summation of the monthly VOC emissions, in pounds, divided by 2,000 pounds per ton).
- e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports that identify:
- a. identification of each month during which the rolling, 12-month summation of Methanol exceeds a throughput of 1,000,000-gallons;
  - b. the probable cause for each deviation (excursion);
  - c. any corrective actions that were taken to remedy the deviations (excursions) or to prevent future deviations (excursions); and
  - d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter the permittee shall submit a report that states no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted electronically through Ohio EPA Air Services each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director, the appropriate District Office or Local Air Agency.

- (2) The permittee shall submit reports that outline the occurrence of any leak from the vapor balance system that is not repaired within 15 days after identification of the leak. These reports shall be submitted to the Cleveland DAQ within 30 days after the repair is completed.
- (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
- (4) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 141.1 pounds per hour from this emissions unit.

Applicable Compliance Method:

The loading loss was established using a pumping rate of 200-gallons per minute and the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 11.76 \text{ lbs VOC/1,000 gal}$$

(11.76 lbs VOC/1,000 gallons) x (200 gallons/minute) x (60 minutes/hour) = pounds of VOC emitted/hour

b. Emissions Limitation:

VOC emissions shall not exceed 10.83 TPY from this emissions unit.

Applicable Compliance Method:

The annual VOC emission limitation was established using the following equations:

DMEA = (890,000 gal/yr) x (11.76 lbs VOC/1,000 gal) x (1 ton/2,000 lbs) = 5.23 tons per year

DMIPA/DMPA (unload bulk to tank) = (890,000 gal/yr) x (4.98 lbs VOC/1,000 gal) x (1 ton/2,000 lbs) = 2.22 tons per year

TEA (unload bulk to tank) = (890,000 gal/yr) x (2.61 lbs VOC/1,000 gal) x (1 ton/2,000 lbs) = 1.16 tons per year



DMIPA/DMPA (load tank to tanker) = (890,000 gal/yr) x (4.98 lbs VOC/1,000 gal) x (1 ton/2,000 lbs) = 2.22 tons per year

(5.23 tons/year DMEA) + (2.22 tons/year DMIPA/DMPA bulk to tank) +(1.16 tons/year TEA) + (2.22 tons/year DMIPA/DMPA tank to tanker)= 10.83 tons per year

Therefore, compliance with the annual VOC emission limitation is ensured while compliance is maintained with the maximum of 890,000-gallons each for Triethylamine (TEA), and Dimethylethylamine (DMEA), and 890,000-gallons for Dimethylpropylamine (DMPA) and Dimethylisopropylamine (DMIPA) combined, based on a rolling, twelve month summation of usage rates.

c. Emissions Limitation:

Methanol emissions shall not exceed 17.95 pounds per hour from this emissions unit.

Applicable Compliance Method:

The loading loss was established using a pumping rate of 200-gallons per minute and the methanol liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

L<sub>L</sub> = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 1.496 \text{ lbs VOC/1,000 gal}$$

(1.496 lbs VOC/1,000 gallons) x (200 gallons/minute) x (60 minutes/hour) = 17.95 pounds of methanol emitted per hour.

d. Emissions Limitation:

Methanol emissions shall not exceed 0.75 TPY from this emissions unit.

Applicable Compliance Method:

The annual methanol emission limitation was established using the following equation:



**Final Permit-to-Install and Operate**

ASK Chemicals

**Permit Number:** P0109776

**Facility ID:** 1318000303

**Effective Date:** 7/24/2015

$$\begin{aligned} \text{Methanol} &= (1,000,000 \text{ gallons/yr}) \times (1.496 \text{ lb VOC/1,000 gal}) \times (1 \text{ ton/2,000 lbs}) \\ &= 0.75\text{TPY} \end{aligned}$$

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1986 with T123, modified in 1989 (T124), 1992 (T140), and again in 2005 (T154).

**5. J004: Bulk Product Loading Station #4**

**Operations, Property and/or Equipment Description:**

Bulk Product Loading Station #4 (150 gallons per minute)

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Volatile organic compound (VOC) emissions shall not exceed 210.2 pounds per month and 1.26 tons per year (TPY) from this emissions unit.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).
b.	OAC rule 3745-31-05(D)	See Section B.

(2) Additional Terms and Conditions

a. The emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future the permittee shall use them, provided the emission factors are mutually

agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.

- b. The pounds of VOC per month and tons per year emissions limitations for this emissions unit were established to reflect the potential to emit.
- c) **Operational Restrictions**
  - (1) This emissions unit shall not transfer more than 31,536,000 gallons of material in any rolling, 12-month period.
  - (2) All leaks in the liquid lines shall be repaired within five days after identification.
  - (3) The permittee shall not permit liquid to be spilled, discarded into sewers, stored in open containers, or handled in any other manner that would result in evaporation.
- d) **Monitoring and/or Recordkeeping Requirements**
  - (1) The permittee shall maintain monthly records of the following information for the VOC-containing materials loaded at this emissions unit:
    - a. the company identification of each material loaded;
    - b. the number of gallons of each VOC-containing material loaded through the emissions unit;
    - c. the molecular weight of each material; and
    - d. the vapor pressure of each material, in pounds per square inch absolute (psia).
  - (2) The permittee shall maintain annual records of the total VOC emissions, in tons (an annual summation of the monthly VOC emissions, in pounds, divided by 2,000 pounds per ton).
- e) **Reporting Requirements**
  - (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
  - (2) The permittee shall include in the Annual PER, any record showing a deviation of the allowable production limitation. Such records shall include the following information:
    - a. an identification of each rolling, 12-month period during which the material transferred exceeded 31,536,000-gallons; and
    - b. a description of any corrective actions taken to address the exceedances identified above.

- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 210.2 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.08 \text{ lb VOC/1,000 gal}$$

(0.08 lb VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 31,536,000 gallons per rolling, 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 1.26 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in f)(1)a. above, and multiplied by 1 ton/2,000 pounds.



**Final Permit-to-Install and Operate**  
ASK Chemicals  
**Permit Number:** P0109776  
**Facility ID:** 1318000303  
**Effective Date:** 7/24/2015

- g) Miscellaneous Requirements
  - (1) This emissions unit was installed in 2005.

**6. J005: Bulk Unloading Station #5**

**Operations, Property and/or Equipment Description:**

Bulk Unloading Station #5 (200 gallons per minute).

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) **Applicable Emissions Limitations and/or Control Requirements**

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Volatile organic compound (VOC) emissions shall not exceed 372 pounds per month and 2.23 tons per year (TPY) from this emissions unit.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D)
b.	OAC rule 3745-31-05(D)	See Section B.

(2) **Additional Terms and Conditions**

a. The emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future, the permittee shall use them, provided the emission factors are mutually

agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.

- b. The pounds of VOC per month and tons per year emissions limitations for this emissions unit were established to reflect the potential to emit.
- c) **Operational Restrictions**
  - (1) This emissions unit shall not transfer more than 111,500,000 gallons of material in any rolling 12-month period.
  - (2) The permittee shall utilize railcar dip-tubes when provided during railcar unloading.
  - (3) All leaks in the liquid lines shall be repaired within five days after identification.
  - (4) The permittee shall not permit liquid to be spilled, discarded into sewers, stored in open containers, or handled in any other manner that would result in evaporation.
- d) **Monitoring and/or Recordkeeping Requirements**
  - (1) The permittee shall maintain monthly records of the following information for the VOC-containing materials loaded at this emissions unit:
    - a. the company identification of each material loaded;
    - b. the number of gallons of each VOC-containing material loaded through the emissions unit;
    - c. the molecular weight of each material; and
    - d. the vapor pressure of each material, in pounds per square inch absolute (psia).
  - (2) The permittee shall maintain annual records of the total VOC emissions, in tons (an annual summation of the monthly VOC emissions, in pounds, divided by 2,000 pounds per ton).
- e) **Reporting Requirements**
  - (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
  - (2) The permittee shall include in the Annual PER, any record showing a deviation of the allowable production limitation. Such records shall include the following information:
    - a. an identification of each rolling 12-month period during which the material transferred (unloaded) exceeded 111,500,000-gallons; and

- b. a description of any corrective actions taken to address the exceedances identified above.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 372.0 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.04 \text{ lb VOC/1,000 gal}$$

(0.04 lb VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 111,500,000 gallons per rolling, 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 2.23 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in f)(1)a. above, and multiplied by 1 ton/2,000 pounds.

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1970 and modified in 1989.

**7. J007, Bulk Unloading Station #7**

**Operations, Property and/or Equipment Description:**

Bulk Unloading Station #7 (150 gallons per minute)

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) **Applicable Emissions Limitations and/or Control Requirements**

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Volatile organic compound (VOC) emissions shall not exceed 469 pounds per month and 2.81 tons per year (TPY) from this emissions unit.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D)
b.	OAC rule 3745-31-05(D)	See Section B.

(2) **Additional Terms and Conditions**

a. The emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future the permittee shall use them, provided the emission factors are mutually

agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.

- b. The pounds of VOC per month and tons per year emissions limitations for this emissions unit were established to reflect the potential to emit.
- c) **Operational Restrictions**
  - (1) This emissions unit shall not transfer more than 80,285,714 gallons of material in any rolling 12-month period.
  - (2) All leaks in the liquid lines shall be repaired within five days after identification.
  - (3) The permittee shall not permit liquid to be spilled, discarded into sewers, stored in open containers, or handled in any other manner that would result in evaporation.
- d) **Monitoring and/or Recordkeeping Requirements**
  - (1) The permittee shall maintain monthly records of the following information for the VOC-containing materials loaded at this emissions unit:
    - a. the company identification of each material loaded;
    - b. the number of gallons of each VOC-containing material loaded through the emissions unit;
    - c. the molecular weight of each material; and
    - d. the vapor pressure of each material, in pounds per square inch absolute (psia).
  - (2) The permittee shall maintain annual records of the total VOC emissions, in tons (an annual summation of the monthly VOC emissions, in pounds, divided by 2,000 pounds per ton).
- e) **Reporting Requirements**
  - (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
  - (2) The permittee shall include in the Annual PER, of any record showing a deviation of the allowable production limitation. Such records shall include the following information:
    - a. an identification of each rolling, 12-month period during which the material transferred (unloaded) exceeded 80,285,714 gallons; and
    - b. a description of any corrective actions taken to address the exceedances identified above.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 469.0 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.07 \text{ lb VOC/1,000 gal}$$

(0.07 lb VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 80,285,714 gallons, per rolling 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 2.81 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in f)(1)a. above, and multiplied by 1 ton/2,000 pounds.

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1977.

**8. J008:Loading Station #8**

**Operations, Property and/or Equipment Description:**

Amine Cylinder and Pail Filling Station #7 (50 gallons per minute).

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Volatile organic compound (VOC) emissions shall not exceed 35.3 pounds per hour from this emissions unit.  VOC emissions shall not exceed 8.61 tons per year (TPY) from this emissions unit.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).
b.	OAC rule 3745-31-05(D)	See Section B.

(2) Additional Terms and Conditions

a. The emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future,

the permittee shall use them, provided the emission factors are mutually agreeable between the Ohio EPA through the Cleveland Division of Air Quality (Cleveland DAQ) and ASK Chemicals.

- b. The pounds of VOC per month and tons per year emissions limitations for this emissions unit were established to reflect the potential to emit.
- c) **Operational Restrictions**
  - (1) Cylinder filling operations, emissions from the return cylinders and the ventilation air from the drumming hood shall be vented to the acid scrubber.
  - (2) The permittee shall employ a submerged fill process when safely possible.
  - (3) There shall be no leaks in the liquid lines during the transfer of material.
  - (4) All leaks in the liquid lines shall be repaired within five days after identification.
  - (5) The permittee shall not permit liquid to be spilled, discarded into sewers, stored in open containers, or handled in any other manner that would result in evaporation.
- d) **Monitoring and/or Recordkeeping Requirements**
  - (1) The permittee shall maintain monthly records of the following information for the VOC-containing materials loaded at this emissions unit:
    - a. the company identification of each material loaded;
    - b. the number of gallons of each VOC-containing material loaded through the emissions unit;
    - c. the molecular weight of each material; and
    - d. the vapor pressure of each material, in pounds per square inch absolute.
  - (2) The permittee shall maintain records of the results of any leak checks, including at a minimum, the following information:
    - a. the date of the inspection;
    - b. findings (may indicate that no leaks were discovered or the location, nature, and severity of each leak);
    - c. leak determination method utilized (e.g. visual, odor, etc.); and
    - d. corrective action(s) taken (date each leak was repaired and any reason a repair interval exceeded fifteen calendar days).
  - (3) The permittee shall maintain annual records of the total VOC emissions, in tons (an annual summation of the monthly VOC emissions, in pounds, divided by 2,000 pounds per ton).

e) Reporting Requirements

- (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
- (2) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 35.3 pounds per hour from this emissions unit.

Applicable Compliance Method:

The loading loss was established using a pumping rate of 50-gallons per minute and the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 11.76 \text{ lbs VOC/1,000 gal}$$

(11.76 lbs VOC/1,000 gallons) x (50 gallons/minute) x (60 minutes/hour) = pounds of VOC emitted/hour

b. Emissions Limitation:

VOC emissions shall not exceed 8.61 TPY from this emissions unit.

Applicable Compliance Method:

The annual VOC emission limitation was established using the following equations:



$DMEA = (890,000 \text{ gal/yr}) \times (11.76 \text{ lbs VOC/1,000 gal}) \times (1 \text{ ton/2,000 lbs}) = 5.23$   
tons per year

$DMIPA/DMPA = (890,000 \text{ gal/yr}) \times (4.98 \text{ lbs VOC/1,000 gal}) \times (1 \text{ ton/2,000 lbs}) =$   
2.22 tons per year

$TEA = (890,000 \text{ gal/yr}) \times (2.61 \text{ lbs VOC/1,000 gal}) \times (1 \text{ ton/2,000 lbs}) = 1.16$   
tons per year

$(5.23 \text{ tons/year DMEA}) + (2.22 \text{ tons/year DMIPA/DMPA}) + (1.16 \text{ tons/year TEA})$   
 $= 8.61 \text{ tons per year}$

Therefore, compliance with the annual VOC emission limitation is ensured while compliance is maintained with the maximum of 890,000-gallons each for Triethylamine (TEA), and Dimethylethylamine (DMEA), and 890,000-gallons for Dimethylpropylamine (DMPA) and Dimethylisopropylamine (DMIPA) combined, based on a rolling, twelve month summation of usage rates.

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1986 and modified in 1992 and 2005 with additions of T140 and T154 respectively.

**9. J012: Loading Station #12**

**Operations, Property and/or Equipment Description:**

Mini Tank Filling Station #12 (100 gallons per minute).

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) **Applicable Emissions Limitations and/or Control Requirements**

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Volatile organic compound (VOC) emissions shall not exceed 774.0 pounds per month and 4.64 tons per year (TPY) from this emissions unit.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D)
b.	OAC rule 3745-31-05(D)	See Section B.

(2) **Additional Terms and Conditions**

a. The emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future the permittee shall use them, provided the emission factors are mutually

agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.

- b. The pounds of VOC per month and tons per year emissions limitations for this emissions unit were established to reflect the potential to emit.
- c) **Operational Restrictions**
  - (1) This emissions unit shall not transfer more than 53,641,618 gallons of material in any rolling 12-month period.
  - (2) All leaks in the liquid lines shall be repaired within five days after identification.
  - (3) The permittee shall not permit liquid to be spilled, discarded into sewers, stored in open containers, or handled in any other manner that would result in evaporation.
- d) **Monitoring and/or Recordkeeping Requirements**
  - (1) The permittee shall maintain monthly records of the following information for the VOC-containing materials loaded at this emissions unit:
    - a. the company identification of each material loaded;
    - b. the number of gallons of each VOC-containing material loaded through the emissions unit;
    - c. the molecular weight of each material; and
    - d. the vapor pressure of each material, in pounds per square inch absolute (psia).
  - (2) The permittee shall maintain annual records of the total VOC emissions, in tons (an annual summation of the monthly VOC emissions, in pounds, divided by 2,000 pounds per ton).
- e) **Reporting Requirements**
  - (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
  - (2) The permittee shall include in the Annual PER, of any record showing a deviation of the allowable production limitation. Such records shall include the following information:
    - a. an identification of each rolling 12-month period during which the material transferred (loaded) exceeded 53,641,618 gallons; and
    - b. a description of any corrective actions taken to address the exceedances identified above.

- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 774.0 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.173 \text{ lb VOC/1,000 gal}$$

(0.173 lb VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 53,641,618 gallons, per rolling 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 4.64 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in f)(1)a. above, and multiplied by 1 ton/2,000 pounds.



**Final Permit-to-Install and Operate**

ASK Chemicals

**Permit Number:** P0109776

**Facility ID:** 1318000303

**Effective Date:** 7/24/2015

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1990, based on install date of 215Tk (P012).



**10. J013: Loading Station #13**

**Operations, Property and/or Equipment Description:**

Drum and Tote Filling Station #13 (100 gallons per minute).

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	<p>Volatile organic compound (VOC) emissions shall not exceed 773.3 pounds per month and 4.64 tons per year (TPY) from this emissions unit.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D)</p>
b.	OAC rule 3745-31-05(D)	See Section B.

(2) Additional Terms and Conditions

a. The emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future the permittee shall use them, provided the emission factors are mutually

agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.

- b. The pounds of VOC per hour and tons per year emissions limitations for this emissions unit were established to reflect the potential to emit.
- c) **Operational Restrictions**
  - (1) This emissions unit shall not transfer more than 53,641,618 gallons of material in any rolling 12-month period.
  - (2) All leaks in the liquid lines shall be repaired within five days after identification.
  - (3) The permittee shall not permit liquid to be spilled, discarded into sewers, stored in open containers, or handled in any other manner that would result in evaporation.
- d) **Monitoring and/or Recordkeeping Requirements**
  - (1) The permittee shall maintain monthly records of the following information for the VOC-containing materials loaded at this emissions unit:
    - a. the company identification of each material loaded;
    - b. the number of gallons of each VOC-containing material loaded through the emissions unit;
    - c. the molecular weight of each material; and
    - d. the vapor pressure of each material, in pounds per square inch absolute (psia).
  - (2) The permittee shall maintain annual records of the total VOC emissions, in tons (an annual summation of the monthly VOC emissions, in pounds, divided by 2,000 pounds per ton).
- e) **Reporting Requirements**
  - (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
  - (2) The permittee shall include in the Annual PER, of any record showing a deviation of the allowable production limitation. Such records shall include the following information:
    - a. an identification of each rolling, 12-month period during which the material transferred (unloaded) exceeded 53,641,618 gallons; and
    - b. a description of any corrective actions taken to address the exceedances identified above.

- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 773.3 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.173 \text{ lb VOC/1,000 gal}$$

(0.173 lb VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 53,641,618 gallons, per rolling 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 4.64 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in f)(1)a. above, and multiplied by 1 ton/2,000 pounds.



**Final Permit-to-Install and Operate**

ASK Chemicals

**Permit Number:** P0109776

**Facility ID:** 1318000303

**Effective Date:** 7/24/2015

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1991, based on install date of 221Tk (P015).

**11. J015: Drum Filling Station #1**

**Operations, Property and/or Equipment Description:**

Drum Filling Station #1 (100 gallons per minute).

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) **Applicable Emissions Limitations and/or Control Requirements**

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Volatile organic compound (VOC) emissions shall not exceed 338.13 pounds per month and 2.03 tons per year (TPY) from this emissions unit.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D)
b.	OAC rule 3745-31-05(D)	See Section B.

(2) **Additional Terms and Conditions**

a. The emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future the permittee shall use them, provided the emission factors are mutually

agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.

- b. The pounds of VOC per day and tons per year emissions limitations for this emissions unit were established to reflect the potential to emit.
- c) **Operational Restrictions**
  - (1) This emissions unit shall not transfer more than 52,560,000 gallons of material in any rolling, 12-month period.
  - (2) All leaks in the liquid lines shall be repaired within five days after identification.
  - (3) The permittee shall not permit liquid to be spilled, discarded into sewers, stored in open containers, or handled in any other manner that would result in evaporation.
- d) **Monitoring and/or Recordkeeping Requirements**
  - (1) The permittee shall maintain monthly records of the following information for the VOC-containing materials loaded at this emissions unit:
    - a. the company identification of each material loaded;
    - b. the number of gallons of each VOC-containing material loaded through the emissions unit;
    - c. the molecular weight of each material; and
    - d. the vapor pressure of each material, in pounds per square inch absolute (psia).
  - (2) The permittee shall maintain annual records of the total VOC emissions, in tons (an annual summation of the monthly VOC emissions, in pounds, divided by 2,000 pounds per ton).
- e) **Reporting Requirements**
  - (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
  - (2) The permittee shall include in the Annual PER, of any record showing a deviation of the allowable production limitation. Such records shall include the following information:
    - a. an identification of each rolling, 12-month period during which the material transferred (unloaded) exceeded 52,560,000 gallons; and
    - b. a description of any corrective actions taken to address the exceedances identified above.

- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 338.13 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.0772 \text{ lb VOC/1,000 gal}$$

(0.0772 lb VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 52,560,000 gallons, per rolling 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 2.03 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in f)(1)a. above, and multiplied by 1 ton/2,000 pounds.



**Final Permit-to-Install and Operate**

ASK Chemicals

**Permit Number:** P0109776

**Facility ID:** 1318000303

**Effective Date:** 7/24/2015

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1994 (P016), per PTI application dated 6/2/1994.

**12. J017:Loading Station #17**

**Operations, Property and/or Equipment Description:**

Drum Filling Station #17

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) **Applicable Emissions Limitations and/or Control Requirements**

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Volatile organic compound (VOC) emissions shall not exceed 242.8 pounds per month and 1.46 tons per year (TPY) from this emissions unit.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D)
b.	OAC rule 3745-31-05(D)	See Section B.

(2) **Additional Terms and Conditions**

a. The emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future the permittee shall use them, provided the emission factors are mutually

agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.

- b. The pounds of VOC per month and tons per year emissions limitations for this emissions unit were established to reflect the potential to emit.
- c) **Operational Restrictions**
  - (1) This emissions unit shall not transfer more than 21,024,000 gallons of material in any rolling, 12-month period.
  - (2) All leaks in the liquid lines shall be repaired within five days after identification.
  - (3) The permittee shall not permit liquid to be spilled, discarded into sewers, stored in open containers, or handled in any other manner that would result in evaporation.
- d) **Monitoring and/or Recordkeeping Requirements**
  - (1) The permittee shall maintain monthly records of the following information for the VOC-containing materials loaded at this emissions unit:
    - a. the company identification of each material loaded;
    - b. the number of gallons of each VOC-containing material loaded through the emissions unit;
    - c. the molecular weight of each material; and
    - d. the vapor pressure of each material, in pounds per square inch absolute (psia).
  - (2) The permittee shall maintain annual records of the total VOC emissions, in tons (an annual summation of the monthly VOC emissions, in pounds, divided by 2,000 pounds per ton).
- e) **Reporting Requirements**
  - (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
  - (2) The permittee shall include in the Annual PER, of any record showing a deviation of the allowable production limitation. Such records shall include the following information:
    - a. an identification of each rolling 12-month period during which the material transferred (unloaded) exceeded 21,024,000 gallons; and
    - b. a description of any corrective actions taken to address the exceedances identified above.

- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 242.8 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.1386 \text{ lb VOC/1,000 gal}$$

(0.1386 lb VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 21,024,000 gallons per rolling, 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 1.46 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in f)(1)a. above, and multiplied by 1 ton/2,000 pounds.



**Final Permit-to-Install and Operate**  
ASK Chemicals  
**Permit Number:** P0109776  
**Facility ID:** 1318000303  
**Effective Date:** 7/24/2015

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1977.

**13. P001, Foundry resin blending system**

**Operations, Property and/or Equipment Description:**

Foundry Liquid Resin Blending (BT-55, BT-66, and BT-57)

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) PTI 13-01553 issued final 5/28/1986	Volatile organic Compound (VOC) emissions shall not exceed 379.2 pounds per month and 2.28 tons per year (TPY) from this emissions unit.
b.	OAC rule 3745-21-07(M)	See b)(2)a. below.
c.	OAC rule 3745-31-05(D)(1)	See Section B.

(2) Additional Terms and Conditions

a. The requirements of OAC rule 3745-21-07(M) do not apply to this emissions unit because there is no control device associated with this emissions unit.

c) Operational Restrictions

- (1) The above emissions unit shall not blend or mix more than 93,434,160 gallons of material in any rolling, 12-month period.
- (2) The tanks shall be kept covered at all times, except when production, sampling, and inspection procedures require access.
- (3) The cleaning of the tanks with any organic solvent shall be done with the tank completely covered or enclosed to the extent possible.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall keep the following monthly records for this emissions unit:
  - a. the company identification of each organic compound employed/blended;
  - b. the number of gallons of each organic compound employed/blended;
  - c. the VOC content of each material blended, in pounds per gallon;
  - d. the vapor pressure of the VOC containing material being blended, in pounds per square inch absolute (psia); and
  - e. the monthly VOC emissions from all VOC-containing materials employed/blended in this emissions unit. The monthly VOC emissions shall be calculated using the loading loss emission estimates from the emissions calculations included with the permit application and detailed in f)(1)a. below, USEPA reference document AP-42, Fifth Edition Compilation of Air Pollution Emission Factors, Chapter 7, or an equivalent document..

e) Reporting Requirements

- (1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
- (3) The permittee shall include in the Annual PER, of any record showing a deviation of the allowable production limitation. Such records shall include the following information:
  - a. an identification of each rolling, 12-month period during which the material mixed/blended exceeded the 93,434,160 gallons each year; and
  - b. a description of any corrective actions taken to address the exceedances identified above.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 379.2 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.0487 \text{ lb VOC/1,000 gal}$$

(0.0487 lb VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 93,434,160 gallons per rolling, 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 2.28 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in f)(1)a. above, and multiplied by 1 ton/2,000 pounds.

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1986.

**14. P012, TK-215**

**Operations, Property and/or Equipment Description:**

6,000 gallon Blend Tank

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) **Applicable Emissions Limitations and/or Control Requirements**

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	<p>Volatile organic compound (VOC) emissions shall not exceed 36.85 pounds per month and 0.22 ton per year (TPY) from this emissions unit.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).</p>
b.	OAC rule 3745-21-07(M)	See b)(2)a. below.
c.	OAC rule 3745-31-05(D)	See Section B.

(2) **Additional Terms and Conditions**

a. The requirements of OAC rule 3745-21-07(M) do not apply to this emissions unit because there is no control device associated with this emissions unit.

- b. The emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future the permittee shall use them, provided the emission factors are mutually agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.
  - c. The pounds of VOC per month and tons per year emissions limitations for this emissions unit were established to reflect the potential to emit.
- c) Operational Restrictions
- (1) This emissions unit shall not blend or mix more than 2,559,139 gallons of material in any rolling, 12-month period.
- d) Monitoring and/or Recordkeeping Requirements
- (1) The permittee shall maintain monthly records of the following information for this emissions unit:
    - a. the company identification of each organic compound employed/blended;
    - b. the number of gallons of each organic compound employed/blended;
    - c. the VOC content of each material blended, in pounds per gallon;
    - d. the vapor pressure of the VOC containing material being blended, in pounds per square inch absolute (psia); and
    - e. the monthly VOC emissions from all VOC-containing materials employed/blended in this emissions unit. The monthly VOC emissions shall be calculated using the loading loss emission estimates from the emissions calculations included with the permit application and detailed in f)(1)a. below, USEPA reference document AP-42, Fifth Edition Compilation of Air Pollution Emission Factors, Chapter 7, or an equivalent document.
- e) Reporting Requirements
- (1) The permittee shall submit quarterly deviation (excursion) reports that include an identification of each month during which the monthly VOC emission limitations for this emissions unit were exceeded, and what the monthly VOC emissions were for each such month.
  - (2) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
  - (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.

- (4) The permittee shall include in the Annual PER, any record showing a deviation of the allowable production limitation. Such records shall include the following information:
- a. an identification of each rolling 12-month period during which the material mixed/blended exceeded 2,559,139 gallons; and
  - b. any corrective actions taken to address the exceedances identified above.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 36.85 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.1728 \text{ lb VOC/1,000 gal}$$

(0.1728 lbs VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 2,559,139 gallons per rolling, 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 0.22 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in f)(1)a. above, and multiplied by 1 ton/2,000 pounds.

g) Miscellaneous Requirements

- (1) Modeling to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F)(4)(b), was not necessary because the emissions units maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a “modification” as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase above 1.0 ton per year may require the permittee to apply for an obtain a new permit to install.
- (2) This emissions unit was installed in 1990.

**15. P015:Blend Tank #221**

**Operations, Property and/or Equipment Description:**

950-gallon Blend Tank.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) **Applicable Emissions Limitations and/or Control Requirements**

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) PTI 13-02358 issued final 10/30/1991	Volatile organic compound (VOC) emissions shall not exceed 36.1 pounds per month and 0.22 ton per year (TPY) from this emissions unit.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).
b.	OAC rule 3745-21-07(M)	See b)(2)a. below.
c.	OAC rule 3745-31-05(D)	See Section B.

(2) **Additional Terms and Conditions**

a. The requirements of OAC rule 3745-21-07(M) do not apply to this emissions unit because there is no control device associated with this emissions unit.

- b. The emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future the permittee shall use them, provided the emission factors are mutually agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.
  - c. The pounds of VOC per hour and tons per year emissions limitations for this emissions unit were established to reflect the potential to emit.
- c) Operational Restrictions
- (1) This emissions unit shall not blend or mix more than 2,508,960 gallons of material in any rolling, 12-month period.
- d) Monitoring and/or Recordkeeping Requirements
- (1) The permittee shall maintain monthly records of the following information for this emissions unit:
    - a. the company identification of each organic compound employed/blended;
    - b. the number of gallons of each organic compound employed/blended;
    - c. the VOC content of each material blended, in pounds per gallon;
    - d. the vapor pressure of the VOC containing material being blended, in pounds per square inch absolute (psia); and
    - e. the monthly VOC emissions from all VOC-containing materials employed/blended in this emissions unit. The monthly VOC emissions shall be calculated using the loading loss emission estimates from the emissions calculations included with the permit application and detailed in f)(1)a. below, USEPA reference document AP-42, Fifth Edition Compilation of Air Pollution Emission Factors, Chapter 7, or an equivalent document.
- e) Reporting Requirements
- (1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
  - (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
  - (3) The permittee shall include in the Annual PER, any record showing a deviation of the allowable production limitation. Such records shall include the following information:

- a. an identification of each rolling 12-month period during which the material mixed/blended exceeded 2,508,960 gallons; and
- b. any corrective actions taken to address the exceedances identified above.

f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 36.1 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.1728 \text{ lbs VOC/1,000 gal}$$

(0.1728 lbs VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 2,508,960 gallons per rolling, 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 0.22 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in d)(1) above and multiplied by 1 ton/2,000 pounds.

g) Miscellaneous Requirements

- (1) Modeling to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F)(4)(b), was not necessary because the emissions units maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a “modification” as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase above 1.0 ton per year may require the permittee to apply for an obtain a new permit to install.
- (2) This emissions unit was installed in 1991.

**16. P022:Methanol recovery unit**

**Operations, Property and/or Equipment Description:**

Methanol Recovery and Purification System.

- a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
  - (1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
    - a. None.
  - (2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
    - a. None.
- b) Applicable Emissions Limitations and/or Control Requirements
  - (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) PTI 13-04505 issued 4/26/2005	<p>Volatile organic compound (VOC) emissions shall not exceed 0.14 pound per hour and 0.62 ton per year (TPY).</p> <p>Formaldehyde emissions shall not exceed 0.065 pound per hour and 0.28 TPY.</p> <p>Methanol emissions shall not exceed 0.078 pound per hour and 0.34 TPY.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).</p>
b.	OAC rule 3745-31-05(D)	See Section B.

(2) Additional Terms and Conditions

- a. The hourly and annual emission limits were established at the emission unit's potential to emit; therefore, monitoring, recordkeeping, and reporting are not required to demonstrate compliance with these limits.
- b. The emissions from this emissions unit shall be vented to the wet scrubber at all times the emissions unit is in operation. The wet scrubber must maintain an overall control efficiency of a minimum of 85%.
- c. All VOC emissions from this emissions unit shall be vented to the condenser that shall meet the operational, monitoring, and recordkeeping requirements of this permit, when this emissions unit is in operation.

c) Operational Restrictions

- (1) The wet scrubber shall be operated at all times when this emissions unit is in operation.
- (2) The pressure drop across the scrubber shall be maintained between 2.0 and 7.0 inches of water when this emissions unit is in operation.
- (3) The scrubber liquor pH shall be maintained within the range of 11.5 to 14.0 when this emissions unit is in operation.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly install, operate, and maintain equipment to monitor the pH of the scrubber liquor and the pressure drop across the scrubber while the emissions unit is in operation. The pH monitor and the pressure drop monitor shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

The permittee shall collect and record the following information each day:

- a. the pH of the scrubber liquor, on a once per shift basis;
- b. the pressure drop across the scrubber, on a once per shift basis; and
- c. a log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

e) Reporting Requirements

- (1) The permittee shall submit written deviation (excursion) reports to the Cleveland Division of Air Quality (Cleveland DAQ) that identify any instance in which this emissions unit was in operation and the permittee did not operate the wet scrubber. The report shall include a copy of such record and shall be sent to the Cleveland DAQ within 30 days after the exceedance occurs.
- (2) The permittee shall submit written quarterly pressure drop deviation (excursion) reports to the Cleveland DAQ that identify each day during which the pressure drop across the

scrubber did not comply with the pressure drop requirements specified in c)(2) above. The report shall identify the actual pressure drop across the scrubber and include any corrective actions that were taken to bring the unit into compliance.

- (3) The permittee shall submit written quarterly pH deviation (excursion) reports to the Cleveland DAQ that identify each day during which the scrubber liquor pH did not comply with the pH requirements specified in c)(3) above. The report shall identify the actual pH of the scrubber liquor and include any corrective actions that were taken to bring the unit into compliance.
- (4) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the Director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
- (5) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 0.14 pound per hour and 0.62 TPY.

Applicable Compliance Method:

The emissions limit was established at the emissions unit's potential to emit as determined by the following calculations:

$$\text{Total VOC} = (\text{VOC distillation column}) + (\text{VOC surge tank}) \times (1 - \text{CE})$$

$$\text{Total VOC} = (0.55 \text{ lb/hr}) + (2.0942 \text{ lbs/1,000 gals}) \times (189.2 \text{ gals/hour}) \times (1 - 0.85)$$

Total VOC is the sum of methanol and formaldehyde emissions. Trace amounts of phenol also contribute to the total VOC.

If required, compliance shall be determined using USEPA Methods 18, 24, or 25A of 40 CFR Part 60, Appendix A.

The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitations shall be assumed provided compliance is maintained with the pound per hour limitation.

b. Emissions Limitation:

Formaldehyde emissions shall not exceed 0.065 pound per hour and 0.28 TPY.

Applicable Compliance Method:

This emissions limit was established at the unit's potential to emit as determined by the following calculations:

Total Formaldehyde = (formaldehyde distillation column) + (formaldehyde surge tank) x (1-CE)

Total Formaldehyde = (0.05 lb/hr) + (1.9931 lbs/1,000 gals) x (189.2 gal/hour) x (1-0.85)

If required, compliance shall be determined using USEPA Method 18 of 40 CFR Part 60, Appendix A.

The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitations shall be assumed provided compliance is maintained with the pound per hour limitation.

c. Emissions Limitation:

Methanol emissions shall not exceed 0.078 pound per hour and 0.34 TPY.

Applicable Compliance Method:

Total Methanol = (methanol distillation column) + (methanol surge tank) x (1-CE)

Total Methanol = (0.05 lb/hr) + (1.1011 lbs/1,000 gals) x (189.2 gal/hour) x (1-0.85)

If required, compliance shall be determined using USEPA Method 18 of 40 CFR Part 60, Appendix A.

The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitations shall be assumed provided compliance is maintained with the pound per hour limitation.

g) Miscellaneous Requirements

- (1) Modeling to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F)(4)(b), was not necessary because the emissions units maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air



**Final Permit-to-Install and Operate**

ASK Chemicals

**Permit Number:** P0109776

**Facility ID:** 1318000303

**Effective Date:** 7/24/2015

contaminant to increase above 1.0 ton per year may require the permittee to apply for an obtain a new permit to install.

- (2) This emissions unit was installed in 2005, per installation certificate dated 12/16/2005.

**17. P028:Tank #218**

**Operations, Property and/or Equipment Description:**

1,200 gallon Blend Tank.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Volatile organic compound (VOC) emissions shall not exceed 15.9 pounds per month and 0.1 ton per year (TPY) from this emissions unit.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).
b.	OAC rule 3745-21-07(M)	See b)(2)a. below.
c.	OAC rule 3745-31-05(D)	See Section B.

(2) Additional Terms and Conditions

a. The requirements of OAC rule 3745-21-07(M) do not apply to this emissions unit because there is no control device associated with this emissions unit.

- b. The VOC emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future the permittee shall use them, provided the emission factors are mutually agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.
- c) **Operational Restrictions**
  - (1) This emissions unit shall not blend more than 1,583,561 gallons of material in any rolling, 12-month period.
- d) **Monitoring and/or Recordkeeping Requirements**
  - (1) The permittee shall maintain monthly records of the following information for this emissions unit:
    - a. the company identification of each organic compound employed/blended;
    - b. the number of gallons of each organic compound employed/blended;
    - c. the VOC content of each material blended, in pounds per gallon;
    - d. the vapor pressure of the VOC containing material being blended in pounds per square inch absolute (psia); and
    - e. the monthly VOC emissions from all VOC containing materials employed/blended in this emissions unit. The monthly VOC emissions shall be calculated by using either loading loss emissions estimates from the emission calculations included with the permit application and detailed in f)(1)a. below, USEPA reference document AP-42, Fifth Edition Compilation of Air Pollution Emission Factors, Chapter 7, or an equivalent document.
- e) **Reporting Requirements**
  - (1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
  - (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-month for each air contaminant source identified in this permit.
  - (3) The permittee shall include in the annual PER, any record showing a deviation of the allowable production limitation. Such records shall include the following information:
    - a. an identification of each rolling, 12-month period during which the material blended exceeded 1,583,561 gallons; and

- b. a description of any corrective actions taken to address the exceedances identified above.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 15.9 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.1204 \text{ lbs VOC/1,000 gal}$$

(0.1204 lbs VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 1,583,561 gallons per rolling, 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 0.1 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in f)(1)a. above, and multiplied by 1 ton/2,000 pounds.

g) Miscellaneous Requirements

- (1) Modeling to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F)(4)(b), was not necessary because the emissions units maximum annual



**Final Permit-to-Install and Operate**

ASK Chemicals

**Permit Number:** P0109776

**Facility ID:** 1318000303

**Effective Date:** 7/24/2015

emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a “modification” as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase above 1.0 ton per year may require the permittee to apply for an obtain a new permit to install.

- (2) This emissions unit was installed in 1990.

**18. P029:Tank #87 (Building 2)**

**Operations, Property and/or Equipment Description:**

2,305 gallon Blend Tank.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	<p>Volatile organic compound (VOC) emissions shall not exceed 20.3 pounds per month and 0.12 ton per year (TPY) from this emissions unit.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).</p>
b.	OAC rule 3745-21-07(M)	See b)(2)a. below.
c.	OAC rule 3745-31-05(D)	See Section B.

(2) Additional Terms and Conditions

a. The requirements of OAC rule 3745-21-07(M) do not apply to this emissions unit because there is no control device associated with this emissions unit.

- b. The VOC emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future the permittee shall use them, provided the emission factors are mutually agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.
- c) Operational Restrictions
  - (1) This emissions unit shall not blend more than 1,761,230 gallons of material in any rolling, 12-month period.
- d) Monitoring and/or Recordkeeping Requirements
  - (1) The permittee shall maintain monthly records of the following information for this emissions unit:
    - a. the company identification of each organic compound employed/blended;
    - b. the number of gallons of each organic compound employed/blended;
    - c. the VOC content of each material blended, in pounds per gallon;
    - d. the vapor pressure of the VOC containing material being blended in psia; and
    - e. the monthly VOC emissions from all VOC-containing materials employed/blended in this emissions unit. The monthly VOC emissions shall be calculated by using either loading loss emissions estimates from the emission calculations included with the permit application and detailed in f)(1)a. below, USEPA reference document AP-42, Fifth Edition Compilation of Air Pollution Emission Factors, Chapter 7, or an equivalent document.
- e) Reporting Requirements
  - (1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
  - (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-month for each air contaminant source identified in this permit.
  - (3) The permittee shall include in the annual PER, any record showing a deviation of the allowable production limitation. Such records shall include the following information:
    - a. an identification of each rolling, 12-month period during which the material blended exceeded 1,761,230 gallons; and
    - b. a description of any corrective actions taken to address the exceedances identified above.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 20.3 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{5300} = 0.1386 \text{ lbs VOC/1,000 gal}$$

(0.1386 lbs VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 1,761,230 gallons per rolling, 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 0.12 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through the summation of the total monthly VOC emissions as described in f)(1)a. above, and multiplied by 1 ton/2,000 pounds.

g) Miscellaneous Requirements

- (1) Modeling to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F)(4)(b), was not necessary because the emissions units maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by



**Final Permit-to-Install and Operate**

ASK Chemicals

**Permit Number:** P0109776

**Facility ID:** 1318000303

**Effective Date:** 7/24/2015

OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase above 1.0 ton per year may require the permittee to apply for an obtain a new permit to install.

- (2) This emissions unit was installed in 1984.

**19. T123:TK-137**

**Operations, Property and/or Equipment Description:**

12,000-gallon fixed roof amine storage tank controlled by vapor balance and associated with an acidic scrubber.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Volatile organic compound (VOC) emissions shall not exceed 1.2 tons per year (TPY) from this emissions unit.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).
b.	OAC rule 3745-21-09(L)(2)	Exempt. See b)(2)e. below.
c.	OAC rule 3745-31-05(D)	See Section B.
d.	40 CFR Part 60, Subpart Kb	Exempt. See b)(2)a. below.

(2) Additional Terms and Conditions

- a. The emissions unit is not subject to 40 CFR Part 60, Subpart Kb, because the capacity is less than 75 m<sup>3</sup>.
- b. During filling operations, the emissions from this emissions unit shall be vented to the scrubber. Return cylinders and ventilation air from the drumming hood also shall be vented to the scrubber. Storage tank breathing emissions shall be vented to a breather valve set at 8 oz/in<sup>2</sup>.
- c. The emissions from this emissions unit, except for the storage tank breathing losses, shall be vented to this scrubber at all times when this emissions unit is in operation.
- d. Vapor balance shall be used while unloading bulk materials into this emissions unit.
- e. This emissions unit is exempted from paragraph (L)(1) of OAC rule 3745-21-09 per the requirements of OAC rule 3745-21-09(L)(2) for fixed roof storage tanks with a capacity less than 40,000-gallons.

c) Operational Restrictions

- (1) The permittee shall operate and maintain vapor balance transfer equipment in accordance with the manufacturer's specifications at all times during the transfer of materials through this emissions unit.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall collect and record the following information:
  - a. the types of volatile organic liquid(s) (VOL) being stored;
  - b. the monthly and annual throughputs of VOL materials being stored, in gallons; and
  - c. the maximum, true vapor pressure of the VOL materials being stored, in pounds per square inch absolute (psia).
- (2) The permittee shall record the scrubber liquid pH once-per-shift while the emissions unit and associated control equipment are in operation. The acceptable pH shall be maintained below 5.0 until such time as any required performance testing is conducted and the appropriate range for the pH is established to demonstrate compliance.

Whenever the monitored value for the pH deviates from the range(s) or minimum limit(s) established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. the date and time the deviation began;
- b. the magnitude of the deviation at that time;
- c. the date the investigation was conducted;
- d. the name(s) of the personnel who performed the investigation; and
- e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the control equipment pH within the acceptable range established in this permit, unless the permittee determined that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date the corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the pH of the scrubber liquid immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigations and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The range for the pH of the scrubber liquor are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (Cleveland DAQ). The permittee may request revisions to the permitted pH range based upon information obtained during future emissions tests that demonstrate compliance with the allowable limits established in this permit. In addition, the approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports to the Cleveland DAQ that identify:
  - a. each period of time when the pH of the scrubber liquor was outside of the appropriate range.

- b. any period of time, not including times when storage tank breathing emissions only are produced, when the emissions unit was in operation and the process emissions were not vented to the scrubber;
  - c. each incident of deviation described in “a” and “b” above where a prompt investigation was not conducted;
  - d. each incident of deviation described in “a” or “b” where prompt corrective action, that would bring the pH range into compliance with the appropriate range, was/were determined to be necessary and was/were not taken; and
  - e. each incident of deviation described in “a” or “b” where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and recordkeeping requirements of this permit.
  - f. the probable cause of each deviation (excursion);
  - g. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
  - h. the magnitude and duration of each deviation (excursion).
- (2) The permittee shall submit annual deviation (excursion) reports which identify any exceedance of the annual emission limitation for VOC. This written report shall be submitted to the Cleveland Division of Air Quality (Cleveland DAQ) by January 31 and shall cover the previous calendar year.
  - (3) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for the air contaminant sources identified in this permit.
  - (4) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA’s eBusiness Center: Air Services online web portal.
- f) Testing Requirements
- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:
    - a. Emissions Limitation:  
VOC emissions shall not exceed 1.2 TPY from this emissions unit.



**Final Permit-to-Install and Operate**

ASK Chemicals

**Permit Number:** P0109776

**Facility ID:** 1318000303

**Effective Date:** 7/24/2015

Applicable Compliance Method:

Annual VOC emissions shall be calculated using a current version of U.S. EPA's TANKS software program and the recordkeeping requirements specified in d)(1) above.

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1986.

**20. T140:TK-139**

**Operations, Property and/or Equipment Description:**

14,500-gallon fixed roof amine storage tank controlled by vapor balance and associated with an acidic scrubber.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Volatile organic compound (VOC) emissions shall not exceed 4.2 tons per year (TPY) from this emissions unit.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).
b.	OAC rule 3745-21-09(L)(2)	Exempt. See b)(2)e. below.
c.	OAC rule 3745-31-05(D)	See Section B.
d.	40 CFR Part 60, Subpart Kb	Exempt. See b)(2)a. below.

(2) Additional Terms and Conditions

- a. The emissions unit is not subject to 40 CFR Part 60, Subpart Kb, because the capacity is less than 75 m<sup>3</sup>.
- b. During filling operations, the emissions from this emissions unit shall be vented to the scrubber. Return cylinders and ventilation air from the drumming hood shall also be vented to the scrubber.
- c. The emissions, except for storage tank breathing losses, from this emissions unit shall be vented to the scrubber at all times when this emissions unit is in operation.
- d. Vapor balance shall be used while loading bulk materials into this emissions unit.
- e. This emissions unit is exempted from paragraph (L)(1) of OAC rule 3745-21-09 per the requirements of OAC rule 3745-21-09(L)(2) for fixed roof storage tanks with a capacity less than 40,000-gallons.

c) Operational Restrictions

- (1) The permittee shall operate and maintain vapor balance transfer equipment in accordance with the manufacturer's specifications at all times during the transfer of materials through this emissions unit.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall collect and record the following information:
  - a. the types of volatile organic liquid(s) (VOL) being stored;
  - b. the monthly and annual throughputs of VOL materials being stored, in gallons; and
  - c. the maximum, true vapor pressure of the VOL materials being stored, in pounds per square inch absolute (psia).
- (2) The permittee shall record the scrubber liquid pH once-per-shift while the emissions unit and associated scrubber are in operation.. The acceptable pH shall be maintained below 5.0 until such time as any required performance testing is conducted and the appropriate range for the pH is established to demonstrate compliance.

Whenever the monitored value for the pH deviates from the range(s) or minimum limit(s) established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. the date and time the deviation began;
- b. the magnitude of the deviation at that time;

- c. the date the investigation was conducted;
- d. the name(s) of the personnel who performed the investigation; and
- e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the control equipment pH within the acceptable range established in this permit, unless the permittee determined that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date the corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the pH of the scrubber liquid immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigations and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The range for the pH of the scrubber liquor are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (Cleveland DAQ). The permittee may request revisions to the permitted pH range based upon information obtained during future emissions tests that demonstrate compliance with the allowable limits established in this permit. In addition, the approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports to the Cleveland DAQ that identify:
  - a. each period of time when the pH of the scrubber liquor was outside of the appropriate range.
  - b. any period of time, not including times when storage tank breathing emissions only are produced, when the emissions unit was in operation and the process emissions were not vented to the scrubber;

- c. each incident of deviation described in “a” and “b” above where a prompt investigation was not conducted;
  - d. each incident of deviation described in “a” or “b” where prompt corrective action, that would bring the pH range into compliance with the appropriate range, was/were determined to be necessary and was/were not taken; and
  - e. each incident of deviation described in “a” or “b” where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and recordkeeping requirements of this permit.
  - f. the probable cause of each deviation (excursion);
  - g. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
  - h. the magnitude and duration of each deviation (excursion).
- (2) The permittee shall submit annual deviation (excursion) reports which identify any exceedance of the annual emission limitation for VOC. This written report shall be submitted to the Cleveland Division of Air Quality (Cleveland DAQ) by January 31 and shall cover the previous calendar year.
  - (3) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for the air contaminant sources identified in this permit.
  - (4) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA’s eBusiness Center: Air Services online web portal.
- f) Testing Requirements
- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:
    - a. Emissions Limitation:

VOC emissions shall not exceed 4.2 TPY from this emissions unit.

Applicable Compliance Method:

Annual VOC emissions shall be calculated by using a current version of U.S. EPA’s TANKS software program and the recordkeeping requirements specified in d)(1) above.



**Final Permit-to-Install and Operate**

ASK Chemicals

**Permit Number:** P0109776

**Facility ID:** 1318000303

**Effective Date:** 7/24/2015

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1992, per PTI application dated 7/1/1992.

**21. T154:TK-140**

**Operations, Property and/or Equipment Description:**

14,500-gallon fixed roof amine storage tank controlled by vapor balance and associated with an acidic scrubber.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) PTI 13-04496 issued 3/8/2005  Administrative modification of PTI 13-04496 issued 4/14/2005	Volatile organic compound (VOC) emissions shall not exceed 2.97 tons per year (TPY) from this emissions unit.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).
b.	OAC rule 3745-21-09(L)(2)	Exempt. See b)(2)e. below.
c.	OAC rule 3745-31-05(D)	See Section B.
d.	40 CFR Part 60, Subpart Kb	Exempt. See b)(2)a. below.

(2) Additional Terms and Conditions

- a. The emissions unit is not subject to 40 CFR Part 60, Subpart Kb, because the capacity is less than 75 m<sup>3</sup>.
- b. During filling operations, the emissions from this emissions unit shall be vented to the scrubber. Return cylinders and ventilation air from the drumming hood shall also be vented to the scrubber.
- c. The emissions, except for storage tank breathing losses, from this emissions unit shall be vented to the scrubber at all times when this emissions unit is in operation.
- d. Vapor balance shall be used while loading bulk materials into this emissions unit.
- e. This emissions unit is exempted from paragraph (L)(1) of OAC rule 3745-21-09 per the requirements of OAC rule 3745-21-09(L)(2) for fixed roof storage tanks with a capacity less than 40,000-gallons.

c) Operational Restrictions

- (1) The permittee shall operate and maintain vapor balance transfer equipment in accordance with the manufacturer's specifications at all times during the transfer of materials through this emissions unit.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall collect and record the following information:
  - a. the types of volatile organic liquid(s) (VOL) being stored;
  - b. the monthly and annual throughputs of VOL materials being stored, in gallons; and
  - c. the maximum, true vapor pressure of the VOL materials being stored, in pounds per square inch absolute (psia).
- (2) The permittee shall record the scrubber liquid pH once-per-shift while the emissions unit and associated scrubber are in operation.. The acceptable pH shall be maintained below 5.0 until such time as any required performance testing is conducted and the appropriate range for the pH is established to demonstrate compliance.

Whenever the monitored value for the pH deviates from the range(s) or minimum limit(s) established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. the date and time the deviation began;
- b. the magnitude of the deviation at that time;

- c. the date the investigation was conducted;
- d. the name(s) of the personnel who performed the investigation; and
- e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the control equipment pH within the acceptable range established in this permit, unless the permittee determined that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date the corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the pH of the scrubber liquid immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigations and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The range for the pH of the scrubber liquor are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (Cleveland DAQ). The permittee may request revisions to the permitted pH range based upon information obtained during future emissions tests that demonstrate compliance with the allowable limits established in this permit. In addition, the approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports to the Cleveland DAQ that identify:
  - a. each period of time when the pH of the scrubber liquor was outside of the appropriate range.
  - b. any period of time when the emissions unit was in operation and the process emissions were not vented to the scrubber;

- c. each incident of deviation described in “a” and “b” above where a prompt investigation was not conducted;
  - d. each incident of deviation described in “a” or “b” where prompt corrective action, that would bring the pH range into compliance with the appropriate range or limit, was/were determined to be necessary and was not taken; and
  - e. each incident of deviation described in “a” or “b” where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and recordkeeping requirements of this permit.
  - f. the probable cause of each deviation (excursion);
  - g. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
  - h. the magnitude and duration of each deviation (excursion).
- (2) The permittee shall submit annual deviation (excursion) reports which identify any exceedance of the annual emission limitation for VOC. This written report shall be submitted to the Cleveland Division of Air Quality (Cleveland DAQ) by January 31 and shall cover the previous calendar year.
  - (3) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for the air contaminant sources identified in this permit.
  - (4) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA’s eBusiness Center: Air Services online web portal.
- f) Testing Requirements
- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:
    - a. Emissions Limitation:

VOC emissions shall not exceed 2.97 TPY from this emissions unit.

Applicable Compliance Method:

Annual VOC emissions shall be calculated by using a current version of U.S. EPA’s TANKS software program and the recordkeeping requirements specified in d)(1) above.



**Final Permit-to-Install and Operate**

ASK Chemicals

**Permit Number:** P0109776

**Facility ID:** 1318000303

**Effective Date:** 7/24/2015

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 2005, per installation certificate dated 5/11/2005.

**22. Emissions Unit Group - Boilers: B005 and B006**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
B005	8.0 mmBtu boilers. Burn both natural gas and phenolic resin distillate.
B006	8.0 mmBtu boiler. Burns both natural gas and phenolic resin distillate.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	<b>Applicable Rules/Requirements</b>	<b>Applicable Emissions Limitations/Control Measures</b>
a.	OAC rule 3745-31-05(C) PTI 13-00636 for B006 issued 5/13/1980 Chapter 31 modification for B005 and B006 13-04681 issued 11/2/2006	Particulate emissions (PE) shall not exceed 2.19 tons per year (TPY) from each unit. See b)(2)a. below.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20% opacity as a six minute average, except as provided by rule.
c.	OAC rule 3745-17-10(C)(1)	PE shall not exceed 0.4 lb PE/mmBtu.
d.	OAC rule 3745-18-06(B)	Exempt. See b)(2)b. below.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-31-05(D)(1) FEPTIO to avoid Title V	See Section B.
f.	ORC rule 3704.03(T)(4)	See b)(2)c. below.

(2) Additional Terms and Conditions

- a. The potential to emit based on the allowable limit from OAC rule 3745-17-10(C)(1) is greater than ten tons per year for each unit. In order to ensure that the potential to emit for each emissions unit remains below ten tons per year of particulate emissions, the permittee has requested a voluntary emission limit at the uncontrolled potential to emit.
- b. The emissions units are exempt from the requirements of OAC rule 3745-18-06 because the total rated heat input capacity is less than 10 mmBtu/hr.
- c. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the organic compound (OC), sulfur dioxide (SO<sub>2</sub>), nitrogen oxide (NO<sub>x</sub>), carbon monoxide (CO), and particulate emissions (PE) from this air contaminant source since the uncontrolled potential to emit for the OC, SO<sub>2</sub>, NO<sub>x</sub>, CO, and PE are less than ten tons per year for each unit.

c) Operational Restrictions

- (1) The permittee shall only burn natural gas and/or phenolic resin distillate material as fuel in the emissions units.
- (2) The permittee shall operate and maintain the fuel burners in accordance with the manufacturer's recommendation to ensure efficient combustion of the fuel(s).

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain monthly records of the amount of phenolic resin distillate material burned in each emissions unit.
- (2) For each day during which the permittee burns a fuel other than natural gas or phenolic resin distillate material, the permittee shall maintain a record of the type and quantity of fuel burned in the emissions unit.

e) Reporting Requirements

- (1) The permittee shall identify in the PER each day during which a fuel other than natural gas or phenolic resin distillate material is burned in the emissions units.

- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
  - (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
- f) Testing Requirements
- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:
    - a. Emissions Limitation:

PE shall not exceed 0.4 lb/mmBtu for each emissions unit.

Applicable Compliance Method:

The pound per hour emission rate shall be determined by multiplying the emission factor (0.0075) from Section 1.4 (Natural Gas Combustion) of AP-42, Fifth Edition, Volume 1, Chapter 1 by the mmBtu/hour rating (8.0) of the natural gas-fired boiler.

Since the emissions factor is given in a volume format, it was converted to an energy basis by dividing the given factor by 1,020 mmBtu/106 scf and added to the particulate emissions due to ash content.

The lbs PE/hour for ash was determined by multiplying the maximum burn rate of the distillate (2.5 gallons/minute), 60 minutes/hour, the density of the distillate (2.5 gallons/minute) 60 minutes/hour the density of the distillate (8.367 lbs/gallon), and the maximum ash content by weight (0.035%). This equation is depicted below:

$$(8.0 \text{ mmBtu/hour}) \times (0.00745 \text{ lb PE/mmBtu}) + (2.5 \text{ gallons/minute}) \times (60 \text{ minutes.hour}) \times (8.367 \text{ lbs/gallons}) \times (0.035\%) = \text{lbs PE/hr.}$$

If required, compliance with the allowable particulate emissions limit shall be determined through emissions testing in accordance with U.S. EPA Reference Methods 1 through 5 of 40 CFR Part 60, Appendix A.
    - b. Emissions Limitation:

PE shall not exceed 2.19 TPY for each emissions unit.



Applicable Compliance Method:

The annual limitation was developed by multiplying the pound per hour emission rate by the maximum operating schedule of 8,760 hours per year, and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

c. Emissions Limitation:

Visible PE shall not exceed 20% opacity as a six-minute average, except as provided by this rule.

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using the methods and procedures specified in U.S. EPA Reference Method 9.

g) Miscellaneous Requirements

- (1) Emissions units B005 and B006 were installed in 1978 and modified in November of 2006 to burn distillate.

**23. Emissions Unit Group - Loading Rack Group 6: J014 and J018**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
J014	Tote filling station #1 (100 gallons per minute)
J018	Tote filling station #2 (100 gallons per minute)

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)b., c)(1), d)(1), e)(3)

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	<b>Applicable Rules/Requirements</b>	<b>Applicable Emissions Limitations/Control Measures</b>
a.	OAC rule 3745-31-05(A)(3)	<p>Volatile organic compound (VOC) emissions shall not exceed 242.8 pounds per month and 1.46 tons per year (TPY) from emissions units J014 and J018 each.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).</p>
b.	OAC rule 3745-31-05(D)	See Section B.

(2) Additional Terms and Conditions

a. The VOC emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be

developed in the future the permittee shall use them, provided the emission factors are mutually agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.

c) Operational Restrictions

- (1) This emissions unit shall not transfer more than 21,024,000-gallons each, in any rolling 12-month period.
- (2) All leaks in liquid lines shall be repaired within five days after identification.
- (3) The permittee shall not permit liquid to be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain monthly records of the following information for emissions units J014 and J018:
  - a. the company identification of each material loaded;
  - b. the number of gallons of each VOC-containing material loaded through the emissions unit;
  - c. the molecular weight of each material; and
  - d. the vapor pressure of each material, in pounds per square inch absolute (psia).
- (2) The permittee shall maintain annual records of the total VOC emissions, in tons (an annual summation of the monthly VOC emissions (a summation of the monthly emissions, divided by 2,000 lbs/ton)).

e) Reporting Requirements

- (1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit
- (3) The permittee shall include in the Annual PER, any record showing a deviation of the allowable production limitation. Such records shall include the following information:
  - a. an identification of each rolling 12-month period during which the material transferred exceeded 21,024,000-gallons each; and

- b. a description of any corrective actions taken to address the exceedances identified above.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 242.8 pounds per month from emissions units J014 and J018 each.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation 1 from AP-42, Section 5.2, dated June, 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.1386 \text{ lbs VOC/1,000 gal}$$

(0.1386 lb VOC/1,000 gal) x (total gallons of each material transferred/month)\* = lbs VOC emitted/month

\*material transferred shall not exceed 21,024,000 gallons for each emissions unit.

b. Emissions Limitation:

VOC emissions shall not exceed 1.46 TPY from each emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in f)(1)a. above multiplied by 1 ton/2000 pounds.



**Final Permit-to-Install and Operate**

ASK Chemicals

**Permit Number:** P0109776

**Facility ID:** 1318000303

**Effective Date:** 7/24/2015

g) Miscellaneous Requirements

- (1) Emissions unit J014 was installed in 2000. Emissions unit J018 was installed in 1990.

**24. Emissions Unit Group - Reactors: P010 and P011**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
P010	6,500-gallon reactor with caustic scrubber.
P011	6,500-gallon reactor with caustic scrubber.

- a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
- (1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
- a. None.
- (2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
- a. None.
- b) **Applicable Emissions Limitations and/or Control Requirements**
- (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	<b>Applicable Rules/Requirements</b>	<b>Applicable Emissions Limitations/Control Measures</b>
a.	OAC rule 3745-31-05(A)(3) PTI 13-01786 issued final 6/22/1988	Volatile organic compound (VOC) emissions shall not exceed 3.0 pounds per hour, 15.0 pounds per day and 3.2 tons per year (TPY) from each emissions unit.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).
b.	OAC rule 3745-21-07(M)(3)(c)(ii)	See b.)(2)b. below.
c.	OAC rule 3745-31-05(D)	See Section B.

(2) Additional Terms and Conditions

- a. The emissions from the emissions units shall be vented to the caustic scrubbers at all times the emissions units are in operation.
- b. The requirement of OAC rule 3745-21-07(M)(3)(a) and M(3)(b) do not apply to this emissions unit because the uncontrolled potential to emit for OC emissions is less than 40 pounds per day.

c) Operational Restrictions

- (1) The maximum potential number of batches each reactor can process is two batches per day and 730 batches per year.
- (2) Water flow into the water seal pots shall be maintained when the emissions unit is in operation.

d) Monitoring and/or Recordkeeping Requirements

- (1) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range or limit for the pressure drop across the scrubber shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.
- (2) The permittee shall record the scrubber liquid pH once-per-shift while the emissions unit and associated scrubber are in operation. The acceptable pH shall be maintained at or above 11.5 until such time as any required performance testing is conducted and the appropriate range for the pH is established to demonstrate compliance.

Whenever the monitored values for the scrubber pressure drop and liquid pH deviate from the range(s) or minimum limit(s) established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. the date and time the deviation began;
- b. the magnitude of the deviation at that time;
- c. the date the investigation was conducted;
- d. the name(s) of the personnel who performed the investigation; and
- e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) established in this permit, unless the permittee determined that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation

ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date the corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the pressure drop across the scrubber and pH of the scrubber liquid immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigations and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

These ranges and/or limits for the pressure drop across the scrubber and the pH of the scrubber liquor are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (Cleveland DAQ). The permittee may request revisions to the permitted range or limit for the pressure drop or pH range based upon information obtained during future emissions tests that demonstrate compliance with the allowable limits established in this permit. In addition, the approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

(3) The permittee shall collect and record the following information each day for each emissions unit:

- a. the name and company identification of each VOC-containing material produced;
- b. the amount, in gallons of each VOC-containing material produced;
- c. the VOC content of each product produced;
- d. the vapor pressure of the VOC-containing materials being reacted; and
- e. the total daily and average hourly VOC emission rate, in pounds/day and pounds/hour respectively, from all VOC-containing materials produced in each emissions unit, calculated as follows:

$$(0.74 \text{ lb VOC}/1,000 \text{ gallons}) \times (\text{total gallons produced}/\text{day}) = \text{lbs VOC}/\text{day}$$

$$(\text{lbs VOC}/\text{day}) \times (\text{day}/24 \text{ hours}) = \text{pounds of VOC emitted per hour.}$$

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports to the Cleveland DAQ that identify:
  - a. each period of time when the pressure drop across the wet scrubber and/or the liquid pH was outside of the appropriate range or exceeded the applicable limit contained in this permit;
  - b. each period of time (start time and date, and end time and date) when the emissions unit was in operation and the process emissions were not vented to the scrubber;
  - c. the probable cause of each deviation (excursion);
  - d. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
  - e. the magnitude and duration of each deviation (excursion).
- (2) The permittee shall identify in the annual Permit Evaluation Report (PER) each day in which the emissions units produced more than two batches per day or 730 batches per year.
- (3) The permittee shall identify in the annual PER the following information concerning the operations of the wet scrubber during the 12-month reporting period for this emissions unit:
  - a. each period of time when the pressure drop across the wet scrubber and/or the liquid pH were outside of the appropriate ranges.
  - b. any period of time when the emissions unit was in operation and the process emissions were not vented to the scrubber;
  - c. each incident of deviation described in “a” and “b” above where a prompt investigation was not conducted;
  - d. each incident of deviation described in “a” or “b” where prompt corrective action, that would bring the pressure drop and/or pH range into compliance with the appropriate range or limit contained in this permit, was determined to be necessary and was not taken; and
  - e. each incident of deviation described in “a” or “b” where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and recordkeeping requirements of this permit.
- (4) Annual PER forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting

period of no more than twelve-months for the air contaminant sources identified in this permit.

- (5) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 3.0 pounds per hour and 15.0 pounds per day from each emissions unit.

Applicable Compliance Method:

Compliance shall be determined through the recordkeeping requirements located in d)(3).

The VOC emission factor used to calculate the emissions for this emissions unit was established by the permittee based on the worst case product produced and assuming 100% of the VOC emissions are emitted. Should more accurate emission factors be developed in the future, the permittee shall use them, provided the emission factors are mutually agreeable between the Ohio EPA, through the Cleveland DAQ, and ASK Chemicals.

If required, compliance with the hourly VOC emission limitation shall be determined through emission testing conducted in accordance with Method 25 or 25A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

b. Emissions Limitation:

VOC emissions shall not exceed 3.2TPY from each emissions unit.

Compliance with the annual limitation shall be demonstrated if compliance with the pound per hour and pound per day limitations are maintained.

g) Miscellaneous Requirements

- (1) Modeling to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F)(4)(b), was not necessary because the emissions units maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires permittee to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air



**Final Permit-to-Install and Operate**

ASK Chemicals

**Permit Number:** P0109776

**Facility ID:** 1318000303

**Effective Date:** 7/24/2015

contaminant to increase above 1.0 ton per year may require the permittee to apply for an obtain a new permit to install.

- (2) P010 and P011 were installed in 1988.