

United States Environmental Protection Agency / Region 4

Risk Management Program Inspection Report

Brenntag Mid-South, Inc.

Henderson, Kentucky

August 10, 2023

1.0 Introduction

The U.S. Environmental Protection Agency's efforts to reduce the likelihood and severity of chemical accidents includes planning and legislative initiatives such as the National Contingency Plan, the Emergency Planning and Community Right-to-Know Act (EPCRA), and the Accidental Release Prevention requirements under Section 112(r) of the Clean Air Act (CAA), as amended in 1990. This report outlines an inspection of the Risk Management Program (RMP) as mandated by Section 112(r)(7) of the CAA.

The focus of this inspection was to assess the RMP for the chemical distribution process at the Brenntag Mid-South, Inc., facility located in Henderson, Henderson County, Kentucky. This facility was selected for inspection because it hadn't been inspected under the RMP within the last five years. The inspection, which was conducted on August 10, 2023, consisted of an examination of program documentation, as well as site reviews of various aspects of facility operations. Personnel from the facility participated throughout the inspection. Requested program documents were provided for further review off-site. This report will provide a background of the facility and a listing of observations.

2.0 Background

The Brenntag Mid-South, Inc., facility is located in Henderson, Kentucky. The facility stores, repackages, and distributes chemicals such as cyclohexylamine, chlorine, sulfur dioxide, anhydrous ammonia, aqua ammonia, and hydrofluoric acid. Each chemical is regulated under its own program level and the processes are regulated as program level 2 and program level 3. In addition to repackaging chemicals for distribution, the facility also manufactures bleach by mixing chlorine with sodium hydroxide. The chemical distribution process at the facility is subject to the RMP requirements of 40 C.F.R. Part 68 and EPCRA Section 302. The background specifics are summarized as follows in Table 1.

TABLE 1: Inspection Information Summary

Inspection Team

Lead Inspector: Jordan Noles

Inspector: Chet Gala

Inspector-in-Training: Justin Stark

Date of Facility Visit: August 10, 2023

Facility Identification

Name: Brenntag Mid-South, Inc.

Street Address: 1405 Highway 136 West

City: Henderson County: Henderson State: Kentucky Zip: 42420

EPA Facility ID No: 100000044034

Dun & Bradstreet (D&B) No: 41167107

Latitude: 37.810556

Longitude: -087.654833

Name, address and phone of corporate parent company:

Owner/Operator: Brenntag North America

Mailing Address: 5083 Pottsville

City: Loveland State: Colorado Zip: 80538

Name, title, and email of person responsible for 40 C.F.R. Part 68 implementation:

Name: Mike Theising

Title: Operations Manager

Phone: (270) 860-5984

Email: michael.theising@brenntag.com

Name and title of emergency contact:

Name: Mike Theising

Title: Operations Manager

Day phone: (270) 830-1369

24-hour Phone: (270) 860-5984

Email: michael.theising@brenntag.com

Name and titles of stationary source personnel involved in site inspection (*accompanied site tours, provided documents and explanations*):

Name: Joe Pryor

Title: SRQ Manager

Phone: (270) 577-1956

Email: joe.pryor@brenntag.com

Name: Mike Theising

Title: Operations Manager

Phone: (270) 860-5984

Email: michael.theising@brenntag.com

Name: Jacob Miller

Title: SRQ Coordinator

Phone: (270) 454-4194

Email: jwmiller@brenntag.com

Name: Bill Wilson
Title: Regional Operations Manager
Phone: (270) 860-5681
Email: bwilson@brenntag.com

Name: Alex Fruit
Title: Production Manager
Phone: (270) 860-7039
Email: afruit@brenntag.com

Name: Bryon Mason
Title: Director QSHE
Phone: (270) 724-8380
Email: bmason@brenntag.com

Name: John Warner
Title: Regulatory Compliance Manager
Phone: (270) 748-6210
Email: john.warner@brenntag.com

Note: This is not a union facility.

Date and Program Levels of Submitted Risk Management Plan

Date of initial submission: June 17, 1999

Date of most recent submissions: November 18, 2021

Process ID	Process Description	Process Chemical ID	Process Program Level	Chemical Name	CAS Number	Quantity (lbs)	Flammable / Toxic
1000121073	Cyclohexylamine	1000151518	Level 2	Cyclohexylamine	108-91-8	50,000	Toxic
1000121074	Chlorine Storage	1000151519	Level 3	Chlorine	7782-50-5	1,800,000	Toxic
1000121075	Sulfur Dioxide Storage	1000151520	Level 3	Sulfur Dioxide (anhydrous)	7446-09-5	1,500,000	Toxic
1000121076	Anhydrous Ammonia	1000151521	Level 3	Ammonia (anhydrous)	7664-41-7	265,000	Toxic
1000121077	Aqua Ammonia	1000151522	Level 3	Ammonia (conc 20% or greater)	7664-41-7	350,000	Toxic
1000121078	Hydrofluoric Acid Cont.	1000151523	Level 3	Hydrogen fluoride/Hydrofluoric acid (conc 50% or greater)	7664-39-3	17,000	Toxic

3.0 Observations

The inspection of the Brenntag Mid-South, Inc., facility evaluated various sections of the RMP regulations (40 C.F.R. Part 68, Program Level 2/3) and the inspection checklist included in “Guidance for Conducting Risk Management Programs Inspections under Clean Air Act Section 112(r).” The inspection began with an opening discussion of facility operations. The discussion was followed by a tour of the facility’s chemical distribution process area. EPA inspectors then requested paperwork associated with the facility’s Risk Management Plan (RMPlan). The documents were reviewed by EPA inspectors on-site and provided for review off-site. An inspection out-brief was conducted where EPA inspectors described their observations. Observations from the RMP inspection at the Brenntag Mid-South, Inc., facility are discussed below:

1. 40 C.F.R. § 68.39(a) requires the owner or operator to maintain records on the offsite consequence analyses for worst-case scenarios, including a description of the vessel or pipeline and substance selected as worst case, assumptions and parameters used, and the rationale for selection; assumptions shall include use of any administrative controls and any passive mitigation that were assumed to limit the quantity that could be released. Documentation shall include the anticipated effect of the controls and mitigation on the release quantity and rate.
 - Facility representatives provided the worst-case scenario; however, the rationale for selecting the scenario was not included in the documents.
2. 40 C.F.R. § 68.39(b) requires the owner or operator to maintain records on the offsite consequence analyses for alternative release scenarios, including a description of the scenarios identified, assumptions and parameters used, and the rationale for the selection of specific scenarios; assumptions shall include use of any administrative controls and any mitigation that were assumed to limit the quantity that could be released. Documentation shall include the effect of the controls and mitigation on the release quantity and rate.
 - Facility representatives provided the alternative release scenario; however, the rationale for selecting the scenario was not included in the documents.
3. 40 C.F.R. § 68.65(d)(2) requires the owner or operator to document that equipment complies with recognized and generally accepted good engineering practices (RAGAGEP).
 - At the time of the inspection, the pipes around the two 30,000-gallon ammonia tanks and the sulfur dioxide tank were not consistently labeled. Some pipes had direction of flow, but the contents labeling is lacking on the pipes. The ammonia piping should be labeled/colored in accordance with the Pipe Marking Guide, American National Standard Institute/American Society of Mechanical Engineers (ANSI/ASME) A13.1 – 2007 Standard for the Identification of Pipes.

4. 40 C.F.R. § 68.73(e) requires the owner or operator to correct deficiencies in equipment that are outside acceptable limits (defined by the process safety information in 40 C.F.R. § 68.65) before further use or in a safe and timely manner when necessary means are taken to assure safe operation.

- Facility representatives provided the inspection team with inspection reports for Ammonia Tanks AA-1 and AA-2. The reports were generated from external inspections and ultrasonic (UT) testing that were conducted on the two 30,000-gallon ammonia tanks on November 02, 2021, by a third-party company, Applied Technical Services. The results from the tests indicate the thickness is below the minimum allowable value on three components for each ammonia tank and one on the sulfur dioxide tank.

Observation 2 in the “Observation” column on page 6, “Recommendations” of each report states, *“Multiple shell and head readings were at or below the required minimum thickness. Pitting was present throughout the exterior ranging from 1/32” – 1/16”.*” Under the “Recommended Action” column, the report states, *“Re-rate the vessel using an allowable stress based off the latest edition of the ASME Code Per API-510 8.2 (i.e. 3.5 a design factor vs. the original 4.0 design factor). -OR- Re-rate the vessel to a lower MAWP.”* This recommendation has a priority ranking of one (1) – *“High likelihood/consequence of failure (or) Critical code/standard deficiency (or) May not be fit for service without action.*

After the inspection, facility representatives reached out to another contractor, PK Mechanical LLC (PK), to assist with determining if a re-rate of the vessel would be acceptable for the two ammonia tanks. The facility drafted a document labeled Memorandum for Record: Mechanical Integrity. The document states, *“PK conducted calculations and determined that re-rating our tanks to allowable stress values of the latest ASME design code (rather than the original ASME design code – ASME Sec VIII Div. 1 1993 Edition w/ Winter 1984 Addenda) would be safe. ...PK Mechanical is submitting a formal request for re-rate on our behalf. After official review and pressure testing of vessels, the tanks will be officially re-rated to new allowable stress values.”* It has been nearly two years since the UT tests were performed on the anhydrous ammonia vessels and the facility did not take action until after the RMP inspection on August 10, 2023.

Inspection Report,

Prepared by:

**JORDAN
NOLES**

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Jordan Noles, Inspector
North Air Enforcement Section
U.S. EPA Region 4

Approved by:

**JASON
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Jason Dressler, Section Chief
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